Exploring Rural Health Inequalities at a Local Scale

The Case of Portneuf, Québec

Robert Pampalon, PhD

Alexandre Lebel, MSc

Denis Hamel, MSc

ABSTRACT

Background: The most common way of accounting for the countryside in health studies has been to compare it, as a whole, to the city. Furthermore, most of the work on small area health inequalities has been confined to major urban centres. To counter this trend, in this paper, we explore small area health inequalities in the predominantly rural county of Portneuf (population = 44,545), Québec. Such information can be of interest for local health planning.

Methods: Three sources of data were used to define neighbourhood units: historical data, socio-economic data and perceptions of local stakeholders. Demographic, socio-economic and general health status indicators were calculated by neighbourhood unit. For health status indicators, data came from mortality files (1998 to 2002), hospitalization files (2001/02) and the 2001 census for disability (individuals who reported being often limited in their daily activities) and the reference population.

Results: The county of Portneuf was subdivided into 8 neighbourhoods. Differences between neighbourhoods were noticeable for demographic, socio-economic and all health status indicators. The greatest differences were found between the town of Pont-Rouge (population = 4,975) and the hinterland of the towns of Donnacona (population = 6,125) and Saint-Marc-des-Carières (population = 3,160). The most striking was a difference of 6 to 8 years of disability-free life expectancy between the two groups, to the advantage of Pont-Rouge.

Conclusion: Although measuring rural health inequalities at a local level has some methodological limitations, true health inequalities exist in the county of Portneuf. These now need to be examined further.

MeSH terms: Rural health; small-area analysis; health status indicators

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

Institut national de santé publique du Québec

Correspondence and reprint requests: Robert Pampalon, Institut national de santé publique du Québec, 945, rue Wolfe, Québec, QC G1V 5B3.

Acknowledgements: The research on which this paper is based was sponsored by the Population Health Initiative of the Canadian Institute for Health Information. The authors are also grateful to two anonymous reviewers who provided helpful comments.

Until now, the favoured way of accounting for the countryside in health studies has been to compare it, as a whole, to the city. Most of the work on small area health inequalities has been confined to major urban centres. However, recent rural studies challenge this paradigm. For example, Canadian studies show a progressive deterioration in health status (i.e., low life and health expectancies, various mortalities, poor health perception) and health determinants (i.e., population exodus, economic decline, smoking, sedentarity, poor access to primary health care) as one moves from the rural periphery of major urban centres to the remote hinterland or small northern villages.¹⁻⁶

These studies consider rural health inequalities at a national or provincial scale. Comparisons are usually between a few large rural groups. Moreover, rural groups can be composed of areas as distant as 1,000 kilometres apart. In a Québec study, for instance,⁵ the smallest group consists of more than 325,000 individuals from opposite ends of the province. Although valuable for national or provincial policy purposes, conclusions reached at that level of geography are not necessarily relevant for local decision-makers. More importantly, health inequalities in the countryside can be masked by averages.⁷

In this paper, we explore local health disparities in the countryside. Our research is based in the predominantly rural county of Portneuf, an administrative area of Québec. In Québec, such areas have been created by the government primarily for the planning and delivery of various services, namely primary health care. Our research hypothesis is that health disparities exist in Portneuf. In this paper, we report the two basic steps we went through in order to validate this hypothesis. First, we describe how spatial or neighbourhood units were defined in Portneuf in order to depict health disparities. Second, we measure disparities through demographic, socio-economic and general health status indicators. Finally, we review the advantages and disadvantages of our approach for rural health research at a local level.

DATA AND METHODS

The county of Portneuf spans a 40-kilometre area west of downtown Québec City. The county covers more

than 4,000 square kilometres of land made up of mountains, forests, farms, lakes and rivers. Its major economic activities are typical of rural areas: agriculture, forestry and manufacture of wood, metals and non-metallic mineral-related products. Portneuf has a total population of about 45,000 individuals* scattered along rural routes or clustered in small towns such as Saint-Raymond, Pont-Rouge, Donnacona and Saint-Marc-des-Carières. It consists of 18 municipalities and 3 non-organized territories and, since 1981, corresponds to a County Regional Municipality (MRC) with various responsibilities with regard to land planning and development. The county of Portneuf is also the area of a Local Services Network (RLS)†, one of the main gateways to the health care system in Québec. RLSs offer various services, including medical consultation, nursing care, pregnancy follow-up, home care, and prevention. In Portneuf, accessibility to basic medical, dental and pharmaceutical services is good throughout the county.⁸ However, only Saint-Raymond has a small general hospital.

