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NB-IRDT
New Brunswick Institute for Research, Data and Training

Characterizing The Francophone Population in Greater Saint John (2015-2020)

Andy Balzer, MSc
Jillian Cameron, MSc
Ted McDonald, PhD
Rawia Mokhtar, PhD

ARC
DE SAINT-JEAN

Association Régionale de la
Communauté francophone de Saint-Jean inc.

Project Title

Characterizing the Francophone population in Greater Saint John (2015-2020)

Principal Investigator

Ted McDonald, Director, NB-IRDT

Research Team

Andy Balzer, Data Analyst, NB-IRDT
Jillian Cameron, Research Assistant, NB-IRDT
Rawia Mokhtar, Research Projects Coordinator, NB-IRDT

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Project Data

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Table of Contents

List of Figures

List of Tables

List of Acronyms

Acronym	Definition
CA	Census Agglomeration
CMA	Census Metropolitan Area
GSJ	Greater Saint John
NB	New Brunswick
NB-IRDT	New Brunswick Institute for Research, Data and Training

Executive Summary

Bilingualism makes the province of New Brunswick (NB) unique within Canada, bringing with it a high level of linguistic diversity and cultural enrichment. However, as Canada's only officially bilingual province, NB also faces issues of language barriers affecting segments of its population. For instance, there is limited information about the size of the Francophone community that would prefer service in French in majority Anglophone areas. Without this information, it is impossible to accurately represent the potential demand for French-language health and social services and how to meet that demand most efficiently.

In this report, we attempt to address language barriers specifically in the Greater Saint John (GSJ) region[1] by constructing a population profile of the Francophone population of GSJ. To fill this knowledge gap and to inform discussions of language barriers in NB, this report supports an analysis of the extent to which health and other support services might be provided in French in majority-Anglophone areas of the province. Measures of interest include residents' health status, health service use, social services receipt, household composition, and neighbourhood socioeconomic profile. We consider how these measures have changed over time and how they compare for Francophone and Anglophone New Brunswickers living in urban majority-French communities, as well as Anglophone residents living GSJ, Moncton, and the Rest of NB.[2]

To date, the only information on language preference in NB administrative data is based on records in the province's Medicare system, and there is reason to believe this might underestimate actual language preference for health services. As such, we consider adjustments based on measures of area-level language fluency as reported in the 2016 Canadian Census.

Highlight of Findings

Francophone Population

Using three measures of language preference, it is estimated that between 20-33% of New Brunswickers self-report as Francophone. For the GSJ region, it is estimated that 1-5% of the population is Francophone, compared to 16-36% of the population in Moncton and 27-40% of the population in the Rest of NB.

- According to data on preferred language of correspondence in the NB Medicare system, 79.90% of NB can be considered Anglophone while 20.10% can be considered Francophone. However, in the 2016 Census, 28.97% of NB residents report French as their language spoken most often at home, and 32.84% report French as their mother tongue.

[1] GSJ includes the City of Saint John, Rothesay, Hampton, Quispamsis, and surrounding areas.
[2] "Rest of NB" includes all Forward Sortation Areas (FSAs) fully outside the Saint John and Moncton CMAs as classified by the first three digits of the areas' postal codes.

This suggests Medicare data underestimates the proportion of Francophones in NB.

- If we use Medicare data on preferred language of correspondence, we find the Francophone population in GSJ includes 1,065 people (1.00% of the GSJ population). However, when we apply Census-based scaling factors, it is estimated that 1,575 GSJ residents speak French most often at home (1.48% of GSJ population), and 4,985 are estimated to have French as their mother tongue (4.70% of GSJ population).

Demographic Characteristics

While the Francophone population in GSJ shares similar age, sex, and household characteristics with the overall population of NB, they are more than twice as likely to not be considered citizens or long-term residents of NB and are also more than twice as likely to have lived in the same area for less than five years, suggesting greater population mobility.

- The distribution of age, sex, and household composition for Francophones in GSJ is similar to NB, though there is a larger proportion of households comprised of two adults with children in Francophone GSJ.

- 7.98% of Francophones in GSJ are not considered citizens or long-term residents of NB. This is more than twice the percentage of individuals in the NB population who are not considered citizens or long-term residents (3.81%).

- 20.66% of Francophones in GSJ have lived in the same Forward Sortation Area (FSA) for less than five years. Again, this is more than double the percentage of individuals in the NB population who have lived in the same FSA for less than five years (9.5%).

Socioeconomic and Home Care Measures

Compared to the population of NB, a larger proportion of the Francophone population in GSJ is in high-income and low-income quintiles, with a lower proportion in the middle-income range. The GSJ Francophone population (1-5% of the GSJ population) represents approximately 0.5-2.2% of social assistance and home care recipients in GSJ. Less than half the Francophone population preferring French medical correspondence received home care service in French.

- The NB population is evenly distributed at around 20% for each income quintile by construction, whereas 29.41% of the Francophone GSJ population is in quintile 5 (high income), 23.04% is in quintile 1 (low income), and 14.22% is in quintile 3 (middle income).

- From 2015-2018, estimates of the number of social assistance recipients in Francophone GSJ range from 100-470 (using Census-based Francophone language definition scaling factors). This represents 0.47-2.22% of social assistance recipients in GSJ. Using the same scaling factors, 2015-2018 estimates of the number of Francophones in home care in GSJ range from 35-165, representing 0.48-2.27% of individuals in home care in GSJ.

- Of the GSJ individuals in home care with a Francophone Medicare preferred language of correspondence, 42.86% received home care service in French, whereas the other 57.14% received home care service in English.

Chronic Disease Measures

The Francophone population in GSJ has a similar prevalence of the most common chronic diseases as the overall population of NB, though with a lower prevalence of hypertension and a significantly lower number of years since diagnosis.

- Francophones in GSJ show similar prevalence rates as the NB population for the four most prevalent chronic diseases (diabetes, hypertension, mental illness, and mood and anxiety disorders), with the largest difference occurring for hypertension, where rates for Francophone residents of GSJ are relatively lower (25.73% compared to 32.69%).

- Francophones in GSJ have a significantly lower average number of years since diagnosis for chronic conditions (5.38 years) compared to every other area and language in NB, which are each around 10 years since diagnosis.

Hospital Admissions and Days in Hospital per Admission

The Francophone population in GSJ has the lowest rate of hospital admissions per capita of the examined areas and language groups across NB, and it has a much lower number of average days in hospital per admission compared to Anglophones in GSJ.

- From 2015-2020, estimates of Francophone hospital admissions in GSJ range from 850 to 3,980 (using Francophone GSJ language definition scaling factors). This results in the lowest rate of hospital admissions per capita, at 0.139, of the six groups examined in this report. The highest rate, 0.192 hospital admissions per capita, is found for the Anglophone NB population in the Rest of NB.

- The Saint John CMA has the highest average number of days in hospital per admission in NB, with 9.22 days per admission for the Anglophone population and 6.95 days per admission for the Francophone population.

Physician Visits

The Francophone population in GSJ comprised an estimated 24% of visits to the Médisanté GSJ clinic from 2015-2018. While Francophone visits increased by 55% over the study period, the majority visits to the clinic came from Anglophones in GSJ.

- Estimates for the number of physician visits from 2015-2018 for Francophones in GSJ range from 27,965 to 130,875 (using the Francophone GSJ language definition scaling factors).

- From 2015-2018, the estimated number of GSJ Médisanté visits from Francophones in GSJ was 4,940, or 23.92% of GSJ Médisanté visits (using Medicare preferred language of correspondence). If everyone who reported French as a mother tongue in the 2015 Census attended GSJ Médisanté for their physician visits, this would constitute 20,650 visits over the study period.

- Visits to the Médisanté clinic in Saint John increased during 2015-2018 for both Anglophones and Francophones. Anglophone visits increased by 83.57% (from 2,830 to 5,195) while Francophone visits increased by 55.19% (from 1,060 to 1,645). Anglophone visits to the clinic continued to be much higher than Francophone visits.

Introduction

Linguistic minority groups around the world face health inequalities due to language barriers. However, little research has been conducted on the experience of official language minorities in Canada (Marmen & Delisle, 2003). English and French are the two recognized official languages in Canada, but the use of English is predominant in all provinces except Quebec. Francophones represent around 22.8% of Canada's population; however, this proportion reaches 31.8% in New Brunswick, the only officially bilingual province in Canada (Statistics Canada [StatCan], 2017a).

Language barriers impact the delivery of health services and health outcomes through reduced quality of care and patient safety.[3] When patients and healthcare providers speak the same language, this can lead to more accurate patient assessment, appropriate examinations, diagnosis, and prescribed treatment (Nelson, 2002). Meanwhile, language barriers can negatively impact chronic disease management, for example through difficulty reporting symptoms. Difficulties in communication can also adversely affect end-of-life care, pain management, common out-of-hospital safety, and readmissions for the same health problem, and they can prolong hospital length of stay (Bowen & De Moissac, 2018).

According to Bouchard et al. (2012), chronic diseases are more common in Francophones than in Anglophones, as illustrated by Canadian population health survey data (cited in Gauthier et al., 2015). Regional analyses of health measures by linguistic group show that Francophones residing in some northern Ontario communities are more vulnerable when compared with Francophones in the rest of Canada (Gauthier et al., 2015). Additionally, in aging Francophone communities, language barriers could expose these individuals to greater health risks than those faced by the general population (Fédération des communautés francophones et acadienne du Canada [FCFA], 2001).

New Brunswickers have the right to receive healthcare in the official language of their choice, but practical challenges remain in accessing these services in French for Francophones living in majority Anglophone areas of New Brunswick. Addressing this knowledge gap is important for determining the potential demand for French language health services and how to meet that demand most efficiently.

Unfortunately, there is no widely available indicator of language preference being recorded in the various information systems in use in NB, so the composition of the population who would prefer service in French in majority Anglophone areas is not well known. The approach we take in this report is to use language of preference for Medicare correspondence as indicated in the provincial Medicare system and consider several adjustments to this status based on area-level data on language fluency from the 2016 Census of Canada.

[3] Quality of care is defined as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes consistent with current professional knowledge." Patient safety refers to the reduction and mitigation of unsafe acts and increased use of best practices leading to optimal patient outcome (The World Health Organization, 2009).

We start the analysis by comparing the Francophone population counts obtained using the Medicare definition of language and using two additional Census definitions of language (language spoken most often at home and mother tongue) to show differences in Francophone population estimates when using the various language definitions, particularly in the Greater Saint John (GSJ)[4] area.

The objective of this report is to characterize the Francophone population of GSJ and analyze the provision of health and other support services in French in majority-Anglophone areas of the province. In this report, we answer the following research questions:

- Have there been changes in the Francophone community profile in GSJ (number and composition) over the period 2015-2020?
- How do the estimated size and composition of the Francophone community compare with the data from the most recent Census profile?
- What are the health, economic, and geographic profiles of the Francophone community, and how do these measure against non-Francophones in GSJ as well as the Francophone population of majority Francophone urban communities such as Moncton?
- To what extent are the outcomes and experiences of older members of the Francophone community in GSJ similar to those of older members of comparison communities (non-Francophones in GSJ and the Francophone population of Moncton)?
- What are the characteristics of the members of the Francophone community who have received health services at the Médisanté health clinic in GSJ compared to those who have not?

Data and Methodology

In this section, we provide an overview of the data used for this analysis. We then split the methodology into two parts. The first part defines language and area using Medicare data and describes how the results will be compared to Census definitions of language using scaling factors derived from that data. The second part explains the methodology for several demographic, socioeconomic, and health measures obtained using the Medicare definition of language. All counts in the results throughout this report are random-rounded to base 5 to protect the confidentiality of individuals associated with small sample sizes.

[4] GSJ includes the City of Saint John, Rothesay, Hampton, Quispamsis, and surrounding areas.

Data Sources

Several data sets available through the secure research environment at the New Brunswick Institute for Research, Data and Training (NB-IRDT) were used to conduct the analysis for this report, though the range of years for which data is available varies by data set. Table 1 summarizes the data sets used throughout this report.

Table 1: NB-IRDT Data Sets Used to Conduct Analysis

Data Set	Information Available	Year Range
Citizen Data	Demographics of NB population, particularly Francophone Saint John	2015-2020
Social Assistance Data	Indicators for recipients of social assistance	2015-2018
Long-Term Care Data	Indicators for participants in the NB Home Care Program	2015-2018
CCDSS (multiple data sets)*	Indicators for individuals with various chronic conditions	2015-2018
NB Cancer Data	Indicators for individuals with cancer	2015-2018
Discharge Abstract Data	Health factors such as number of hospital admissions and number of days per admission	2015-2020
NB Physician Billing	Health factors such as number of physician visits	2015-2018

* The specific CCDSS data sets used for analysis include CCDSS Acute Myocardial Infarction, Asthma, Chronic Obstructive Pulmonary Disease, Dementia, Diabetes, Epilepsy, Heart Failure, Hypertension, Ischemic Heart Disease, Mental Illness, Mood and Anxiety Disorders, Schizophrenia, and Stroke.

Note that the Citizen Data at NB-IRDT contains demographic and geographic information on all NB residents who register for Medicare in NB.

Language and Area

In this section, we describe how language is defined from the Citizen Data (i.e., Medicare data), as well as corresponding definitions of language from the 2016 Census. Geographic area is then defined using the Citizen Data. Scaling factors are computed and used to generate predictions of the incidence of Francophone characteristics and health service use on the assumption that these proportions reflect the number of individuals who would prefer health services in French.

Note that these Census scaling values are based on individuals aged 19+ as of 2016 although the focus of our analysis is on individuals aged 18+.

Language Definitions

We use three definitions of language, one from Medicare data along with two from the Census:

- Preferred language for correspondence (Medicare)
- Language spoken most often at home (Census)
- Mother tongue (Census)

We distinguish Francophone and Anglophone individuals using a language variable in the Citizen Data that indicates whether an individual prefers their Medicare correspondence in English or French. We use this variable to indicate Francophone individuals in the province. This is the only indicator of language preference available at the level of the individual. Since language preference for Medicare correspondence is not necessarily indicative of a person's language fluency or preference for communication, we also utilize area-level statistics on two indicators of language preference from the Census of Canada: language spoken most often at home and mother tongue.

We compare population counts distinguishing Francophone and Anglophone individuals using Medicare preferred language of correspondence, with corresponding population counts computed using Census definitions of language to scale reported values based on the assumption that Census estimates more accurately reflect an individual's language preference. Select results compare Francophone population counts using each of the three definitions.

Area Definitions

Geographic areas are defined in the Medicare data to approximate Census areas. Census and associated data are available at the level of the Census Metropolitan Area (CMA)[5] while Medicare data records Forward Sortation Areas (FSAs), which are determined by the first three digits of a postal code. Due to differences in how Statistics Canada defines CMAs and how Canada Post assigns postal codes, there is not a complete mapping of FSA to CMA. Thus, each FSA in NB is assigned to one of five geographic areas defined as follows:

- Within Saint John CMA
- Partially within Saint John CMA
- Within Moncton CMA
- Partially within Moncton CMA
- Rest of NB

The Within Saint John CMA and Within Moncton CMA areas contain the FSAs fully within their respective CMA (e.g., E5S in Figure 1. The Partially Within Saint John CMA and Partially Within Moncton CMA areas contain the FSAs partially within their respective CMA (e.g., E5L in Figure 2). The Rest of NB area contains all other FSAs in NB.

[5] By definition, a CMA must have a total population of at least 100,000, of which at least 50,000 or more live in the core.

