Is Francophone Language Status Associated With Differences in the Health Services Use of Rural Nova Scotians?

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ABSTRACT

Objectives: Research suggests that Canadian francophones living in minority contexts have little access to health services in French and are more likely to receive poorer health services. We examined whether francophones in one Nova Scotia (NS) community showed different patterns of health service use from anglophones in similar rural communities, or the NS population overall.

Methods: We used administrative data to calculate 10-year cumulative incidence rate ratios for the period 1996-2005 for treated cancers, circulatory diseases, diabetes and psychiatric disorders in Clare (population 8,815, predominantly francophone) and compared these with six predominantly Anglophone communities (total population 38,147) using data for the province overall as the reference standard. We also compared 10-year treated incidence rate ratios for visits to family physicians and specialists and for admissions to hospital.

Results: Treatment incidence rates for all four disease groups in all rural areas were dominated by family physician visits and hospital visits; visits to specialists for some disease outcomes were often lower in rural communities. Visits to psychiatric specialists were especially low in rural communities, irrespective of language status, being 30% less than for the province overall. No significant differences in treated disease incidence were detected between Clare and the comparison anglophone communities. Treated incidence rate ratios for diabetes and circulatory diseases were significantly higher in Clare and the rural anglophone communities relative to the province overall.

Conclusion: The patterns of health care use and treated disease incidence seen in Clare and the comparison areas are more likely a function of rurality than they are of language.

Key words: Language; communities; rural health; disease incidence; access

La traduction du résumé se trouve à la fin de l'article.

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Effective communication is critical to accurate diagnosis, treatment option discussions and patient education.[1] Patient–provider language differences have been associated with increased hospital admissions,[2] longer hospital stays[3] and less satisfaction with care.[4] Canadian francophones living in minority contexts often have limited access to health services in French and thus may receive lesser quality care.[5] Little is known about the use of health services in such communities since national health surveys do not specifically identify them.[6]

Nova Scotia (NS) has over 30,000 Acadian and francophone citizens,[7] representing more people than all other linguistic minority populations combined, yet little is known about their health status or use of services. Francophone health services are not well developed in NS – only 10% of NS physicians speak French, and only 14% of health care professionals are comfortable providing services in French.[8] It is unknown whether a lack of French language health services translates into challenges for francophones in receiving health care.

We investigated whether francophones in one Nova Scotia community showed different patterns of health service use from anglophones in similar rural communities, or the NS population overall.

METHODS

A retrospective cohort study-design was employed to calculate age- and sex-standardized ten-year cumulative incidence rate ratios for treated incidence of four disease categories (cancer, diabetes, cardiovascular disease and psychiatric illness) for Clare (population 8,815, predominantly francophone) and six comparison NS communities (total population 38,147, predominantly anglophone) relative to the overall NS population. We also examined incidence of visits to family physicians and specialists, and hospital admissions for these conditions.

Treated incidence data were abstracted from two administrative databases: the Discharge Abstract Database of admissions provided by the Canadian Institute for Health Information, and physicians billing data for family physicians and specialists, provided by Medical Services Insurance, Nova Scotia's medicare payment agency. Both databases are held by the Population Health Unit at Dalhousie University. Both Health Canada[9] and the Public Health Agency of Canada (PHAC)[10] have used administrative databases for chronic disease surveillance. Although the data used by both agencies were for billing rather than surveillance, they have proved highly accurate for disease surveillance, over time and against other measures.[9-11] Since we examined data from 1996-2005, data from the 2001 Canadian census were used to determine population denominators.

Case selection

We included Nova Scotians (all ages) with contact with a family physician, specialist or inpatient/outpatient services from 1996-

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Figure 1. Location of Clare and comparison communities