Defining neighbourhood units

No consensus exists on the way of defining small areas or neighbourhood units. Also, producing meaningful spatial units for local health analysis has important methodological challenges, especially in the countryside.^{9,10} To define these units, we adopted a threefold approach, combining historical, socio-economic and perceptual material.¹¹ First, all subdivisions used by local administrations and institutions over the past 40 years were integrated into a geographic information system (GIS) and mapped. Every subdivision was weighted by its length and period of use and by its spatial accuracy. Second, major socio-economic areas drawn from a cluster analysis of Canadian census measures, by dissemination area, were put on another map. Finally, a focus group exercise with 8 stakeholders from different fields (MRC and municipalities, RLS and community groups) was used to validate, complement and integrate the boundaries that came out

Figure 1. Portneuf sectors and neighbourhoods

from the previous work. Participants were free to use elements from the above maps or to introduce their own criteria. The only restrictions were that such units should be a sum of contiguous dissemination areas and reach an average of 5,000 inhabitants ($\pm 3,000$). In the end, participants modified the above maps to take into account criteria such as social ties, sense of place and common share of public services.

General health status measures

We looked at recommended indicators of population health status for rural communities.¹² We began with life and disability-free life expectancies at birth. Considered one of the best summary measures of health, disability-free life expectancy combines information on mortality and disability to express both life span and quality of life. We used a modified version of the Sullivan method to calculate disability-free life expectancy.¹³ Second, we measured premature (below 65 years of age) all-cause mortality, morbidity and hospitalization. These measures are useful to identify many preventable events for which public health interventions are possible. In addition, they are relatively free from the influence nursing homes or senior residences might

have on the overall population health status of local areas.

Data on mortality come from the Québec deaths file, years 1998 to 2002; data on hospitalization from the Québec hospitalizations file, year 2001/02; and data on disability, from the Canadian census, year 2001. The disabled are defined as those having answered positively to census questions 7 or 8 and, more precisely, having said their activities were often limited at home, at work, at school or elsewhere. All indicators were adjusted for the age and sex structure of the 2001 Québec population and reported with confidence intervals and difference tests ($p < 0.05$).¹⁴⁻¹⁶ Statistical comparisons were made between neighbourhood units and the county of Portneuf, as a whole.

RESULTS

Participants of the focus group agreed on subdividing the county of Portneuf into four geographic sectors (North, East, Centre and West) and splitting them into their urban and rural parts, although relying on dissemination areas only allowed an approximate distinction between these parts. The result was a total of 8 neigh-

* The population of three dissemination areas (1% of Portneuf's population), corresponding to one prison and two large nursing homes, were excluded from the analyses.

† Formerly Local Community Services Centre (CLSC).

TABLE I

Population and Socio-economic Characteristics of Portneuf's Sectors and Neighbourhoods, Québec, 2001

Sector		Neighbourhood	Population			Socio-economic Characteristics			
			Total	Young*	Elderly†	Income‡	Education§	Living Alone	Single-Parent Family¶
			n	%	%	\$	%	%	%
North			11,560	16.4	15.2	21,875.00	41.7	12.6	10.3
	1	Saint-Raymond **	3235	12.4	23.5	21,120.00	41.9	16.7	17.1
	2	Hinterland	8325	18.0	12.0	22,177.00	41.6	10.9	7.6
East			10,485	20.1	11.0	24,798.00	28.3	8.5	12.6
	3	Hinterland	5510	19.2	9.3	24,860.00	30.5	8.1	10.3
	4	Pont-Rouge	4975	21.1	12.8	24,735.00	26.0	8.9	15.3
Centre			12,855	15.7	16.7	23,569.00	34.7	12.4	14.7
	5	Donnacona	6730	15.2	17.7	24,919.00	32.5	12.7	14.4
	6	Hinterland	6125	16.3	15.7	22,088.00	37.1	12.1	15.0
West			9645	15.3	20.5	20,601.00	40.2	12.5	12.6
	7	St-Marc-des-Carières	6285	15.9	20.0	21,136.00	40.0	11.0	14.8
	8	Hinterland	3360	14.3	21.6	19,631.00	40.6	15.3	8.1
Portneuf			44,545	16.8	15.8	22,771.00	36.2	11.5	12.6
Québec province			7,237,475	17.8	13.3	26,059.00	32.8	12.5	16.6

* % population below age 15.