Figure 1: Forward Sortation Areas (green polygons) Within or Partially Within the Saint John CMA (orange polygon)

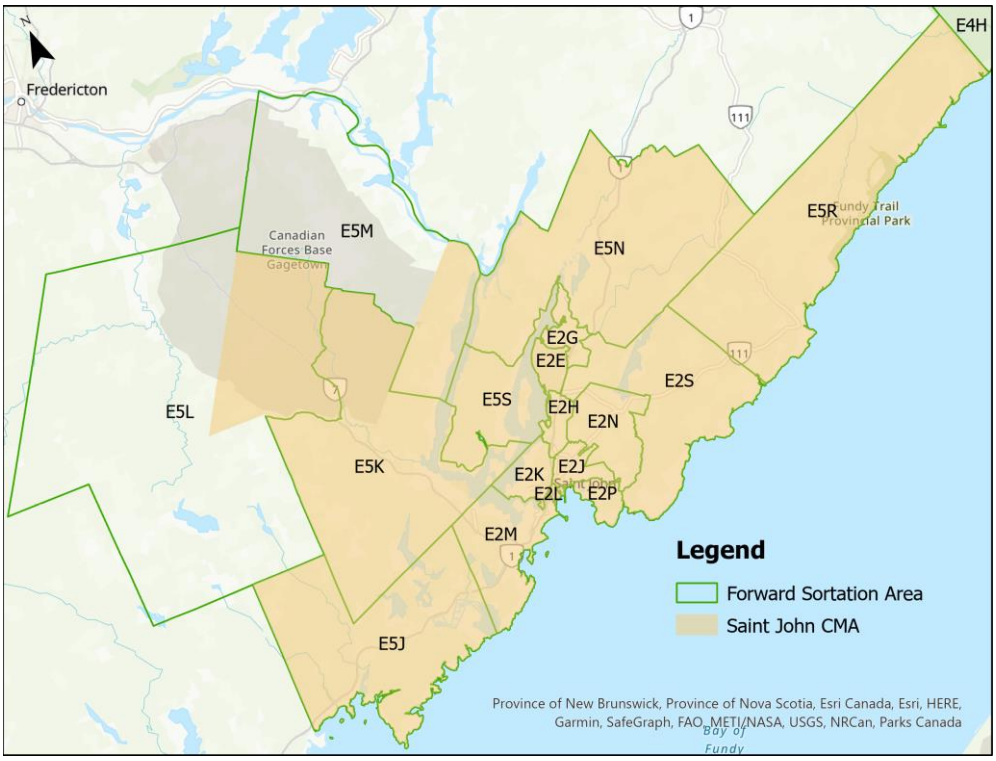
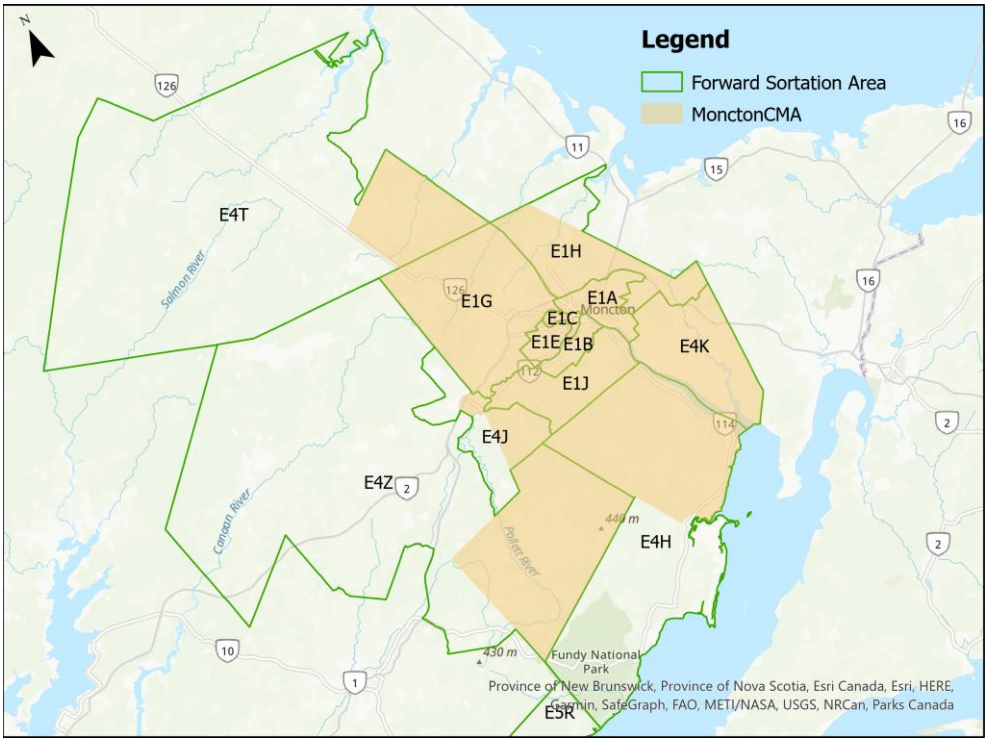


Figure 2: Forward Sortation Areas (green polygons) Within or Partially Within the Moncton CMA (orange polygon)



Scaling Factors

Francophone population counts differ between the Medicare definition and the two Census definitions of language, both for NB overall and specifically for GSJ. One way to account for these differences in population is to apply scaling factors to some of our results.

These scaling factors are calculated by using the Medicare definition of language as a baseline (denominator) and then determining how different each language proportion compares to its corresponding baseline. This means the Medicare definition of language will have a scaling factor of 1, and the Census definitions of language will have scaling factors based on the division of the proportion of the Francophone population using one Census language definition by the proportion of the Francophone population using the Medicare language definition.

We developed Francophone scaling factors for language spoken most often at home and mother tongue. These factors allow results to be scaled to approximate the Census-defined language populations to reduce the underestimation of language populations that occurs when using Medicare language preference. The results presented in this report use the Medicare preferred language of correspondence as the language definition unless otherwise specified.

Additional Characteristics of Interest

This section describes how several measures from the Medicare data were obtained, using the Medicare definitions of language and area throughout.

Demographic characteristics include age, sex, household composition, immigrant status, duration of residence, and mortality rate.

Socioeconomic measures include neighbourhood income quintiles, social assistance, and home care.

Chronic disease measures include prevalence and average years since diagnosis for several chronic diseases.

Other health care measures include hospital admissions, days in hospital per admission, and physician visits.

Demographic Characteristics

We use the Citizen Data to calculate several demographic characteristics for the adult population of NB, which are then compared to the following sub-populations:

- Francophone Saint John
- Francophone Moncton
- Anglophone Saint John

Demographic characteristics include population by area, language, age, sex, household composition, immigrant status, duration of residence, and mortality rate. These are each determined based on individuals with an active Medicare status as of July 1, 2018.

Sex is based on Medicare information and includes the variables male or female. Individuals with unknown sex are excluded to protect the confidentiality of those individuals due to small sample sizes associated with the category.

Age is calculated as of July 1, 2018, and is split into seven age groups: 18-34, 35-54, 55-64, 65-69, 70-74, 75-79, and 80+.

We specify five household composition categories: Two Adults No Children, Two Adults With Children (0-17), One Adult With Children, Single Person Household, and Other. Household composition is determined using a household contact ID variable within the Citizen Data that groups individuals who are part of the same household at a given point in time. However, the relationships between household members are not specified (e.g., mother, child, roommate, etc.), and this limits what we can determine regarding household composition. For each household, the number of adults and children is determined based on each individual's age on July 1, 2018. The households are then categorized based on the number of adults and children. Note that any households with two parents and adult children are categorized as Other.

We specify three immigrant status categories: Citizen or Long-Term Resident, Permanent Resident, and Other. These are based on the citizen status variable from the Citizen Data, which has six categories. Individuals with Unknown citizen status are either classified as Citizen or Long-Term Resident if they have at least ten years of active Medicare eligibility within the Citizen Data, or they are classified as Other if they have less than ten years of active Medicare eligibility (see Table 2).

Table 2: Immigrant Status Classifications Based on Citizen Status in the Citizen Database

Immigrant Status	Citizen Status in Citizen Data
Citizen or Long-Term Resident	Citizen
	Dual Citizen
	Status Indian
	Unknown, but with at least ten years of active Medicare eligibility
Permanent Resident	Landed Immigrant
Other	Permit
	Unknown, but with less than ten years of active Medicare eligibility

Duration of residence is determined based on whether an individual has lived at the same FSA for at least five years, based on the FSA they live at on July 1, 2018.

Mortality rate is calculated based on the number of deaths in 2018 divided by the population on July 1, 2018. Deaths are determined based on an eligibility status of Death in the Citizen Data.

Socioeconomic Measures

We use the Citizen Data, Social Assistance Data, and Long-Term Care Data at NB-IRDT to determine socioeconomic measures, which include income quintile, the number of people receiving social assistance, and the number of people in home care.

Income quintiles are estimated for individuals based on geocoding output from their postal coding. Geocoding is performed through the Statistics Canada Postal Code Conversion File (PCCF+) program (StatCan, 2017b).

Individuals are counted as receiving social assistance if they have at least one record in the Social Assistance Data for Transitional Assistance or Extended Benefits at any point over the 2015-2018 period, as well as active Medicare eligibility on July 1 of the given year (e.g., social assistance recipients in 2015 with Medicare eligibility on July 1, 2015).

Individuals are counted as receiving home care if they have an Open status in the Long-Term Care data during the 2015-2018 period as well as Active Medicare eligibility on July 1 of the given year (e.g., home care participants in 2015 with Medicare eligibility on July 1, 2015). An additional language variable is also included that specifies the language of service for individuals in home care.

Chronic Disease Measures

We use the Citizen Data alongside several CCDSS data sets and the NB Cancer Registry to construct chronic disease measures in NB from 2015-2018. The chronic diseases included in this analysis are acute myocardial infarction, asthma, chronic obstructive pulmonary disease (COPD), dementia, diabetes, epilepsy, heart failure, hypertension, ischemic heart disease, mental illness, mood and anxiety disorders, schizophrenia, stroke, and cancer. The chronic disease measures include prevalence rates and average years since diagnosis.

Broader age categories are created for chronic disease measures, as well as for other health measures, such as hospital admissions and physician visits. For these measures, six age groups are used: 18-49, 50-59, 60-64, 65-69, 70-74, and 75+. These age categories are created to focus on the older population for health measures.

For most chronic diseases, the first diagnosis date is kept for each individual. The diagnosis is assumed to remain with these individuals for the rest of their lives, so these individuals will be present in the chronic disease data each year after diagnosis. For example, an individual diagnosed with diabetes in 2013 would be present in the chronic disease data for 2015-2018 unless they died prior to 2018. An individual could have multiple chronic diseases but would have one record in the analysis per chronic disease per year. Individuals are included for each

year between 2015-2018 that they were present with the chronic disease. There are two exceptions for using first diagnosis date: mental illness and mood and anxiety disorders.

The mental illness and mood and anxiety disorders conditions are treated differently due to different case definitions (Public Health Agency of Canada, 2021). These two conditions are present in the chronic disease data only in the years when an individual would have had a hospitalization or physician visit for that condition. For example, if someone required a hospitalization in 2016 and 2018 for mood and anxiety disorders, they would show up in the chronic disease data in 2016 and 2018 but not 2017.

Prevalence rates are determined by calculating the proportion of people with a given chronic disease in a given year and sub-group (e.g., Francophone GSJ) divided by the total population for that same year and sub-group. Average years since diagnosis are calculated from the total years since diagnosis for a given chronic disease in a given year within a particular sub-group divided by the number of people with that chronic disease in that year and sub-group.

Hospital Admissions and Days in Hospital per Admission

We use the Discharge Abstract Data for 2015-2020 alongside the Citizen Data over the same period to determine number of hospital admissions and days in hospital per admission.

Hospital admissions are included our analysis if they occurred in NB for individuals aged 18 and older between January 1, 2015 to December 31, 2020. The number of hospital admissions and total days in hospital are then calculated for each individual for each year.

Physician Visits

We use the NB Physician Billing data set for 2015-2018 alongside the Citizen Data over the same period to determine number of physician visits.

The Médisanté clinic in Saint John is specified in our analysis due to its focus as a clinic that provides health care to the Francophone community in Saint John.[6] Therefore, physician visits are categorized into three groups: Médisanté, Other Known clinic establishments, and Clinics with an Unknown establishment identifier.

The number of physician visits each year is calculated based on the number of days within a given year an individual had at least one physician visit. Multiple physician visits within one day for an individual are considered one physician visit to account for cases in which someone may come back multiple times within a day to follow-up with the same physician visit (e.g., picking up prescriptions).

[6] For information on the Médisanté clinic in Saint John, see https://horizonnb.ca/facilities/medisante-saint-jean/

Results

This section begins with a presentation of results by language and area as described in the Citizen Data. It then presents recalculations for select results using scaling factors derived from Census population counts on language preference for NB and GSJ. Finally, it provides additional results using the Citizen Data definition of language. Some results also make use of scaling factors by language definition. These cases are stated explicitly.

Language and Area

This section shows results by language from the Citizen Data, as well as corresponding results using Census definitions of language. It also specifies results from the Citizen Data using both Medicare language and geographic area. Scaling factors are used to show how results by language and area differ based on Medicare versus Census definitions of language.

Language Definitions

The Citizen Data has a language of preference variable that captures whether someone prefers to receive Medicare correspondence in English or French. Based on language choice in the Citizen Data, 79.90% of New Brunswickers are considered Anglophone, while 20.10% are considered Francophone as of July 1, 2018 (see Table 3).

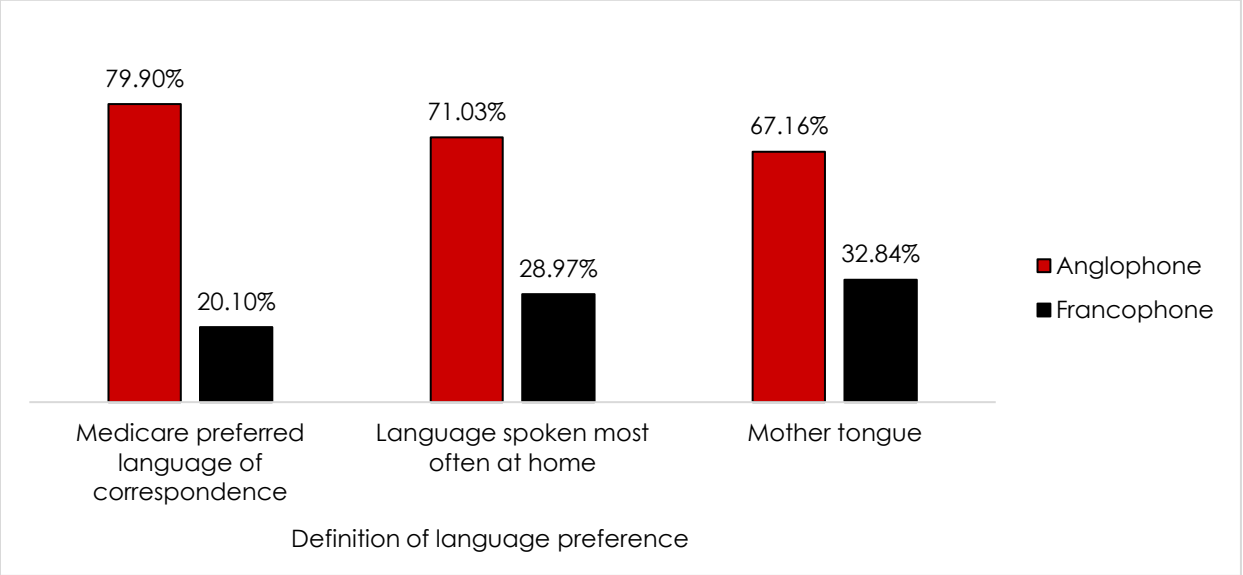
Table 3: New Brunswick Population (18+) by Medicare Language of Preference (July 1, 2018)

Language	Population	% of Population
Anglophone	509,050	79.90%
Francophone	128,040	20.10%
Total	**637,090**	**100.00%**

The preferred language of correspondence recorded in the Medicare system does not necessarily correspond to an individual's preference for health services in the language of their choice. To allow for this possibility, we compare these values with 2016 Census data, which classifies language in two ways: language spoken most often at home and mother tongue. This comparison shows that calculations of the proportion of Francophone individuals in NB vary based on the definition of language that is used (see Figure 3).