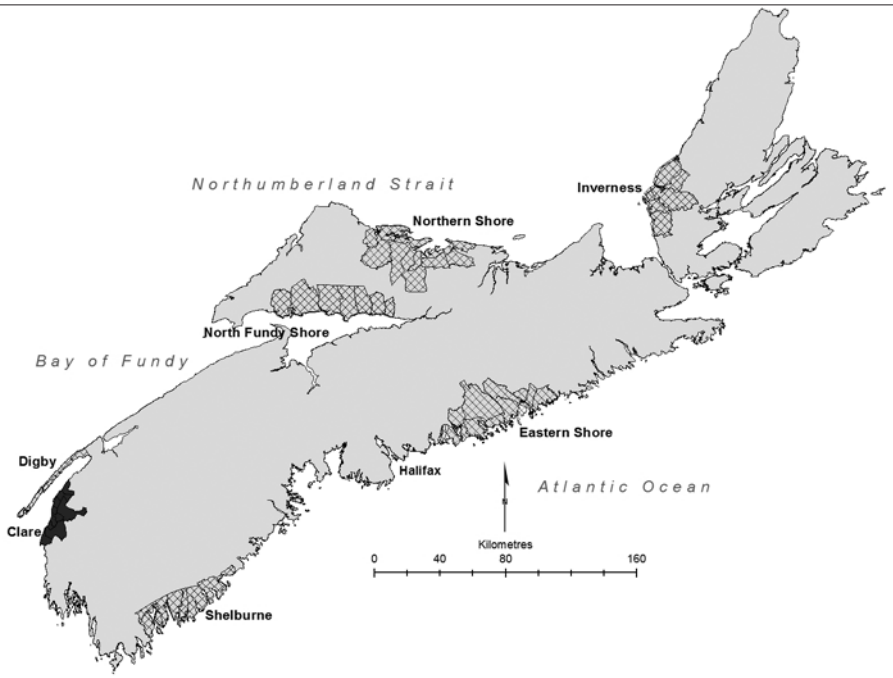

Table 1. Demographic Characteristics of Clare and Comparison Communities

Community	Total Population	First Language French (%)	First Language English (%)	≥60 Years of Age (%)	Not Born in Canada (%)	Not Employed (%)	Less Than High School Education (%)	Household Income (%)
Clare	8815	75.2	20.9	22.7	1.5	11.3	24.9	34,351
Digby	1890	0.3	98.6	22.6	1.1	13.3	30.5	29,963
Eastern Shore	6437	1.3	97.5	25.5	1.1	9.2	28.8	30,944
Inverness	5113	0.5	96.3	20.5	1.9	16.3	26.6	40,807
North Fundy Shore	4973	0.3	99.5	26.3	0.4	17.2	33.9	30,360
Shelburne	7958	0.4	99.0	22.1	0.7	9.9	24.5	33,785
Northern Shore	11,776	1.1	96.8	25.1	2.3	15.7	32.3	33,988
Nova Scotia	908,005	3.5	96.2	18.5	1.6	5.6	31.7	39,908

Source: Statistics Canada, Canadian 2001 Census.

2005 to calculate population standardized incidence rates for the following conditions based on appropriate ICD-9 Clinical Modification codes for the years 1996-2001 and ICD-10 Modification Codes for the years 2002-2005: Invasive Cancer (all malignant neoplasms including malignant skin cancers); Circulatory Disease (cardiovascular disease, hypertensive disease, cerebrovascular disease and peripheral vascular disease); Diabetes (Types I and II); and, Psychiatric Disorders (all ICD-9 and 10 coded mental and behavioural disorders). We used the most responsible diagnosis following the definition used by PHAC for surveillance of diabetes[9] and for psychiatric disorders.[10] Overall treated incidence was defined as any first contact for each condition during the ten-year period. Disease outcomes were considered separately, so that an individual could be counted more than once for each health condition.

Selection of communities

The Municipality of Clare is an Acadian community in south-western NS settled in 1768, with approximately 9,000 residents, of whom approximately 75% speak French. This is the largest proportion of francophones of any NS community. We chose six predominantly anglophone comparison communities similar to Clare in terms of rural coastal location (Figure 1), proportion of population >60 years of age, proportion not Canadian-born, unemployment rate, proportion with < high school education and total household income, based on the 2001 census (Table 1). Proximity to a hospital was also considered in selecting comparison communities. Dissemination area boundaries were used to define Clare and the comparison communities geographically.

Rate calculations

We used Statistics Canada's Postal Code conversion file (PCCF+) to geocode the home postal code of individuals from Clare and the comparison communities for each type of health care visit (three types for four disease groups) and overall incidence of treated disease. The PCCF+ links the six-character postal code to standard census geography, and probabilistically assigns a latitude and longitude to each code weighted according to the number of residents in the area of interest. Overall treated incidence rate ratios for Clare and the comparison communities were calculated relative to the total Nova Scotia population for each disease group using indirect age and sex standardization. Rate ratios were also calculated for family physician visits, specialist visits and hospital admissions for each disease group using the same approach. To be sure we were dealing with incident cases, we excluded patients appearing in the database in the year prior to the period analyzed. Individuals could contribute only once to each disease category, though it was possible for an individual to appear in more than one category. Confidence intervals (95%) were calculated to determine the parametric sig-