† % population aged 65 and over.

‡ Mean personal income among people age 15 and over, in \$.

§ % population aged 15 and over with no degree, certificate or diploma.

|| % population aged 15 and over living alone in private households.

¶ % single-parent families.

** Neighbourhood labels do not correspond to the census subdivisions of those names but to a collection of dissemination areas combined without regard of municipal boundaries.

Source: Canadian census, 2001.

Figure 2. Disability-free life expectancy at birth in Portneuf's sectors and neighbourhoods†, Québec, 1998-2002* Statistically different ($p < 0.05$) from Portneuf's average (75.0 years).

† Neighbourhood labels do not correspond to the census subdivisions of those names but to a collection of dissemination areas combined without regard of municipal boundaries.

Sources: Québec death database, years 1998 to 2002; Canadian census, 2001.

bourhood units (Figure 1). Four of them are mainly associated with the small towns of Saint-Raymond (unit 1), Pont-Rouge (unit 4), Donnacona (unit 5) and Saint-Marc-des-Carières (unit 7) while the others cover their hinterland. There are noticeable demographic and socio-economic differences between these units (Table I). Sector East (units 3 and 4) dif-

fers from sector West (units 7 and 8), the former having a younger, richer and more educated population. Unit 1 contrasts with the rest of the county, with an older, poorer and less educated population and with a higher proportion of people living alone and in single-parent families.

Likewise, there are noticeable differences in life and disability-free life expectancies

among the small areas of Portneuf (Table II and Figure 2). The best measures are in sector East, and particularly Pont-Rouge (unit 4). Men and women from these areas can expect to live four years more in good health than their overall Portneuf counterparts. This advantage goes up to six and even eight years when the comparison is made with unit 6 and unit 8, the hinterland of Donnacona and Saint-Marc-des-Carières. When mortality and disability among people below 65 are considered, such disparities persist (Table III). While mortality and disability are relatively low in sector East (mainly unit 3), the highest mortality is seen in sector Centre (mainly unit 6) and the highest disability in sector West (mainly unit 8). When hospitalization is considered, the last two sectors contrast most, with high rates in sector Centre and low rates in sector West. Similarly, hospitalization rates differ between units 1 and 2 in sector North. Here, Saint-Raymond (unit 1) displays the highest hospitalization rate in Portneuf.

DISCUSSION

Our results suggest that the rural county of Portneuf constitutes a heterogeneous entity made of small areas, sectors and neighbourhoods, with their own geographic and

TABLE II
Life Expectancy (LE)[†] and Disability-free Life Expectancy (DE)[‡] at Birth by Gender, Sector and Neighbourhood in Portneuf, Québec, 1998-2002

Sector	Neighbourhood	n [§]	Life Expectancy				Disability-free Life Expectancy			
			Female		Male		Female		Male	
			LE	CI	LE	CI	DE	CI	DE	CI
North										
	1 Saint-Raymond ¶	458	82.9	(81.4;84.5)	76.0	(74.5;77.5)	77.9	(76.0;79.8)	71.8	(70.2;73.4)
	2 Hinterland	220	81.1	(77.5;84.8)	72.1	(68.9;75.4)	75.4	(70.7;80.1)	69.7	(66.3;73.0)
East										
	3 Hinterland	237	87.3*	(85.3;89.3)	78.3*	(76.7;79.9)	82.0*	(79.6;84.4)	74.8*	(73.0;76.6)
	4 Pont-Rouge	100	83.5	(81.0;86.0)	79.6*	(77.3;81.9)	80.3	(77.5;83.2)	74.9*	(72.1;77.7)
Centre										
	5 Donnacona	170	82.3	(80.8;83.8)	72.8*	(71.0;74.7)	76.9	(75.2;78.5)	68.7	(66.6;70.9)
	6 Hinterland	155	82.7	(80.4;84.9)	71.4*	(68.6;74.3)	76.8	(74.8;78.9)	69.7	(67.4;72.0)
West										
	7 St-Marc-des-Carières	535	82.8	(81.3;84.3)	75.8	(73.7;77.9)	76.4	(74.7;78.0)	70.3	(67.9;72.7)
	8 Hinterland	300	84.9	(82.7;87.0)	77.1	(74.7;79.5)	78.5	(76.1;80.9)	72.1	(69.2;74.9)
Portneuf										
		235	81.0	(78.8;83.2)	73.0	(69.4;76.7)	73.7*	(71.2;76.2)	66.7	(62.9;70.5)
		1803	83.2	(82.4;84.0)	75.6	(74.7;76.5)	77.8	(76.9;78.7)	71.3	(70.3;72.3)
Québec Province										
		272,370	82.1	(82.0;82.1)	76.0	(75.9;76.0)	79.1	(79.1;79.2)	71.5	(71.4;71.5)