The most notable difference in the proportion of Francophones in NB occurs when using Medicare preferred language of correspondence (20.10%) or mother tongue (32.84%). This suggests Medicare preferred language underestimates the proportion of Francophones in NB relative to mother tongue, though we note that mother tongue itself does not necessarily indicate language preference.

Figure 3: Proportion of the NB Population Identified as Anglophone or Francophone Using All Three Definitions of Language Preference



Population by Area

The FSAs in NB are categorized into five geographic areas:

- Within Saint John CMA
- Partially Within Saint John CMA
- Within Moncton CMA
- Partially Within Moncton CMA
- Rest of NB

The adult populations of Saint John and Moncton are similar, with 106,145 individuals in the Saint John CMA and 109,685 individuals in the Moncton CMA (Figures 4 and 5). There are 1,065 Francophone individuals within the Saint John CMA (1% of the population) and 18,250 Francophone individuals within the Moncton CMA (16.64% of the population).

The Partially Within Saint John CMA area is particularly small, with 4,165 individuals total and only 15 Francophone individuals. The Partially Within Moncton CMA is larger but only has 20,795 individuals total and 1,415 Francophone individuals. The Rest of NB has 396,300 individuals total and 107,295 Francophone individuals (27.07% of the population).

Note that the Partially Within Saint John CMA and Partially Within Moncton CMA geographies are excluded from the remainder of this report due to their small sample sizes. The Rest of NB geography represents the area of NB fully outside Saint John and Moncton.

Figure 4: NB Population (18+) Identified as Anglophone or Francophone (by Medicare Definition) over Five Geographic Areas

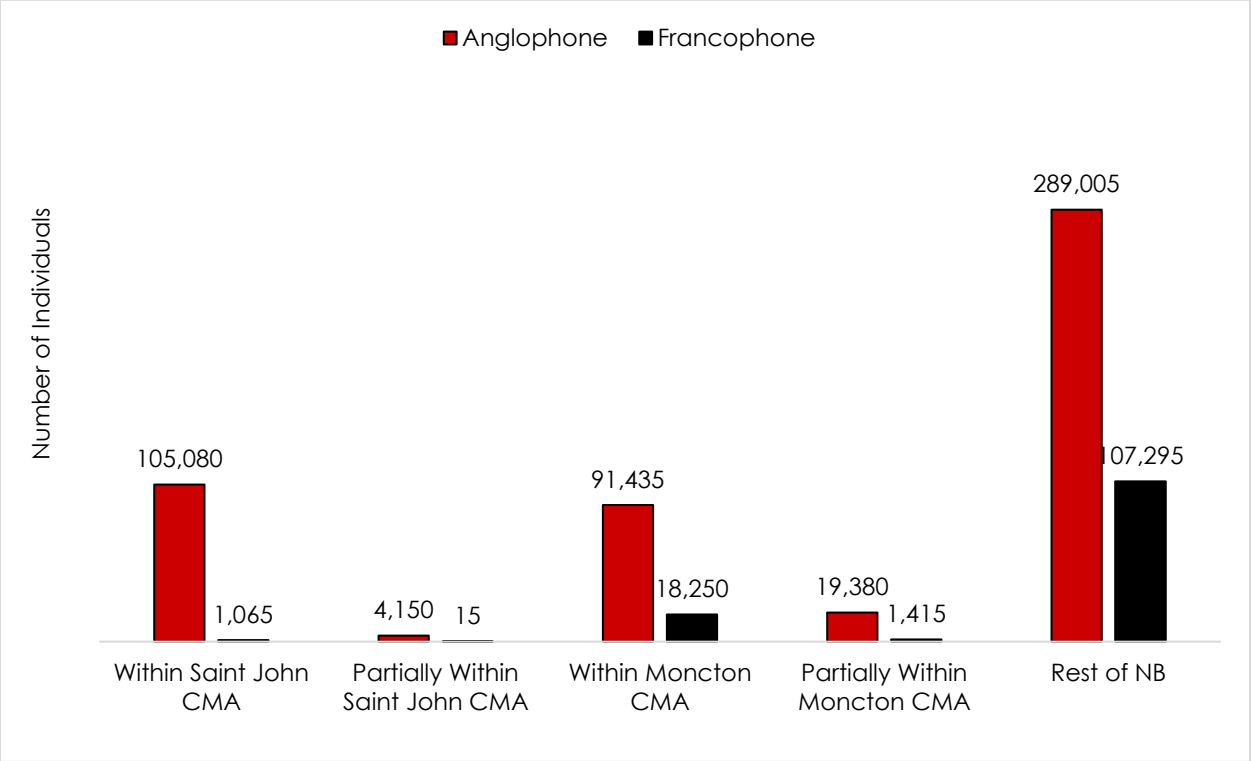
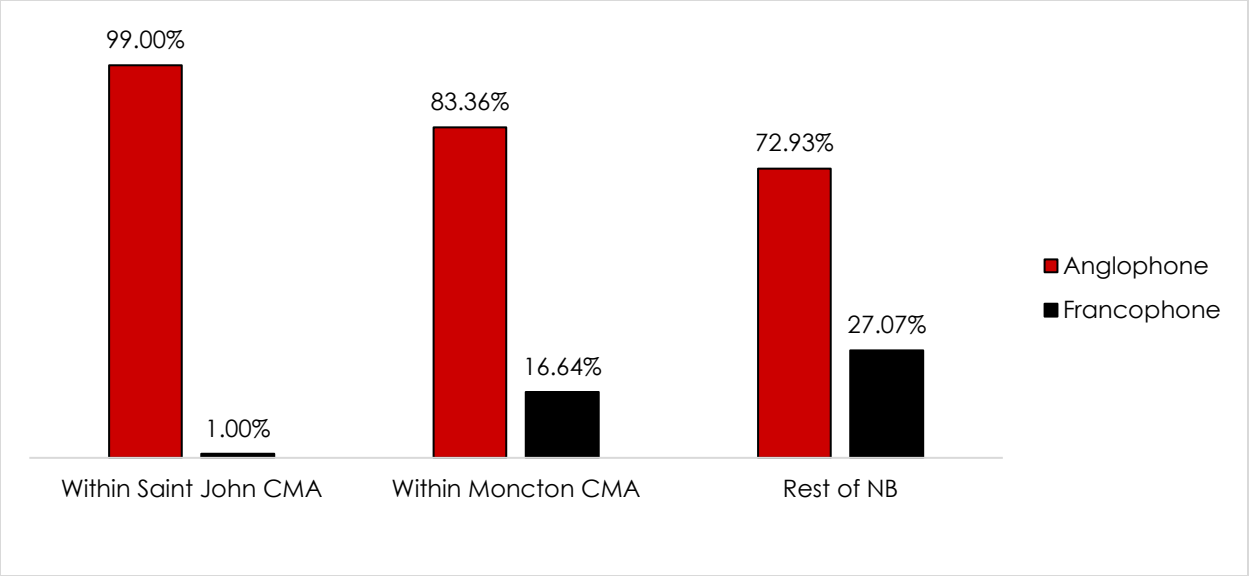


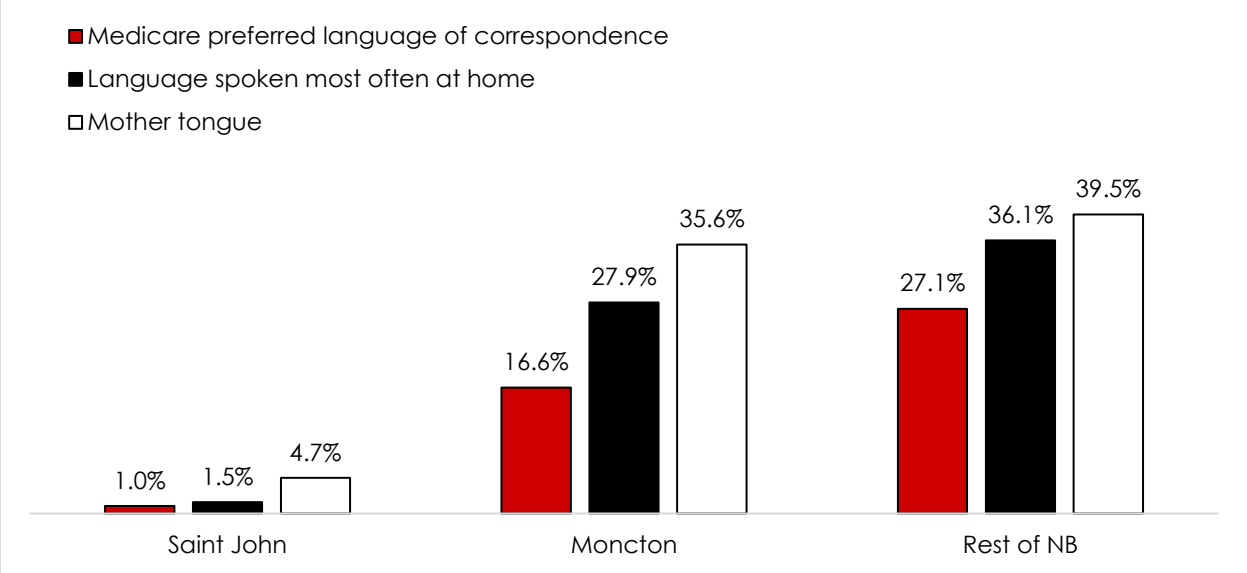
Figure 5: Proportion of NB Population (18+) Identified as Anglophone or Francophone (by Medicare Definition) Over Three Geographic Areas



The proportion of adults identified as Francophone differs between Saint John, Moncton, and the Rest of NB, depending on which definition of language preference is used (Figure 6). The largest increase is for Saint John, which goes from 1.0% using the Medicare preferred language

definition to 4.7% using the 2016 Census mother tongue definition. The proportion of Francophone adults in Moncton is larger than in Saint John, ranging from 16.6% to 35.6% depending on which definition of language is used. These proportions for Moncton are smaller than the Rest of NB, which ranges from 27.1% to 39.5% depending on the definition of language.

Figure 6: Proportion of Individuals Identified as Francophone (18+) in Saint John, Moncton, and the Rest of NB (All Three Definitions of Language Preference)



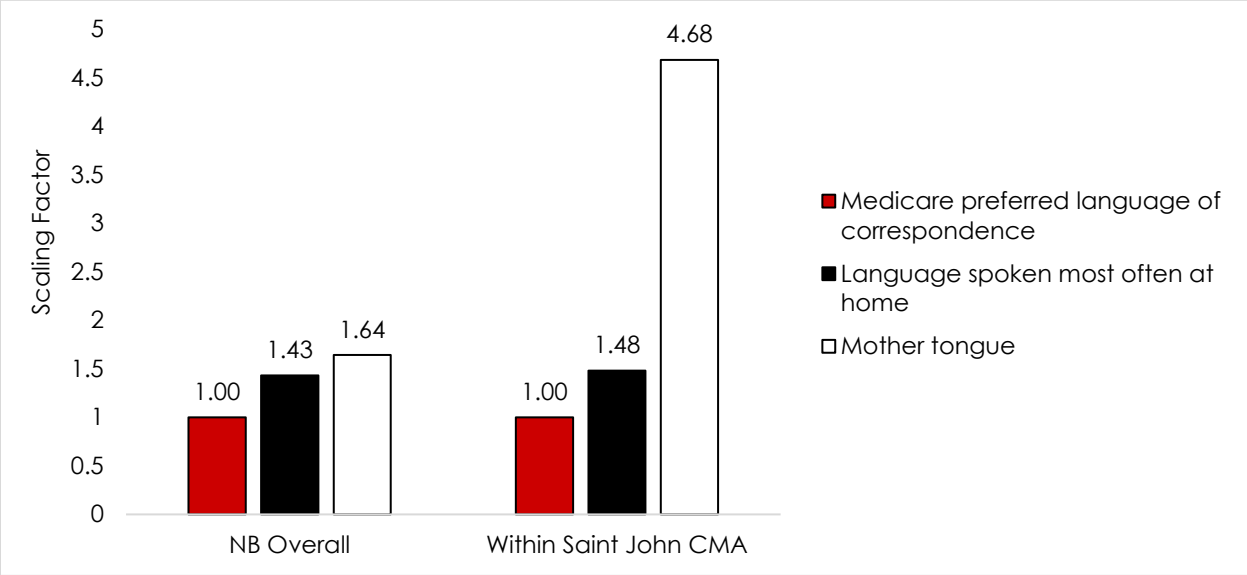
Scaling Factors

Scaling factors are calculated to account for differences in Francophone population counts in NB and specifically GSJ based on definitions of language from the Citizen Data and the Census.

Figure 7 shows the scaling factors from both NB and GSJ. The mother tongue scaling factor within Saint John CMA (4.68) is significantly higher than any of the other scaling factors, including both the language spoken most often at home scaling factor within Saint John CMA (1.48) and the mother tongue scaling factor for NB overall (1.64).

The implication is thus that there are significantly more adults in Saint John who report French as a mother tongue but have elected English as their preferred language of communication for Medicare, by close to a factor of five.

Figure 7: Scaling Factors for Francophone Population (18+) in NB and Saint John CMA (Baseline: Medicare Language Preferred)



Estimates for the Francophone GSJ population are obtained using the Francophone GSJ scaling factors presented in Table 4. Compared to the 1,065 individuals indicating French as their preferred language of Medicare correspondence, there are 4,985 individuals using the mother tongue definition of language, or 4.70% of the GSJ population.

Table 4: Estimates of the Francophone GSJ Population Using Scaling Factors (All Three Language Definitions)

Language Definition	Scaling Factor	Francophone GSJ Population	% of GSJ Population
Medicare preferred language of correspondence	1.00	1,065	1.00%
Language spoken most often at home	1.48	1,575	1.48%
Mother tongue	4.68	4,985	4.70%

Additional Characteristics of Interest

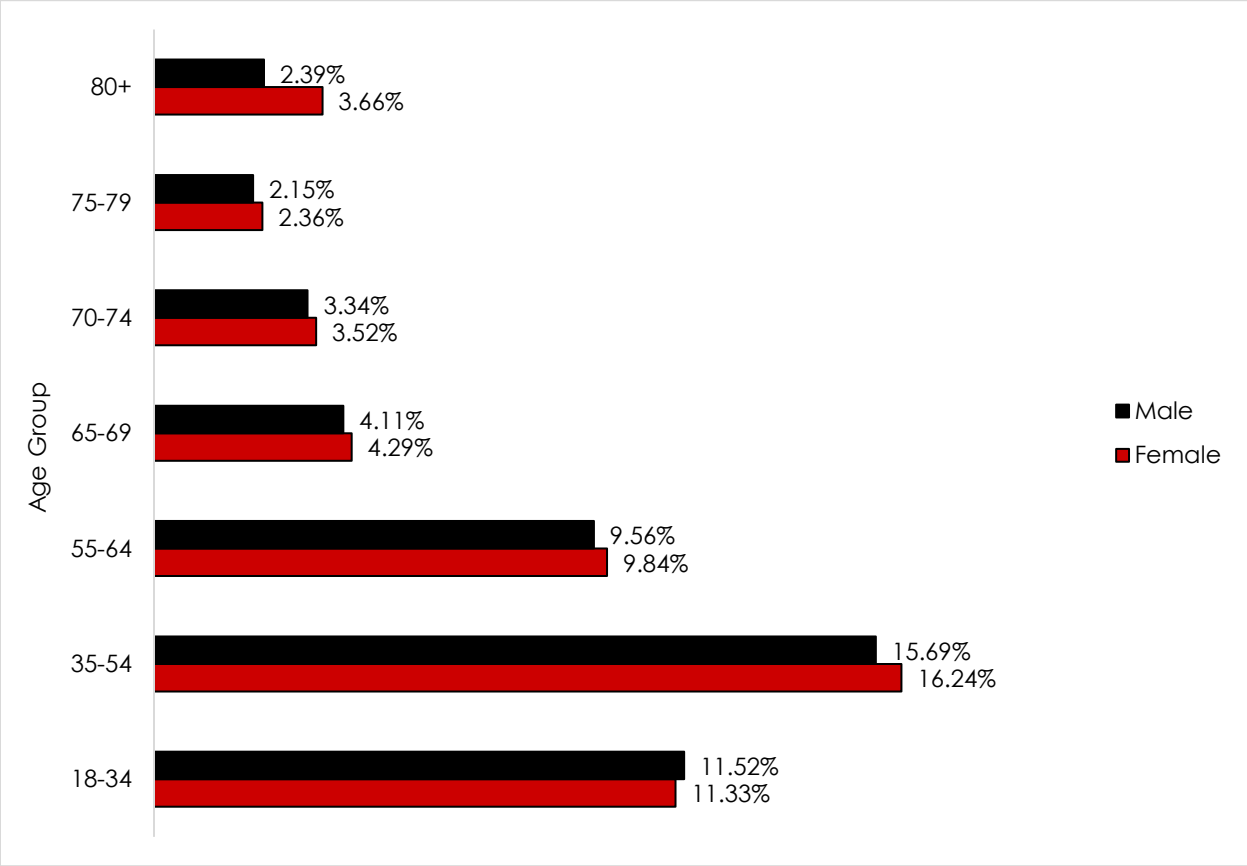
Results in this section use the Medicare definition of language preference from the Citizen Data, with selected results also reported with scaling. These results include demographic characteristics, socioeconomic measures, chronic disease measures, hospital admissions, days in hospital per admission, and physician visits. Since most of these are reported as proportions of the population of interest, scaling factors are not included for those proportions. However, where results are reported for population counts, scaled results are also provided. (Proportions are unaffected by the application of scaling factors.)