Table 2. Incidence Rate Ratios for Clare and Comparison Anglophone Communities

Indicator of Care	Clare	Comparison Communities
Cancers		
Family physician visit	1.22 (1.11-1.32)	1.16 (1.12-1.20)
Hospital admission	1.17 (1.05-1.29)	1.08 (1.03-1.12)
Specialist visits	0.92 (0.84-0.99)	0.97 (0.94-1.00)
Overall diagnosis	0.98 (0.91-1.05)	1.01 (0.99-1.04)
Diabetes mellitus		
Family physician visit	1.14 (1.06-1.22)	1.05 (1.01-1.08)
Hospital admission	1.58 (1.13-2.04)	1.45 (1.28-1.62)
Specialist visits	0.76 (0.66-0.86)	0.99 (0.94-1.04)
Overall diagnosis	1.12 (1.04-1.20)	1.07 (1.04-1.11)
Circulatory disease		
Family physician visit	1.19 (1.14-1.23)	1.15 (1.13-1.17)
Hospital admission	1.58 (1.44-1.72)	1.23 (1.18-1.27)
Specialist visits	1.06 (0.99-1.13)	0.98 (0.95-1.00)
Overall diagnosis	1.18 (1.13-1.23)	1.14 (1.12-1.16)
Psychiatric disorders		
Family physician visits	0.99 (0.95-1.02)	1.04 (1.02-1.05)
Hospital admission	1.34 (1.13-1.56)	1.36 (1.27-1.46)
Specialist visits	0.69 (0.62-0.76)	0.71 (0.68-0.74)
Overall diagnosis	0.99 (0.96-1.03)	1.04 (1.03-1.06)

nificance of differences between treated incidence rate ratios; differences were considered significant where confidence intervals did not overlap.

RESULTS

There were 959,939 incident cases presenting for treatment for the four disease groups over a ten-year period ending in 2005. Of these, 943,142 (98%) had a valid postal code for geocoding. There were 481,990 cases of psychiatric disorder, 273,229 cases of circulatory disease, 103,680 cases of cancer and 84,243 cases of diabetes.

Cancer

Visits to family physicians and hospital admissions in Clare and comparison anglophone communities were significantly higher than for NS (Table 2), though Clare and the comparison communities did not differ significantly from each other in this respect. Significantly fewer specialist visits occurred in Clare compared with the province overall, though Clare and the comparison communities did not differ significantly from each other. Clare's overall incidence rate for treated cancer was not statistically different from that in NS and it did not differ from that of the comparison communities (rate ratios of 0.98 and 1.01, respectively).

Diabetes

Family physician visits and hospital admissions for diabetes in Clare and the comparison communities were significantly higher than those for NS (Table 2) but not significantly different from one another. The treated incidence rate for specialist visits in Clare (rate ratio 0.76) was significantly lower than the provincial rate and the rate in the comparison communities (rate ratio 0.99). Clare's overall incidence rate for treated diabetes was similar to that in the comparison anglophone communities (rate ratios of 1.12 and 1.07, respectively) and both were significantly higher than NS overall.

Circulatory diseases

Family physician visit and hospital admission rates for circulatory diseases in Clare and the comparison communities were significantly higher than those for NS (Table 2), and the hospital admission rate for Clare was significantly higher than that of the comparison communities. Rates of specialist visits for circulatory diseases in Clare and the comparison communities were not statistically different from the province as a whole and did not differ from each other. Clare's overall incidence rate for treated circulatory system diseases was similar to the comparison anglophone communities and both were significantly higher than in NS overall (rate ratios of 1.18 and 1.14, respectively).

Psychiatric disorders

The rate for family physician visits for psychiatric disorders in Clare was similar to that in the comparison communities and to NS, while those in comparison communities were higher than in NS (Table 2). Significantly larger incidence rates for hospital-treated psychiatric disorders were found for both Clare and the comparison communities compared to rates for the province as a whole (rate ratios of 1.34 and 1.36, respectively) though these did not differ significantly from each other. The rates for specialist visits were about 30% lower in both Clare and the comparison communities than in NS (rate ratios of 0.69 and 0.71, respectively) and both these differences were statistically significant. The incidence rate for treated psychiatric disorders in Clare was no different from that in NS, while the treated incidence rate for these disorders was higher than that of NS in the comparison anglophone communities (rate ratio of 1.04).

DISCUSSION

This study examined whether francophones in one NS Acadian community showed different patterns of health service use from anglophones in similar communities, or the NS population overall. Incidence rate ratios for treated cancers, diabetes, cardiovascular disease and psychiatric disorders were calculated for a municipality with a majority francophone population (Clare) and a group of anglophone communities with similar socio-economic characteristics. All incidence calculations were relative to the population of Nova Scotia.