* LE or DE statistically different from Portneuf, as a whole (p<0.05).

† Average number of years to live at birth.

‡ Average number of years to live at birth without disabilities, as defined in Table III.

§ Total number of deaths from 1998 to 2002.

|| 95% confidence interval.

¶ Neighbourhood labels do not correspond to the census subdivisions of those names but to a collection of dissemination areas combined without regard of municipal boundaries.

Sources: Québec death database, years 1998 to 2002; Canadian census, 2001.

socio-economic profile. These areas were defined using a multi-perspective approach and, as such, represent the best possible compromise between historical, socio-economic and perceptual data. Taken individually, each perspective had its own limitations. Looking back for spatial subdivisions administrations have used over the past 40 years revealed very few significant entities, except municipalities. Clustering of socio-economic measures also produced only one clear contrast between small towns and their rural surrounding. Finally, using the dissemination area as the unit for analysis was not fully satisfactory for the local stakeholders. Hence, combining the three perspectives allowed us to overcome some of these limitations and, more importantly, to reconsider the nature of the information usually used to define neighbourhoods.^{10,11} Moreover, new territorial subdivisions are more useful for intervention and knowledge transfer since they correspond to the perception of local actors.

Our results also suggest that health disparities are present within the county of Portneuf. Residents of sector East and especially Pont-Rouge (unit 4) have the highest life and disability-free life expectancies at birth and the lowest premature mortality and disability rates. Residents of units 6 and 8, located in the hinterland of Donnacona and Saint-Marc-des-Carières, are the unhealthiest. These disparities partly mirror socio-economic variations, as noted in Table I. For hospitalization, however, another pattern emerges. Now, units 6 and 8 differ as do units 1 and 2. In fact, the lowest hospitalization rates pertain to the county's most remote areas and the highest to Saint-Raymond. Here, accessibility to hospital services might be at work. Let us recall that such services are only available in Saint-Raymond.

Measuring local health disparities with mortality and hospitalization records is not free from errors. One of these is location error, which occurs when the software assigns an individual to a wrong area of residence due to an imperfect match between the geography of administrative records (6-digit postal code) and that of the census (dissemination area); and such error is frequent in the countryside.¹⁷ We therefore validated the area of residence of all premature deaths (n=433) by comparing the area assigned through the Postal Code Conversion File (PCCF+)¹⁸ with the area obtained after reading the address on the death certificate and matching it with its geographical coordinates, provided in the MRC of Portneuf valuation rolls.¹⁹ This comparison revealed divergent results between the PCCF+ and our procedure in about 52% of deaths at the dissemination area level, and 14% of deaths at the neighbourhood level. We recalculated mortality rates by neighbourhood on the basis of the validated area of residence but did not find any significant change from previous rates, as shown in Table III.