Demographic Characteristics

The demographic characteristics of the NB adult population measured include age, sex, household composition, immigrant status, duration of residence, and mortality rate.

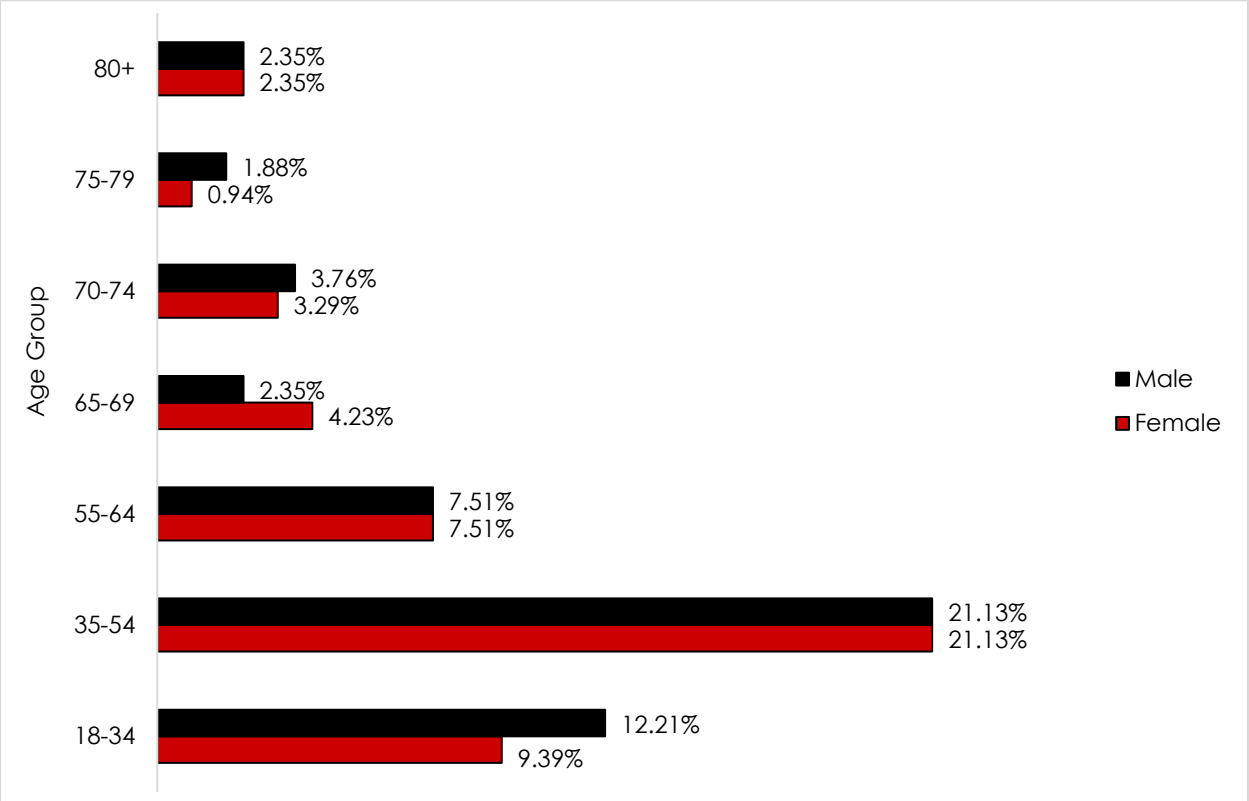
The population distribution between sexes is relatively even for most age groups, with the largest exception being the 80+ age group, with 3.66% for females and 2.39% for males, which represents 23,315 females and 15,225 males (Figure 8). The 35-54 age group has the largest share of the population with 31.93% of the population, or 203, 395 individuals.

Figure 8: Percentage of NB Population (18+) by Age Group and Sex (July 1, 2018)



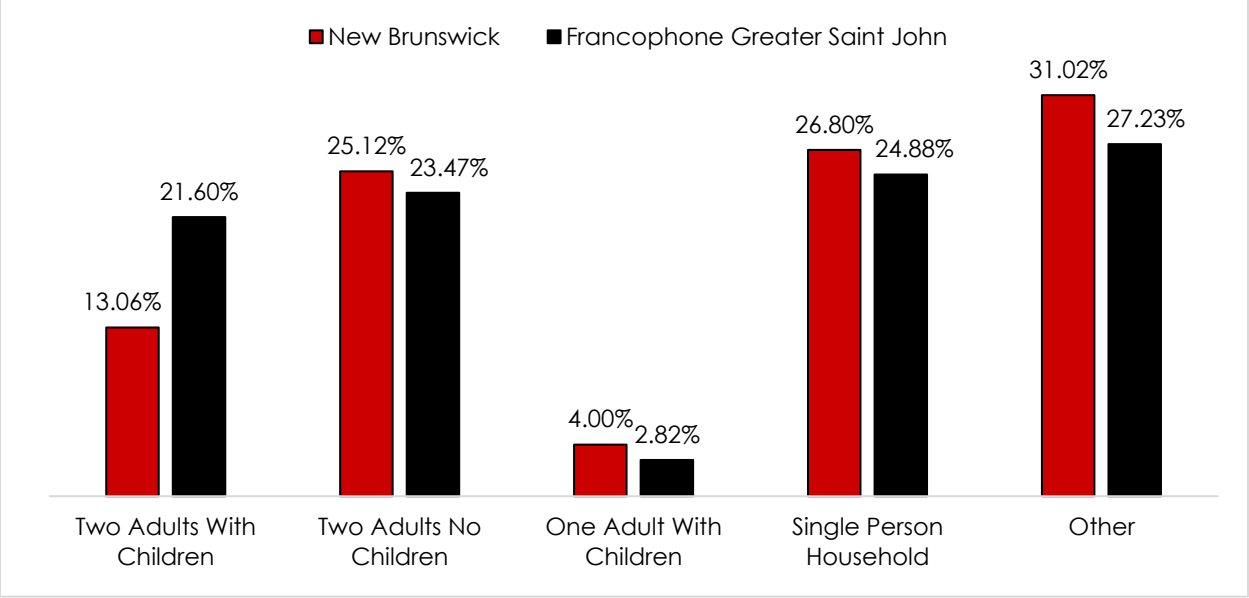
The total population for Francophone GSJ has a similar age distribution to the rest of NB. The 35-54 age group has an even larger share of the population (42.25%) than the 31.93% shown in Figure 8 for the same age group in NB. The 75-79 age group is the smallest at 2.82% (0.94% for females, 1.88% for males) (Figure 9).

Figure 9: Percentage of Francophone GSJ Population (18+) by Age Group and Sex (July 1, 2018)



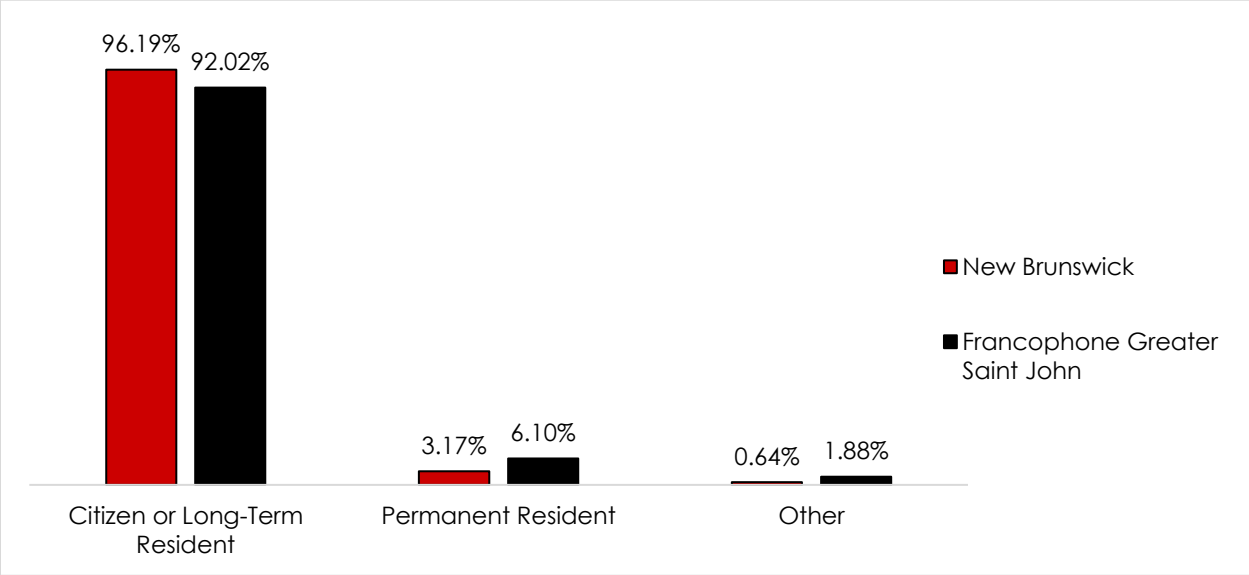
Household composition has a similar distribution between NB and Francophone GSJ (Figure 10). The biggest difference is for individuals from households with two adults with children, which contained 13.06% of NB individuals and 21.60% of Francophone GSJ individuals.

Figure 10: Proportion of NB and Francophone GSJ Populations (18+) by Household Composition



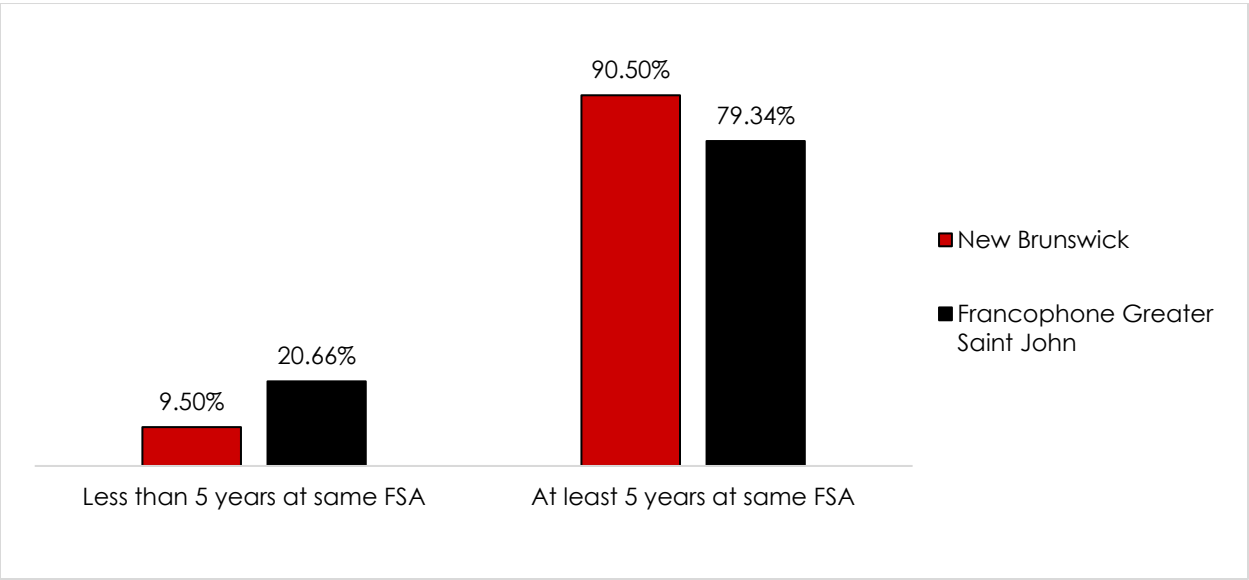
With respect to immigrant status, the proportion of individuals in Francophone GSJ who have an immigrant status of permanent resident or other (7.98%) is more than twice as high as the proportion in NB generally (3.81%) (Figure 11).

Figure 11: Proportion of NB and Francophone GSJ Populations (18+) by Immigrant Status



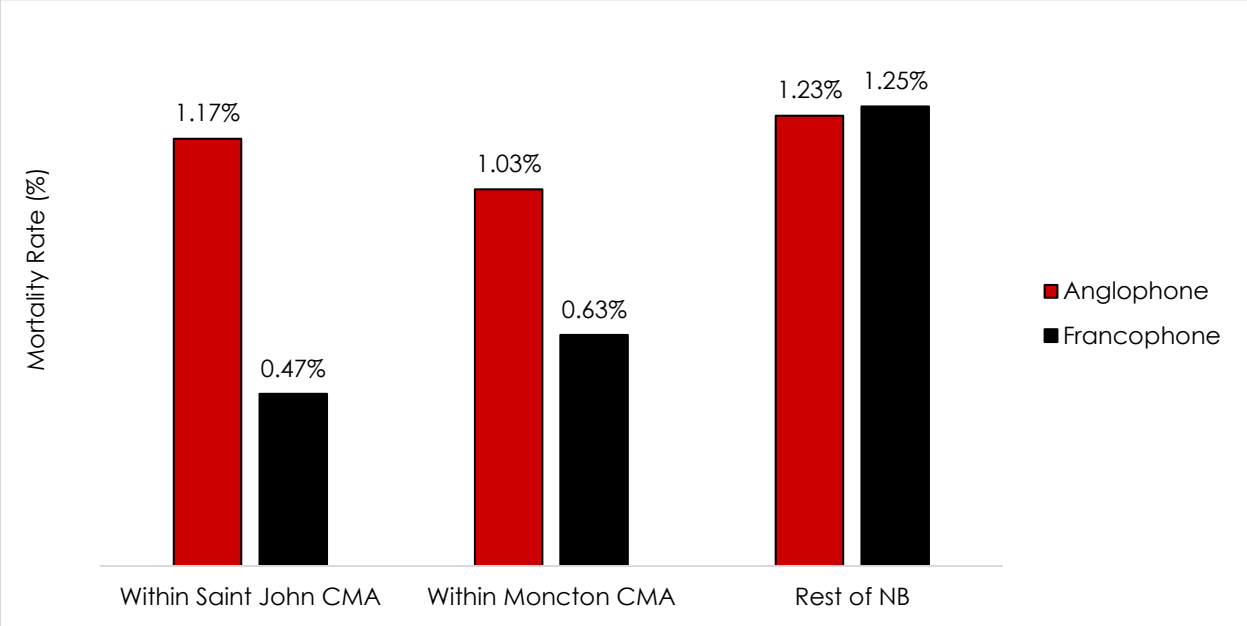
We also assessed the length of time individuals resided in the same area, using the FSA of their home address. The percentage of Francophone GSJ individuals who have lived at the same FSA for less than five years (20.66%) is more than double the percentage of NB individuals who have lived at the same FSA for less than 5 years (9.5%) (Figure 12). This suggests there have been more recent moves to GSJ from Francophone individuals.