No significant differences in incidence rate ratios for treated disease were detected between Clare and the comparison communities. However, in both Clare and those communities, treatment rates for all four health outcomes (the exception being family physician visits for psychiatric disorders in Clare) were dominated by family physician and hospital visits, and in several instances, especially for psychiatric illness, fewer specialist visits. These findings suggest that any disadvantages in access to health services in Clare are more likely a function of rurality than of language. Patients admitted to rural community hospitals in Nova Scotia are often put under the care of their family physician, with specialist care provided through consultation.[12] Despite universal health insurance, this pattern of relatively easy access to primary and hospital care, with reduced access to specialists, is characteristic of other marginalized Canadian populations.[13,14] Accurate diagnosis and appropriate treatments may be jeopardized by reduced availability of medical specialists and a greater reliance on family physicians and hospital care. For example, problems in accessing specialist care, compounded by limited diagnostic and management resources, have been observed in rural areas with high rates of diabetes.[15]

Incidence rates for treated cancers were not significantly different in the rural study communities from those in NS. Rate ratios for treated diabetes and circulatory diseases were significantly higher in both Clare and the rural anglophone communities relative to the

province, and were higher for psychiatric illness in rural anglophone communities. A potential explanation of these health differences in rural communities is that there are characteristics of the rural context not accounted for in this study that create health disadvantage in rural NS. Poorer health outcomes are known to be more common in rural areas of Canada.[16] However, though living in a rural location may have a negative impact on access to health services, differences in rates of treated illness may not be related to rurality in and of itself. In rural communities, such health determinants as more hazardous occupations, socio-economic factors and higher levels of behavioural risk may be even more important than access to health services.[17,18]

With respect to access to health services, the most striking finding was the low level of contact with psychiatric specialists in both Clare and the other rural communities, irrespective of language status: this was 30% less than the province overall, and the lowest specialist contact of all of the four disease groups. These low levels of contact with psychiatrists are identical to those reported in a study of African Nova Scotians.[14] This low use of specialist mental health services relative to what would be expected from overall incidence, may have implications for the availability, accessibility or acceptability of services for people who may be marginalized by background or geography. An alternative explanation is that they may be obtaining psychological support elsewhere. Qualitative studies could further examine barriers to health service access for this population.

CONCLUSION

This exploratory ecological study examined associations of community francophone language status with differences in health service use in Nova Scotia, finding that patterns of treated disease and service utilization were similar in one francophone and six anglophone rural areas, and that treated incidence was worse in rural areas compared with NS overall. Differences seen in service utilization in rural areas are in keeping with other studies. Rural–urban health status differences may be related to lack of access to specialist care, but may also be attributable to other factors not studied here. It should be kept in mind that this was a population-level study, and the incidence rate ratios presented here cannot be attributed to individuals.

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RÉSUMÉ

Objectifs : Les recherches tendent à démontrer que les Canadiens francophones en situation minoritaire ont peu accès aux services de santé en français et sont plus susceptibles de recevoir des services de santé de moins bonne qualité. Nous avons voulu savoir si les francophones d'une communauté en Nouvelle-Écosse (N.-É.) présentaient un profil d'utilisation des services de santé différent de celui des anglophones vivant dans des communautés rurales semblables, ou de la population néo-écossaise en général.

Méthode : À l'aide de données administratives, nous avons calculé les rapports de taux d'incidence cumulatifs sur 10 ans pour la période 1996-2005 pour quatre catégories de maladies traitées (cancers, maladies circulatoires, diabète et troubles psychiatriques) dans la localité de Clare (8 815 habitants, majoritairement francophones), et nous les avons comparés avec six localités majoritairement anglophones (38 147 habitants en tout) en utilisant les données globales pour la province comme étalon de référence. Nous avons aussi comparé les rapports de taux d'incidence de traitement sur 10 ans pour les visites chez le médecin de famille et les spécialistes et pour les hospitalisations.

Résultats : Dans toutes les régions rurales, les taux d'incidence de traitement pour les quatre groupes de maladies étaient dominés par les visites chez le médecin de famille et les hospitalisations; pour certains résultats sanitaires, les visites de spécialistes étaient souvent inférieures dans les communautés rurales. Les visites de spécialistes en psychiatrie étaient particulièrement faibles en milieu rural, quelle que soit la langue du patient, soit de 30 % de moins que pour la province en général. Nous n'avons décelé aucun écart significatif dans l'incidence des maladies traitées entre Clare et les localités anglophones correspondantes. Les rapports de taux d'incidence de traitement pour le diabète et les maladies circulatoires étaient sensiblement plus élevés à Clare et dans les localités rurales anglophones que dans la province en général.

Conclusion : Les profils d'utilisation des soins de santé et d'incidence des maladies traitées observés à Clare et dans les zones comparables s'expliquent probablement davantage par la ruralité que par la langue.

Mots clés : langue; communautés; santé rurale; incidence des maladies; accès