Hence, true health disparities seem to be present in the county of Portneuf. For local decision-makers, this simple conclusion represents a noticeable improvement in their knowledge of residents' health. Until now, the only information available in Québec was for large rural units and for counties, as a whole. Targeting vulnerable groups, popula-

TABLE III

Mortality, 1998-2002, Disability, 2001, and Hospitalization, 2001/02, Among People Under Age 65 by Sector and Neighbourhood in Portneuf, Québec, 2000-2002

Sector	Neighbourhood	Mortality			Disability¶			Hospitalization		
		n†	Rate‡	CI§	n	Rate	CI	n	Rate	CI
North	1 Saint-Raymond **	109	203	(164;241)	315	3.06	(2.39;3.72)	980	10.2	(9.6;10.9)
	2 Hinterland	36	268	(178;358)	110	4.15	(2.63;5.67)	290	13.0*	(11.4;14.5)
East		72	184	(142;227)	205	2.69*	(1.97;3.42)	690	9.5*	(8.8;10.2)
	3 Hinterland	36	155*	(119;191)	225	2.44*	(1.81;3.07)	1015	10.8	(10.2;11.5)
	4 Pont-Rouge	36	141*	(95;187)	105	2.13*	(1.32;2.94)	543	10.8	(9.9;11.7)
Centre		36	174	(117;231)	120	2.81	(1.82;3.80)	472	10.9	(9.9;11.9)
	5 Donnacona	161	274*	(231;317)	490	4.34	(3.59;5.09)	1202	11.3*	(10.7;12.0)
	6 Hinterland	80	260	(202;318)	250	4.20	(3.18;5.22)	583	10.6	(9.7;11.4)
West		81	288*	(225;351)	240	4.50	(3.39;5.62)	619	12.1*	(11.1;13.1)
	7 St-Marc-des-Carrières	89	211	(167;255)	405	4.94*	(4.01;5.88)	742	9.7*	(9.0;10.4)
	8 Hinterland	54	195	(143;247)	225	4.21	(3.14;5.29)	499	10.1	(9.2;11.0)
Portneuf		35	242	(161;323)	180	6.31*	(4.52;8.09)	243	9.0*	(7.8;10.1)
		431	214	(192;233)	1435	3.68	(3.31;4.06)	3939	10.6	(10.2;10.9)
Québec Province		64,131	204	(203;206)	221,790	3.58	(3.55;3.61)	687,925	11.0	(10.9;11.0)

* Rate statistically different from Portneuf, as a whole ($p < 0.05$).

† Total number of people dead, disabled or hospitalized for the years considered.

‡ Rate per 100,000 inhabitants, adjusted for age and sex.

§ 95% confidence interval.

|| Rate per 100 inhabitants, adjusted for age and sex.

¶ People who often had difficulties with daily activities or often had to reduce the amount or kind of activities due to physical or mental conditions or health problems.

** Neighbourhood labels do not correspond to the census subdivisions of those names but to a collection of dissemination areas combined without regard of municipal boundaries.

Sources: Québec death database, years 1998 to 2002; Canadian census, 2001; Québec hospitalization database, year 2001/02.

tions or areas, represents a basic strategy in public health planning,²⁰ and depicting health disparities in the countryside is a first step in that direction. These disparities now need to be confirmed, clarified and explained in order to provide additional meaningful material to local decision-makers. Results presented here are part of a long-term research project on health inequalities and the living environments – working, family and local environments – which combines different approaches and research tools – a health survey, administrative data collection and interviews with local stakeholders and residents.²¹ In future work, these sources will be examined in two ways that now represent promising trends in research on neighbourhood and health.^{22,23} First, data collected on local infrastructures and facilities (i.e., health services, schools, daycare centres, community groups, parks, public transportation, cultural centres) will be linked to perceived health status. Second, structured interviews with 15 residents will tell us more about their lived experience of local area and health.

In the meantime, the present study has shown that exploring rural health inequalities at a local level is feasible and worth-

while. The county of Portneuf might differ from other rural areas in Canada but, as the tools used here are available across the country, such a study can be undertaken elsewhere.