Figure 12: Proportion of NB and Francophone GSJ Populations (18+) by Duration of Residence in a Single FSA



Mortality rates were determined for the three large geographies: Moncton CMA, Saint John CMA, and the Rest of NB (Figure 13).[7] The Francophone mortality rates within the Saint John CMA (0.47%) and within the Moncton CMA (0.63%) are both notably lower than their corresponding Anglophone mortality rates, which are 1.17% within the Saint John CMA and 1.03% within the Moncton CMA. These are all lower than the mortality rates for the Rest of NB, which are 1.23% for Anglophone and 1.25% for Francophone populations.

Figure 13: Mortality Rates for Saint John CMA, Moncton CMA, and the Rest of NB by Language



Socioeconomic Measures

Two key socioeconomic measures are captured in this report: neighbourhood income quintiles and the number of individuals receiving social assistance. We also consider the number of (mostly older) individuals receiving NB home care in this section.

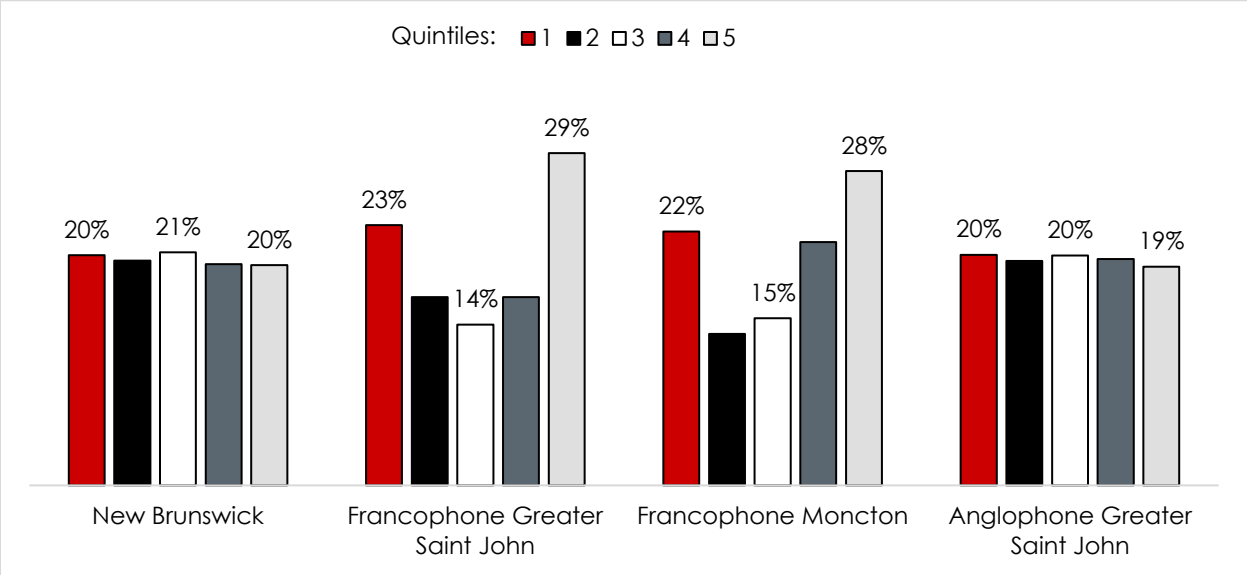
The NB population is evenly distributed at around 20% for each income quintile by construction (Figure 14).[8] The Francophone GSJ distribution, on the other hand, varies from 23.04% at income quintile 1 (lowest income) down to 14.22% at income quintile 3 (middle income) and then back up to 29.41% at income quintile 5 (highest income), suggesting a more marked degree of income inequality.

The distribution of Francophone individuals by income quintile is similar between the Moncton and Saint John CMAs. In both areas, there is a high proportion of individuals at both income

[7] Note the mortality rates here represent crude mortality rates rather than age- and sex-standardized mortality rates. Age- and sex-standardized mortality rates were also calculated but were not significantly different from the crude mortality rates and therefore were excluded from the report.
[8] Income quintiles are computed based on the NB population as of 2016. Because of demographic changes since then, the income quintiles for the NB population in this study deviate by small amounts from an even quintile distribution.

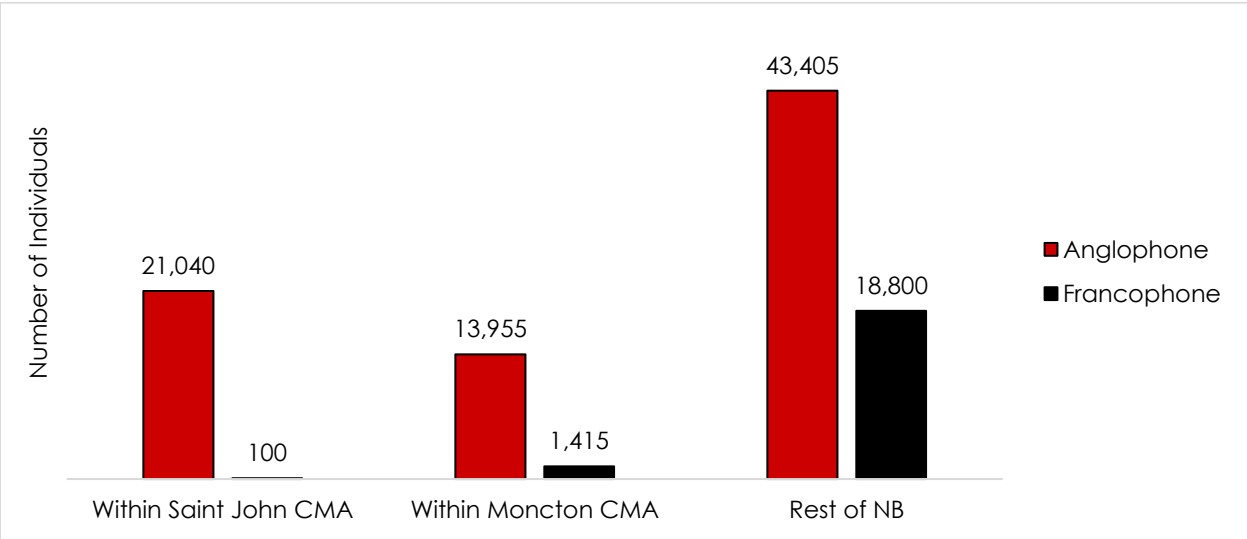
quintiles 1 and 5 compared to income quintiles 2-4. The Anglophone GSJ distribution by income quintile is similar to the NB distribution by income quintile. Income quintiles in NB are generally more representative of the Anglophone population than the Francophone population.

Figure 14: Proportion of Population (18+) in NB, Francophone GSJ, Francophone Moncton, and Anglophone GSJ by Income Quintile (1 = lowest and 5 = highest)



The distribution of social assistance recipients (Figure 15) is consistent with the population distributions seen in the three main geographies: Saint John CMA, Moncton CMA, and the Rest of NB (Figure 5). The number of social assistance recipients in Francophone GSJ is particularly small, with 100 individuals total over the 2015-2018 period. This small sample size makes it difficult to further analyze the makeup of social assistance recipients in Francophone GSJ.

Figure 15: Number of Individuals Receiving Social Assistance at Any Point in 2015-2018 for Saint John CMA, Moncton CMA, and the Rest of NB, by Language



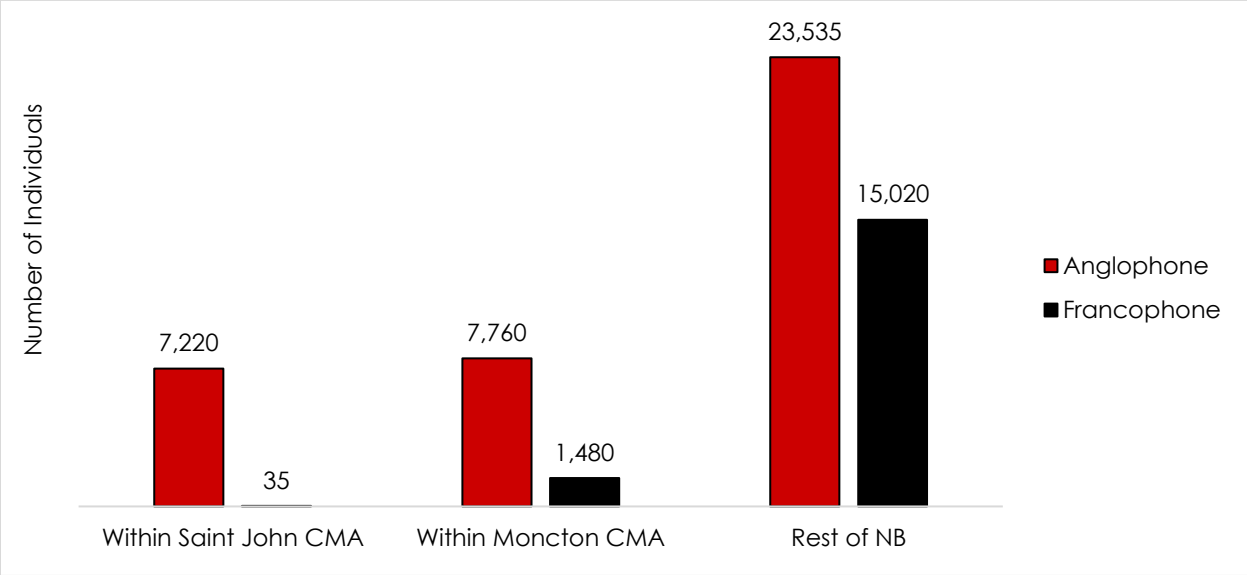
Applying Census-based scaling factors, an estimate of Francophone GSJ social assistance recipients is as high as 470 (Table 5).

Table 5: Estimates of Francophone GSJ Social Assistance Recipients Using Scaling Factors (All Three Language Definitions)

Language Definition	Scaling Factor	Francophone GSJ Social Assistance Recipients	% of GSJ Social Assistance Recipients
Medicare preferred language of correspondence	1.00	100	0.47%
Language spoken most often at home	1.48	150	0.71%
Mother tongue	4.68	470	2.22%

Similar to social assistance, the number of individuals in home care (Figure 16) is small for Francophone GSJ, with 35 individuals total over the 2015-2018 period. This small sample size makes it difficult to further analyze the makeup of home care recipients in Francophone GSJ.

Figure 16: Number of Individuals in Home Care from 2015-2018 for Saint John CMA, Moncton CMA, and the Rest of NB by Language



Estimates of Francophone GSJ individuals in home care range from 35 to 165 using the Francophone GSJ language definition scaling factors (Table 6).

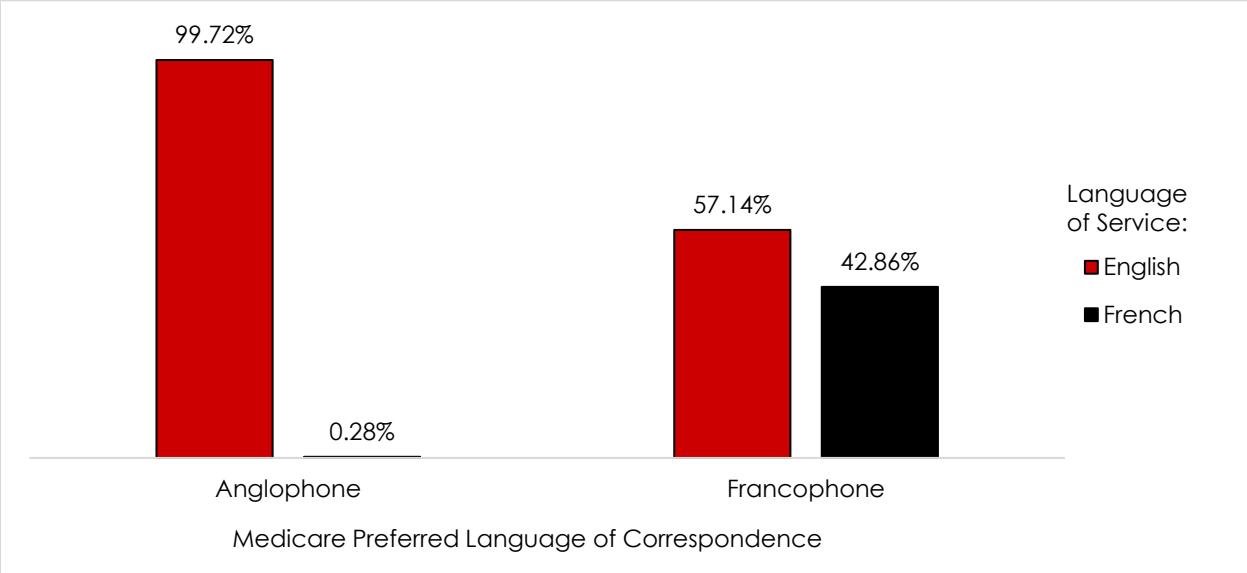
Table 6: Estimates of Francophone GSJ Individuals in Home Care Using Scaling Factors (All Three Language Definitions)

Language Definition	Scaling Factor	Francophone GSJ Home Care Participants	% of GSJ Home Care Participants
Medicare preferred language of correspondence	1.00	35	0.48%
Language spoken most often at home	1.48	50	0.69%
Mother tongue	4.68	165	2.27%

Additional information on language preference is available in the Long-Term Care Data. Individuals in home care in GSJ may have a Francophone Medicare preferred language of correspondence but receive home care service in English, or vice versa.

Figure 17 shows that only 42.86% of the GSJ individuals in home care with a Francophone Medicare preferred language of correspondence also received home care service in French. This differs from English, where nearly all GSJ individuals in home care with Anglophone Medicare preferred language of correspondence also receive home care service in English.

Figure 17: Proportion of GSJ Individuals in Home Care from 2015-2018 With Language of Service (by Medicare Language Preference)

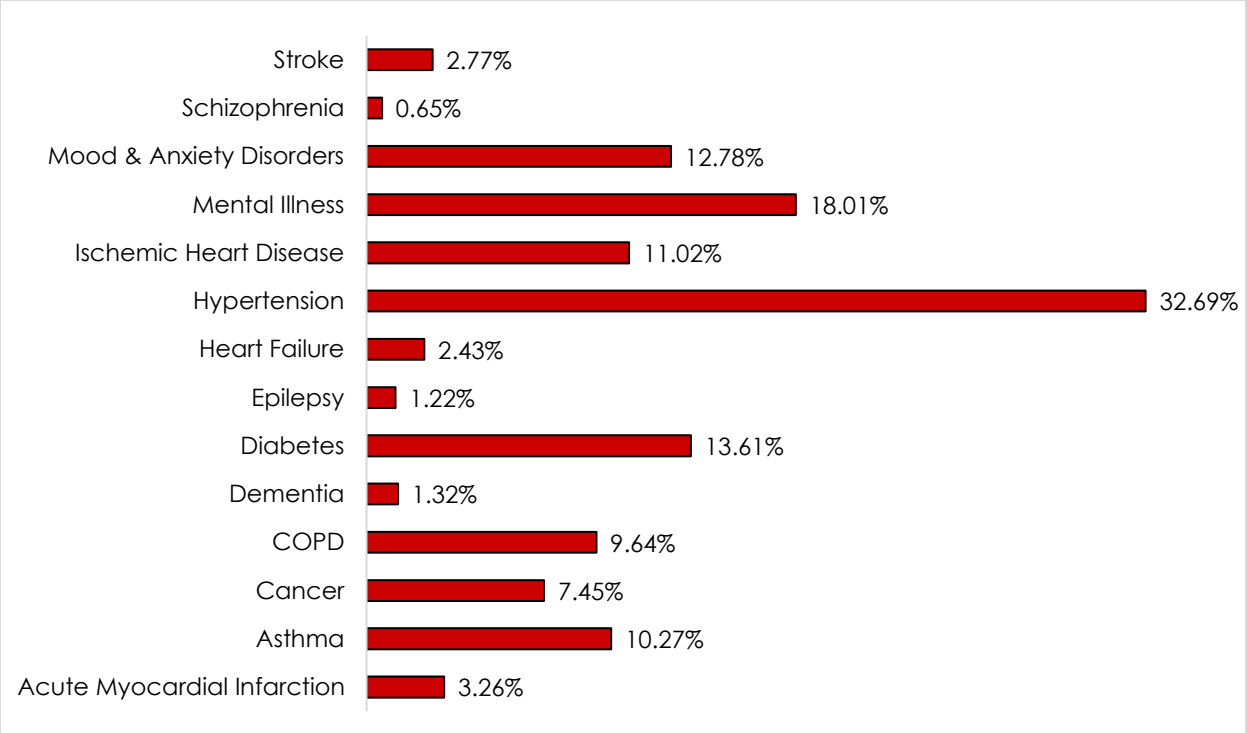


Chronic Disease Measures

The primary chronic disease measures examined in this report are prevalence rates and average years since diagnosis. The years 2015-2018 are included in the analysis, but 2018 is the focus of this section. The results in this section represent unadjusted rates, but age- and sex-standardized rates are also calculated and presented in the Appendix.

The chronic disease with highest prevalence rate in New Brunswick is hypertension, at 32.69%, and the chronic disease with the lowest prevalence rate is schizophrenia, at 0.65% (Figure 18).[9] Several other chronic diseases have a prevalence rate closer to 10%, including asthma, COPD, diabetes, and mood and anxiety disorders.

Figure 18: Prevalence Rates of Chronic Diseases in NB (2018)

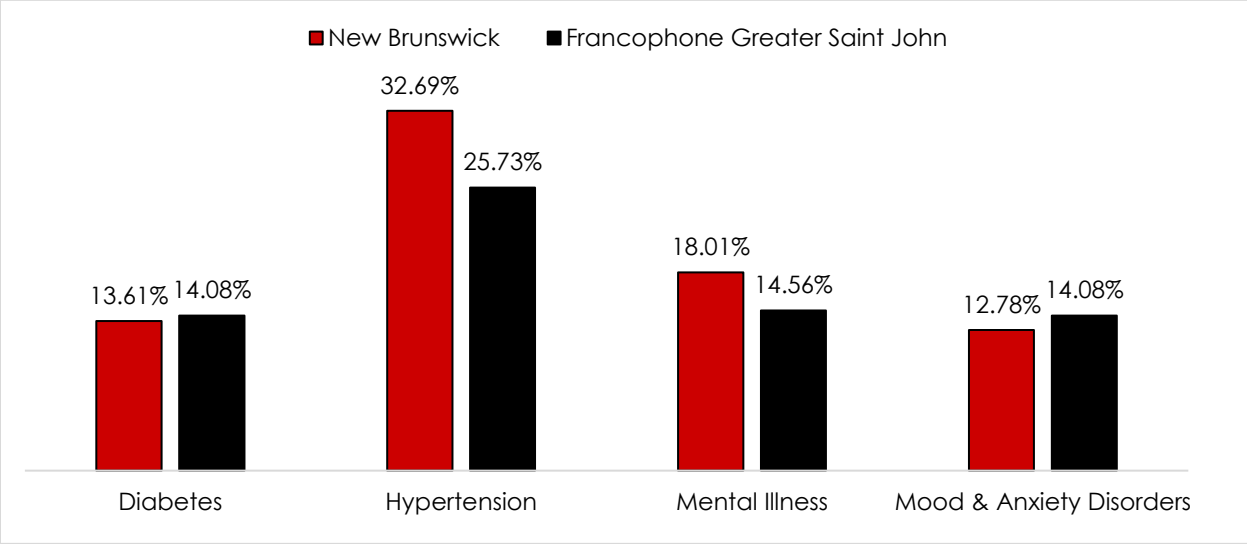


There are similar prevalence rates overall between NB and Francophone GSJ for the four chronic diseases with highest NB prevalence rates: diabetes, hypertension, mental illness, and mood and anxiety disorders (Figure 19).

The largest difference occurs for hypertension, with a 32.69% prevalence rate in NB and a 25.73% prevalence rate in Francophone GSJ. The difference in rates could be due to variation between areas or variations between Anglophone and Francophone populations in NB. Note the age- and sex-standardized rates in the Appendix show a smaller difference in hypertension rates.

[9] Note the prevalence rates here represent unadjusted prevalence rates rather than age- and sex-standardized prevalence rates. Age-sex standardized prevalence rates were also calculated but were not significantly different from the unadjusted prevalence rates and therefore were excluded from the report.

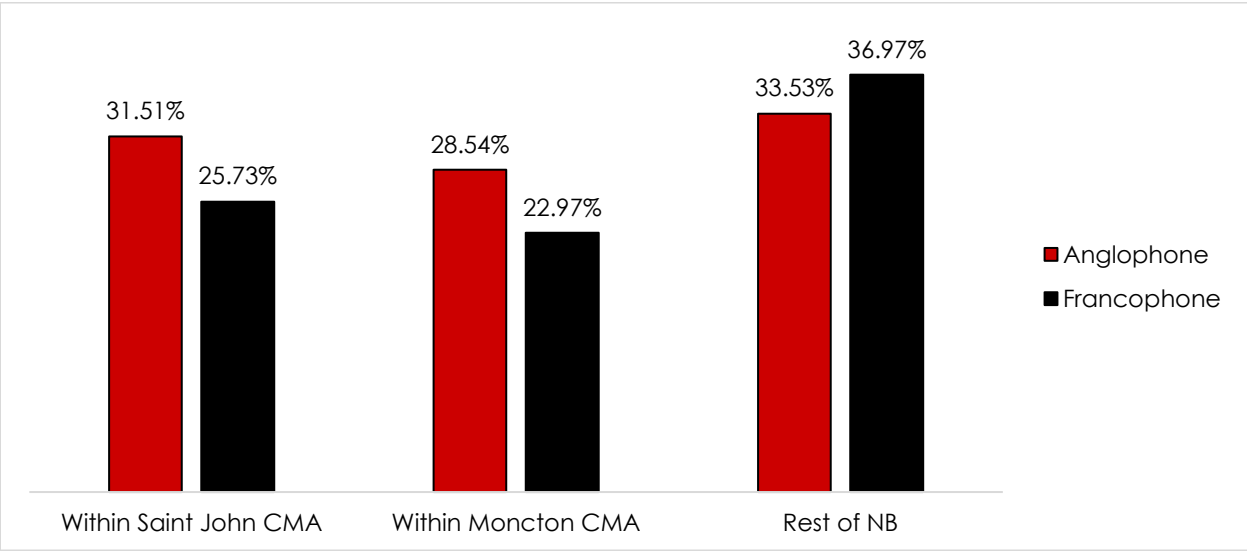
Figure 19: Prevalence Rates of the Four Most Prevalent Chronic Diseases in NB and Francophone GSJ (2018)



There are lower hypertension prevalence rates for both the Saint John and Moncton CMAs compared with the Rest of NB (Figure 20). The lowest hypertension prevalence rate is 22.97% in Francophone individuals within the Moncton CMA, and the highest hypertension prevalence rate is 36.97% in Francophone individuals for the Rest of NB.

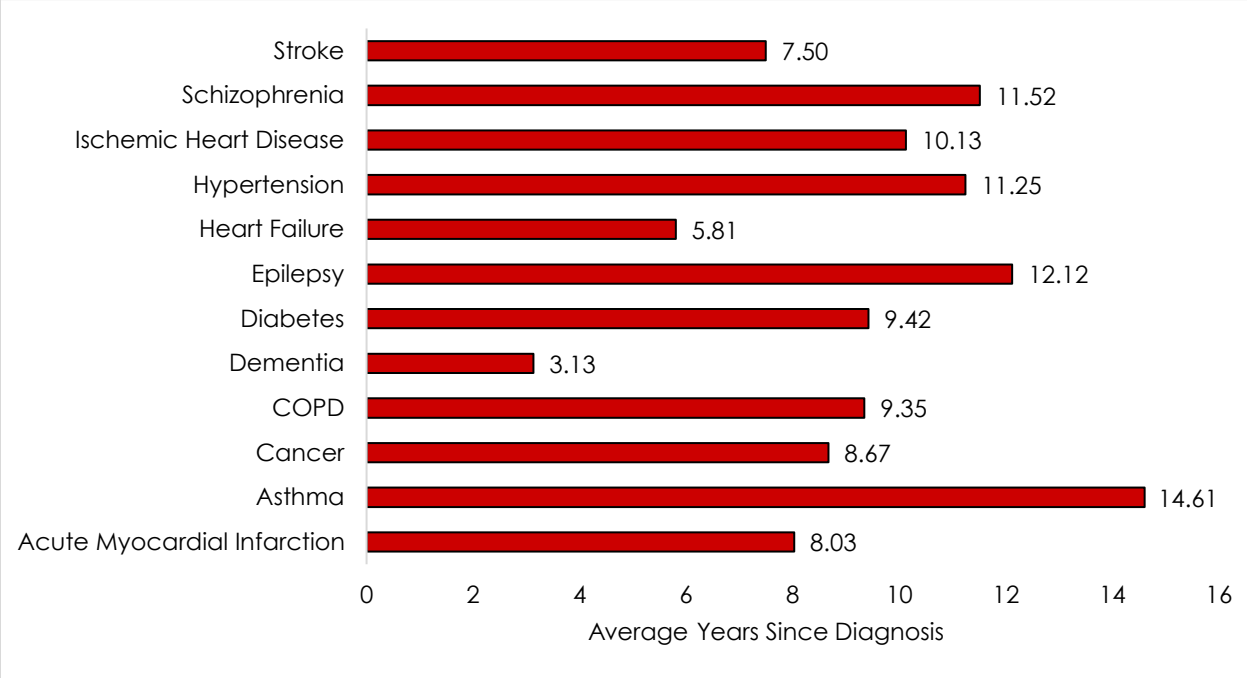
Anglophones in the Saint John and Moncton CMAs have higher hypertension prevalence rates than Francophones in these areas, whereas this trend is reversed for the Rest of NB. Note several of these rate differences are less notable for the corresponding age- and sex-standardized rates in the Appendix.

Figure 20: Prevalence Rates of Hypertension for Saint John CMA, Moncton CMA, and the Rest of NB by Language (2018)



Average years since diagnosis is determined for all chronic disease, excluding mental illnesses and mood and anxiety disorders. Asthma has the highest average years since diagnosis, with 14.61 years, and dementia has the lowest average years since diagnosis, with 3.13 years (Figure 21). The age- and sex-standardized average years since diagnosis in the Appendix notes an even smaller number of average years since diagnosis for dementia.

Figure 21: Average Years Since Diagnosis of Chronic Diseases for the NB Population (excludes Mental Illness and Mood and Anxiety Disorders) (2018)



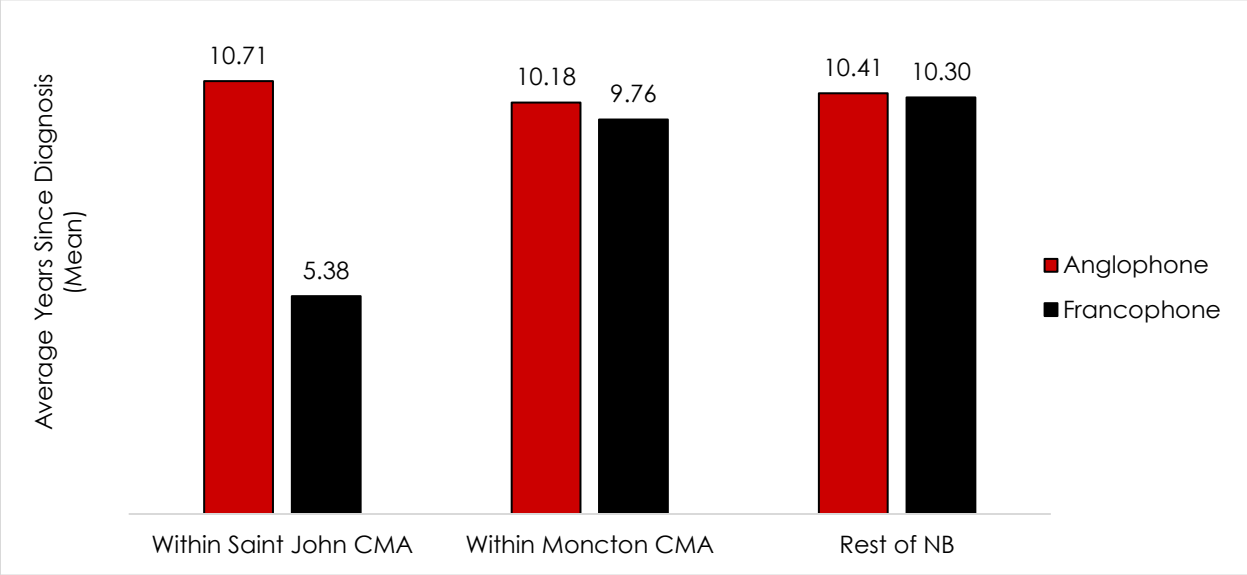
There is a significantly lower average number of years since diagnosis of chronic diseases for Francophone GSJ, at 5.38 years, compared to every other area and language examined, which are each around ten years since diagnosis (Figure 22).[10]

One factor behind this difference could be the younger age of Francophone GSJ individuals on average, with only 21.13% of that population being 65 years and older (Figure 9) compared to 25.82% of the NB population (Figure 8).

Another factor could be the shorter duration of residence at an FSA for Francophone GSJ individuals compared to the NB population overall (Figure 12). This could potentially indicate that individuals in Francophone GSJ have spent less time in NB on average. The difference could also simply be variation due to the small number of total individuals in Francophone GSJ with chronic diseases.

[10] Note the age- and sex-standardized average years since diagnosis were also calculated but were not significantly different from the unadjusted average years represented here and therefore were excluded from the report.

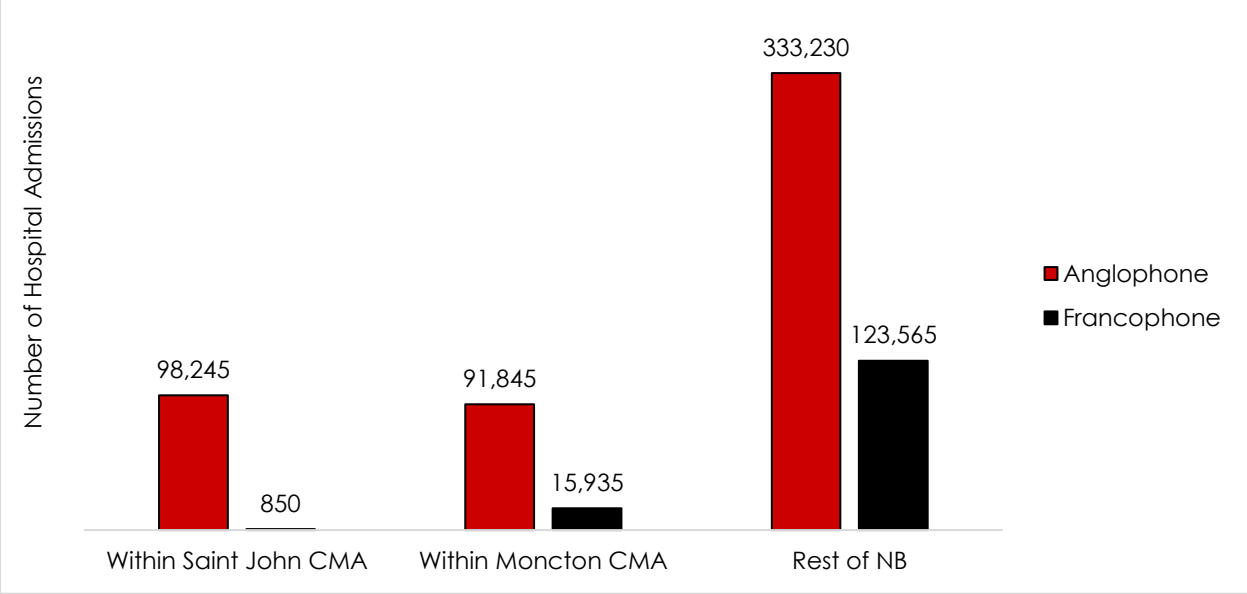
Figure 22: Average Years Since Diagnosis of Chronic Diseases for Saint John CMA, Moncton CMA, and the Rest of NB by Language (Excludes Mental Illness and Mood and Anxiety Disorders) (2018)



Hospital Admissions and Days in Hospital per Admission

The distribution of hospital admissions in the three main geographies (Saint John CMA, Moncton CMA, and the Rest of NB) (Figure 23) are similar to the overall population distributions for both Francophones and Anglophones (Figure 5). Francophone GSJ has a cumulative total of 850 hospital admissions over the period 2015-2020.

Figure 23: Total Hospital Admissions by Language for Saint John CMA, Moncton CMA, and the Rest of NB (2015-2020)



However, if Census-based scaling factors are used, estimates of Francophone GSJ hospital admissions are as high as 3,980 when we look at the mother tongue language definition (Table 7).

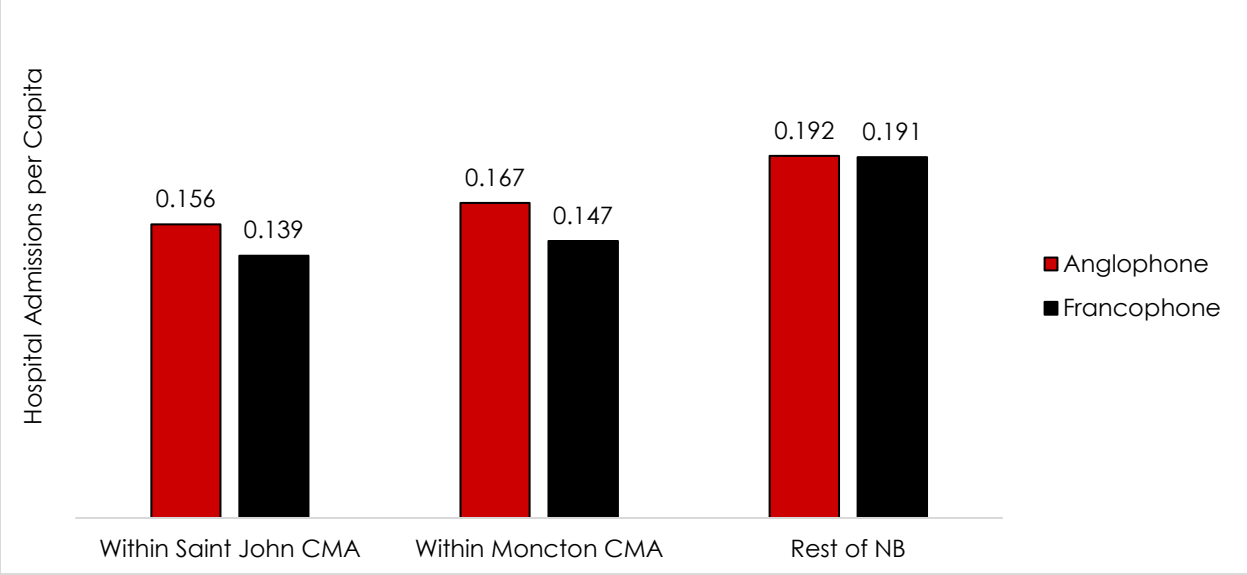
Table 7: Estimates of Francophone GSJ Hospital Admissions Using Scaling Factors (All Three Language Definitions)

Language Definition	Scaling Factor	Francophone GSJ Hospital Admissions	% of GSJ Hospital Admissions
Medicare preferred language of correspondence	1.00	850	0.86%
Language spoken most often at home	1.48	1,260	1.27%
Mother tongue	4.68	3,980	4.01%

Francophone GSJ has the lowest rate of hospital admissions, with 0.139 hospital admissions per capita (Figure 24).[11] The Rest of NB has the highest rate of hospital admissions per capita, with 0.192 and 0.191 for Anglophones and Francophones respectively.

The Francophone rates in each area are slightly lower than those of their Anglophone counterparts. The Saint John and Moncton CMAs have similar rates to each other but smaller rates than the Rest of NB.

Figure 24: Hospital Admissions per Capita by Language for Saint John CMA, Moncton CMA, and the Rest of NB (2015-2020)

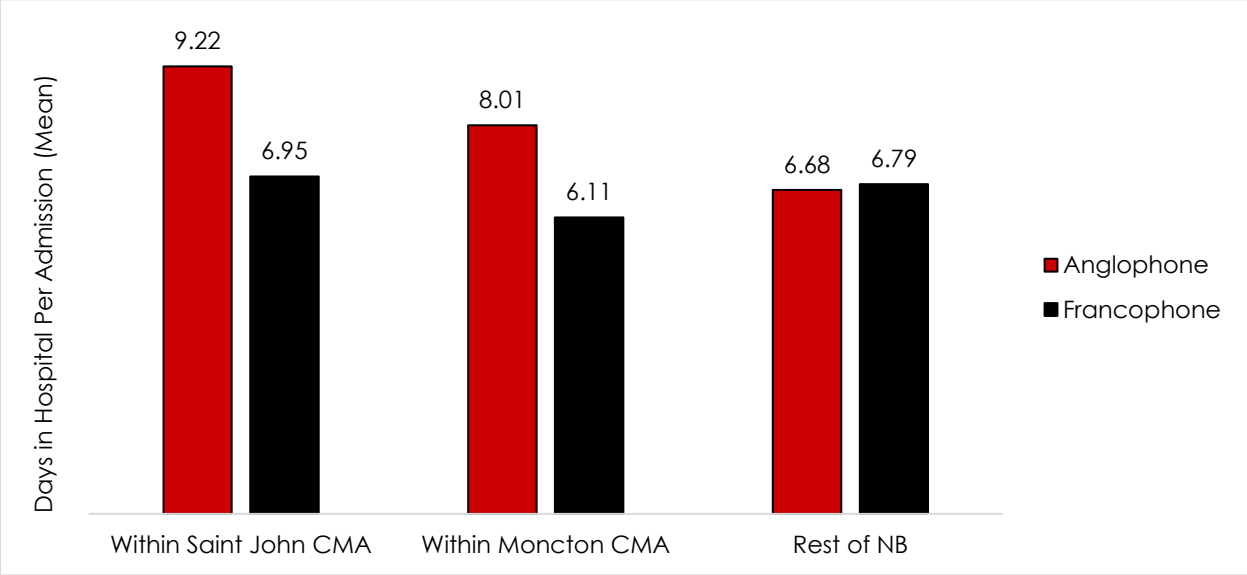


[11] Note the age- and sex-standardized admissions per capita were also calculated but were not significantly different from the unadjusted admissions per capita represented here and therefore were excluded from the report.

The highest average number of days in hospital per admission is within the Saint John CMA, with 9.22 days per admission for the Anglophone population and 6.95 days per admission for the Francophone population (Figure 25).

The Saint John and Moncton CMAs each show higher average days per admission for the Anglophone population than the Francophone population, while the Rest of NB has a relatively similar number of average days per admission between its Anglophone and Francophone populations.

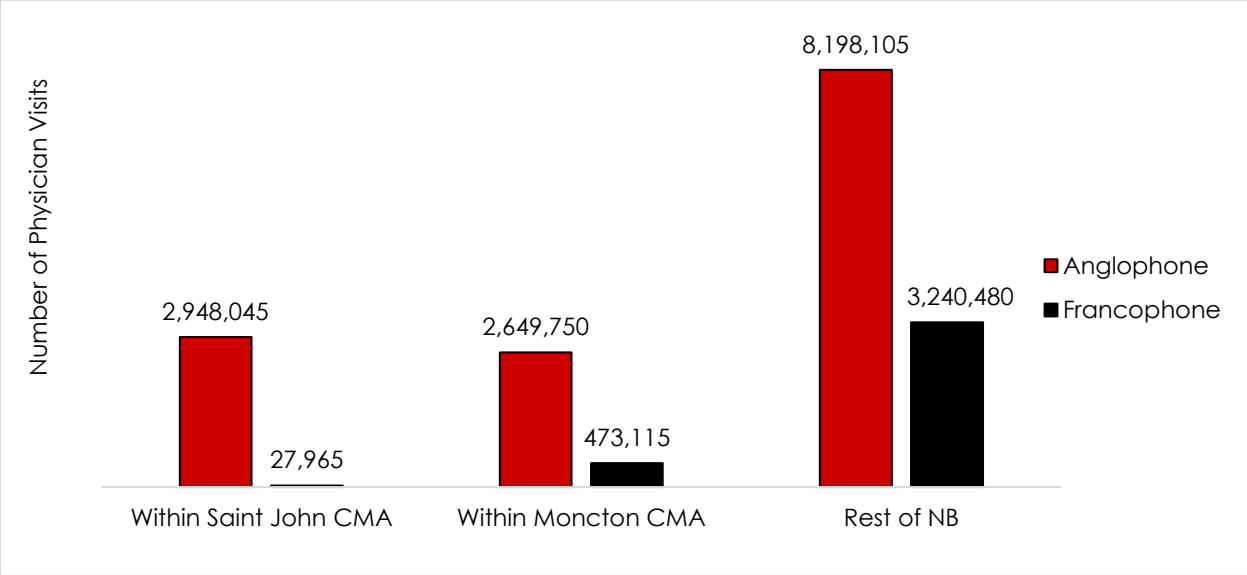
Figure 25: Average Days in Hospital per Admission by Language for Saint John CMA, Moncton CMA, and the Rest of NB (2015-2020)



Physician Visits

The number of physician visits in GSJ from 2015-2018 are largely made by Anglophone individuals, with just 27,965 physician visits, or 0.94% of total GSJ physician visits, coming from Francophone individuals (Figure 26). In contrast, the proportion of Francophone physician visits within the Moncton CMA is higher, at 15.15%, and the proportion of Francophone physician visits for the Rest of NB is even higher, at 28.33%. These statistics are each based on the Medicare definition of language preference.

Figure 26: Total Physician Visits by Language for Saint John CMA, Moncton CMA, and the Rest of NB (2015-2018)



Using Census-based scaling factors, estimates for the number of physician visits from 2015-2018 for Francophone GSJ are as high as 130,875 for Francophones with a French mother tongue (Table 8).

Table 8: Estimates of Francophone GSJ Physician Visits Using Scaling Factors (All Three Language Definitions

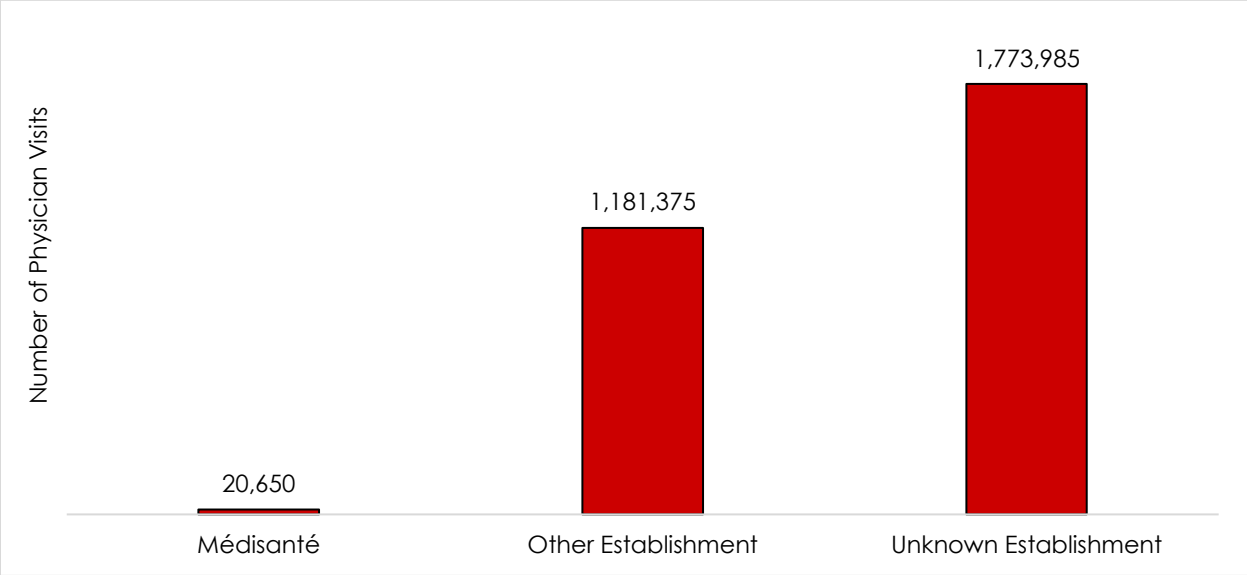
Language Definition	Scaling Factor	Francophone GSJ Physician Visits	% of GSJ Physician Visits
Medicare preferred language of correspondence	1.00	27,965	0.94%
Language spoken most often at home	1.48	41,390	1.39%
Mother tongue	4.68	130,875	4.40%

The next part of our analysis of physician visits focuses on the Médisanté clinic in Saint John due to its status as a clinic serving the Francophone community in a predominantly Anglophone area of NB.

Two other establishment groups where physician visits are received are also defined: one for known other establishments and another for unknown establishments where the location of the physician visit is not stated.

The Médisanté clinic received 20,650 total physician visits in GSJ from 2015-2018 (Figure 27), which represents 0.69% of the total physician visits in GSJ.

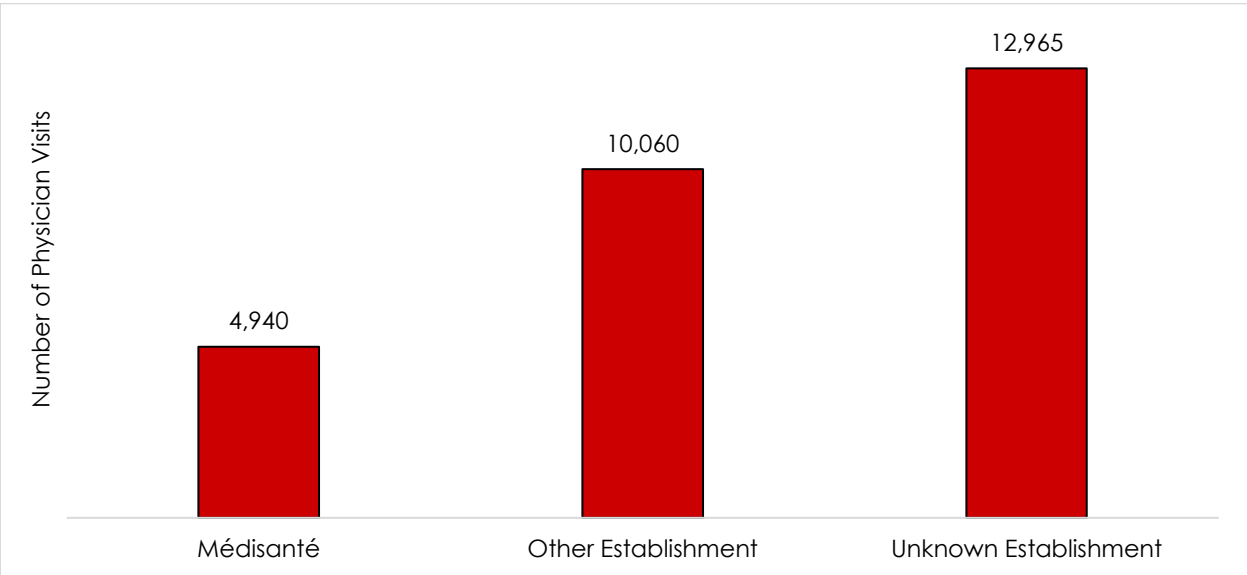
Figure 27: Total Physician Visits in GSJ to the Médisanté Clinic, Other Medical Establishments, or Unknown Establishments (2015-2018)



The 4,940 Médisanté clinic visits from 2015-2018 account for 17.66% of all physician visits from Francophones in GSJ during that period (Figure 28).

These Médisanté physician visits for Francophones also constitute 23.92% of the 20,650 Médisanté physician visits for all of GSJ, indicating that around 75% of visits to that clinic are from individuals who indicated English as their preferred language of communication in Medicare.

Figure 28: Total Physician Visits in Francophone GSJ to the Médisanté Clinic, Other Medical Establishments, or Unknown Establishments (2015-2018)



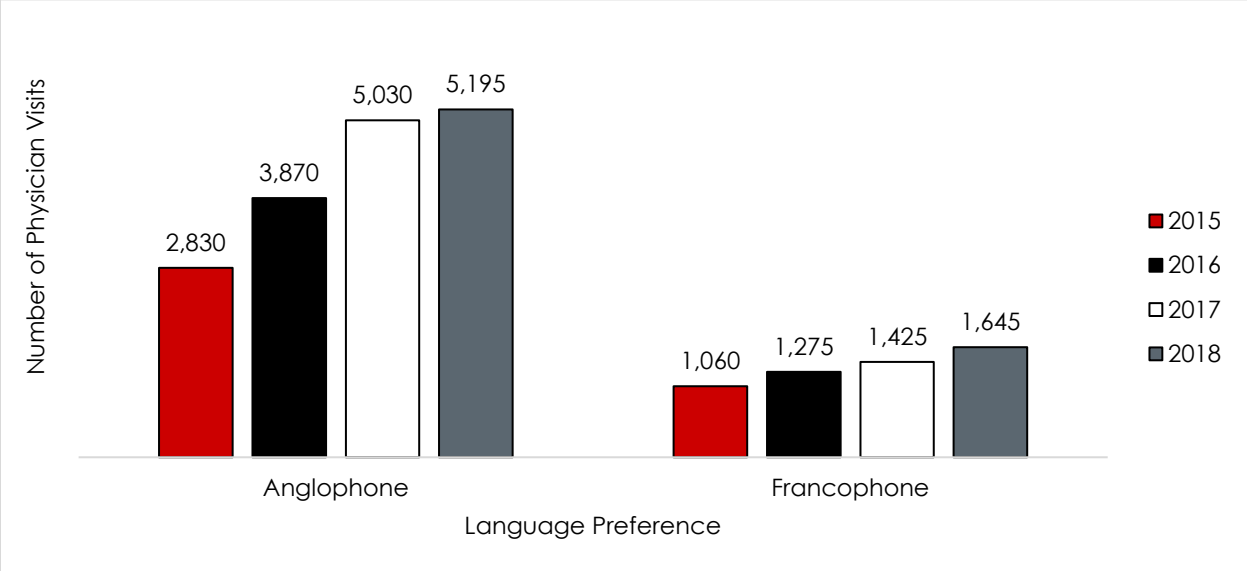
If the number of GSJ Médisanté visits from Francophones in GSJ is scaled according to mother tongue, there would be an estimated 20,650 visits over the period by Francophone individuals, equivalent to 100% of total GSJ Médisanté visits (Table 9). The implication is that if all physician visits by individuals with a French mother tongue were to go to Médisanté, the number of visits would roughly equal the total number of visits to the clinic by all individuals over the period.

Table 9: Estimates of Francophone GSJ Médisanté Visits Using Scaling Factors (All Three Language Definitions

Language Definition	Scaling Factor	Francophone GSJ Médisanté Visits	% of GSJ Médisanté Visits
Medicare preferred language of correspondence	1.00	4,940	23.92%
Language spoken most often at home	1.48	7,310	35.40%
Mother tongue	4.68	20,650	100.00%

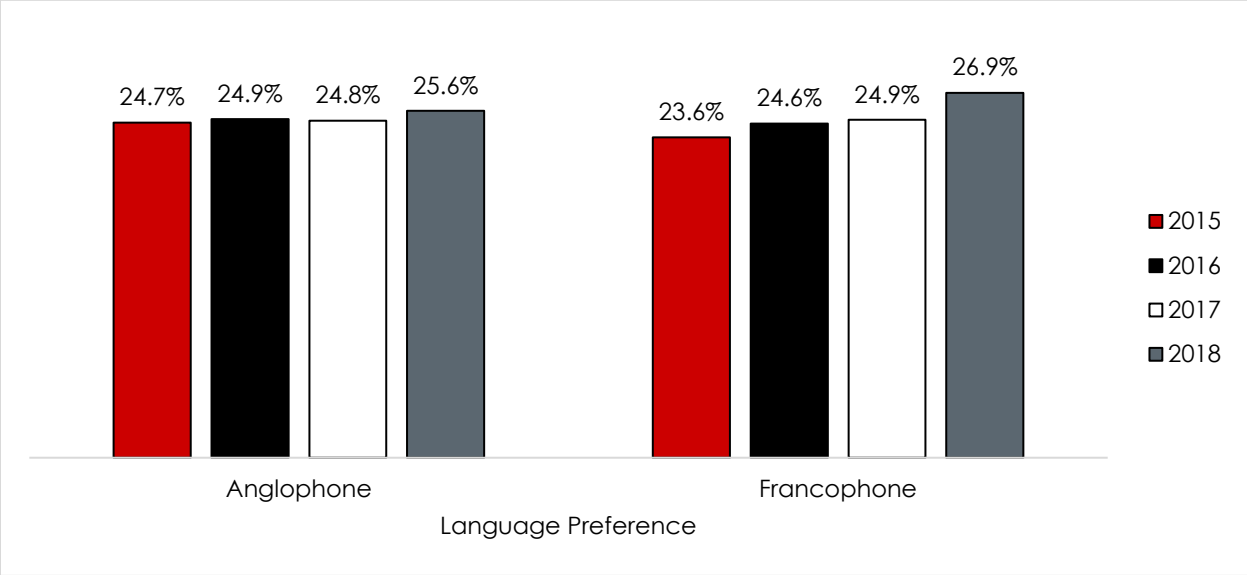
There is a growing number of Médisanté visits each year but especially for the Anglophone population (Figure 29). Anglophone Médisanté visits increased by 83.57% (from 2,830 to 5,195), and Francophone Médisanté visits increased by 55.19% (from 1,060 to 1,645).

Figure 29: Total Médisanté Physician Visits by Language (2015-2018)



There is a gradual increasing trend of physician visits by year in GSJ for both the Anglophone and Francophone populations from 2015-2018 (Figure 30). However, the Francophone physician visits from GSJ rise by 3.3% from 2015 to 2018, whereas the Anglophone physician visits from GSJ only rise by 0.9% over that same period.

Figure 30: Percentage of Total Anglophone and Francophone Physician Visits in GSJ by Year (2015-2018)



Conclusion

This report uses data extracted from the Medicare system (Citizen Data) to examine the characteristics and health service use of the Francophone population in Greater Saint John (GSJ).

The proportion of individuals identifying as Francophone in NB based on language preference in the Medicare system is smaller than the proportion based on Census definitions of language, such as language spoken most often at home or mother tongue. This discrepancy suggests that preferred language of correspondence in Medicare underestimates the proportion of Francophone individuals in the province.

This discrepancy is particularly pronounced for the GSJ region, where estimates using the mother tongue definition of language show a Francophone population proportion that is 4.68 times larger than the proportion using the Medicare definition for preferred language of correspondence. The size of this discrepancy indicates an important limitation to account for when using Medicare data to represent the Francophone population in NB, and particularly in GSJ.

Using language and area defined in the data drawn from Medicare, several demographic, socioeconomic, and health measures are examined. Some trends emerge to describe the Francophone population in GSJ.

Compared to the NB population overall, the Francophone GSJ population has

- A higher proportion of households with two adults with children
- A more mobile population
- A higher proportion of both low income and high income
- A lower number of average years since diagnosis of chronic conditions
- Lower mortality rates
- A lower proportion of social assistance recipients.

Our evaluation of physician visits to the Médisanté clinic in Saint John shows an overall increasing number of visits to the clinic, with a larger increase of visits observed for Anglophones than for Francophones. However, the proportion of Médisanté visits from Francophone individuals varies widely depending on the definition of language used. More generally, the estimated number of both hospital and physician visits in GSJ by Francophones would be markedly larger if those indicating French as a mother tongue also preferred French as the language of service.

These findings contribute to a better understanding of the Francophone community in Saint John relative to the rest of New Brunswick and Moncton, a city with a large Francophone community. This report also helps inform the Association Régionale de la Communauté Francophone (ARCF) about the use of health services in Saint John and potential gaps in services for Francophones.

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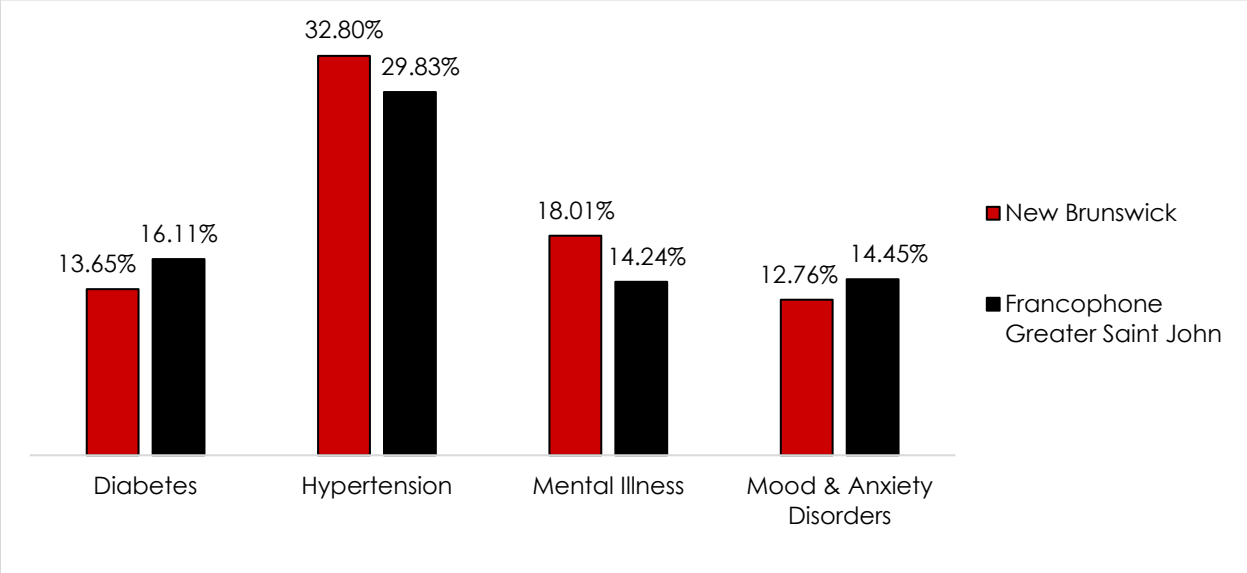
Appendix – Age- and Sex-Standardized Rates

The age- and sex-standardized rates of mortality, prevalence, average years since diagnosis, and hospital admissions per capita are calculated in addition to the corresponding unadjusted rates present throughout this report. However, in most cases, the age- and sex-standardized rates are similar enough to the unadjusted rates to be excluded. In this section, we show cases in which the age- and sex-adjusted rates differ in a notable way from the unadjusted rates. Note the standardized weights used for age and sex standardization came from the NB age and sex population counts used in this report.

Among the four most common chronic diseases (diabetes, hypertension, mental illness, and mood and anxiety disorders), the largest difference between the unadjusted prevalence rates (Figure 19) and the age- and sex-adjusted rates (Figure 31) is for hypertension.

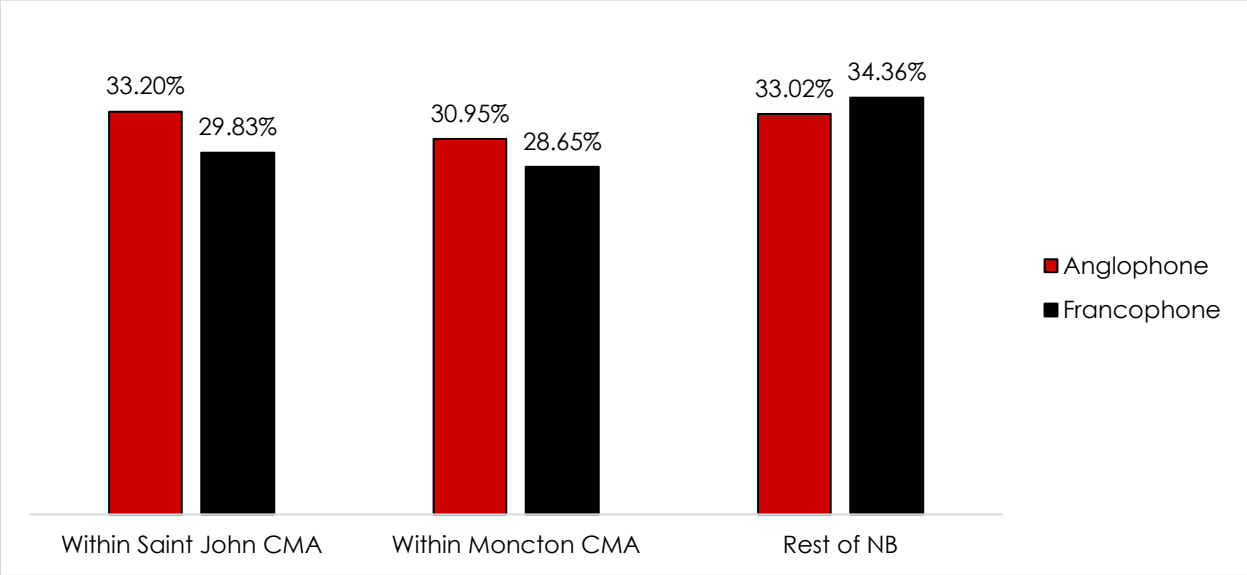
A 6.97% difference is present for the unadjusted rates, whereas that difference is reduced to 2.97% for the age- and sex-standardized rates. The other rates remain similar for both unadjusted and age- and sex-standardized rates.

Figure 31: Age- and Sex-Standardized Prevalence Rates of the Four Most Prevalent Chronic Diseases for NB and Francophone GSJ



The difference between the unadjusted prevalence rates for hypertension (Figure 20), which totals 14% from the lowest rate to the highest rate, is significantly larger than the difference between the age- and sex-standardized rates (Figure 32), which totals 5.72% from the lowest rate to the highest rate. However, in both cases, the lowest hypertension prevalence rate is for the Francophone Moncton group, and the highest prevalence rate is for the Francophone Rest of NB group. In addition, the overall hypertension prevalence rate remains similar for both the unadjusted and the age- and sex-standardized rates.

Figure 32: Age- and Sex-Standardized Prevalence Rates of Hypertension by Language for Saint John CMA, Moncton CMA, and the Rest of NB



The largest difference between the unadjusted number of average years since diagnosis (Figure 21) and the age- and sex-standardized number of average years since diagnosis (Figure 33) is for dementia, with 3.13 years for the unadjusted average and 0.60 years for the age- and sex-standardized average. Dementia typically presents in older adults, which could explain the decrease in the average after the age-sex standardization.

Figure 33: Age- and Sex-Standardized Average Number of Years Since Diagnosis of Chronic Diseases for NB (2018)