REFERENCES

- Pitblado JR, Pong RW. Geographic Distribution of Physicians in Canada. Sudbury, ON: Centre for Rural and Northern Health Research, Laurentian University, 1999.
- Mitura V, Bollman RD. The health of rural Canadians: A rural-urban comparison of health indicators. *Rural and Small Town Canada Analysis Bulletin* 2003;4(6).
- Mitura V, Bollman RD. Health status and behaviours of Canada's youth: A rural-urban comparison. *Rural and Small Town Canada Analysis Bulletin* 2004;5(3).
- Nagarajan KV. Rural and remote community health care in Canada: Beyond the Kirby Panel Report, the Romanow report and the federal budget of 2003. *Can J Rural Med* 2004;9(4):245-51.
- Pampalon R, Martinez J, Hamel D. Does living in rural areas make a difference for health in Québec? *Health Place* 2006;12:421-35.
- Desmeules M, Pong R, Lagacé C, Heng D. Places of residence and non-communicable diseases mortality risks: are rural Canadians more at risk? Health and Place seminar, Val David, Québec, 2005.
- Haynes R, Gale S. Deprivation and poor health in rural areas: Inequalities hidden by averages. *Health Place* 2000;275-85.
- Castonguay S. L'accessibilité aux services de santé de proximité selon le type de service et le milieu dans la région de Québec. Mémoire de Maîtrise. Faculté d'aménagement, d'architecture et des arts visuels, Université Laval, Québec, 2005.
- Diez Roux AV. Investigating neighborhood and area effects on health. *Am J Public Health* 2001;91(11):1783-89.
- Macintyre S, Ellaway A, Cummins S. Place effects on health: How can we conceptualise, operationalise and measure them? *Soc Sci Med* 2002;55:125-39.
- Lebel A, Pampalon R, Villeneuve P. An integrated approach for defining neighbourhood units in the context of a study on health inequalities in the Québec City region. *The Canadian Geographer* 2007; under review.
- Bornstein S, Bollman R, Gideon V, Hollett A, Lagacé C, Martens P, et al. Indicators of the health of Canada's rural communities. Revised report on a workshop at Memorial University, Saint-John's, NL. October 10-11, 2003; revised 2004.
- Sullivan DF. A single index of mortality and morbidity. *HSMHA Health Reports* 1971;86:347-54.
- Fleiss JL. *Statistical Methods for Rates and Proportions*. New York: John Wiley & Sons, 1981.
- Carriere KC, Roos LL. A method of comparison for standardized rates of low-incidence events. *Medical Care* 1997;35:57-69.
- Mathers C. Health Expectancies in Australia 1981 and 1988. Australian Institute of Health: ABPS, Canberra, 1991.
- Burra T, Jerrett M, Burnett RT, Anderson M. Conceptual and practical issues in the detection of local disease clusters: A study of mortality in Hamilton, Ontario. *The Canadian Geographer* 2002;46(2):160-70.
- Wilkins R. FCCP+ Version 4C. Guide de l'utilisateur. Logiciel de codage géographique basé sur fichier de conversion des codes postaux de Statistique Canada mise à jour en juin 2003. N° de Catalogue: 82F0086-SDB. Statistique Canada, Ottawa, 2004.

19. Ministère des Affaires municipales, du Sport et du Loisir. Rôles d'évaluation foncière. Direction de l'infrastructure municipale et de la géomatique. Janvier 2005.
20. Pineault R, Daveluy C. La planification de la santé : concepts, méthodes et stratégies. Agence d'Arc Inc. Montréal, 1986.
21. De Koninck M, Pampalon R. Living environments and health at the local level: Focus on a locality in the Québec City region. *Can J Public Health* Accepted.
22. Cummins S, Macintyre S, Davidson S, Ellaway A. Measuring neighbourhood material and social context: Generation and interpretation of ecological data from routine and non-routine sources. *Health Place* 2005;11:249-60.
23. Popay J, Thomas C, Williams G, Bennett S, Gatrell A, Bostock L. A proper place to live: Health inequalities, agency and the normative dimensions of space. *Soc Sci Med* 2003;57:55-69.

Received: December 8, 2005

Accepted: July 14, 2006

RÉSUMÉ

Contexte : Jusqu'à maintenant, dans les études de santé, le monde rural a surtout été considéré globalement, en le comparant à la ville, et l'intérêt pour les inégalités locales de santé s'est confiné aux grandes villes. Dans cet article, nous explorons l'existence d'inégalités de santé à l'échelle de petits territoires dans le comté principalement rural de Portneuf (population = 44 545), au Québec. La connaissance de telles inégalités peut s'avérer utile pour les planificateurs locaux.

Méthode : De petits territoires ou unités de voisinage ont été définis, en combinant des informations de nature historique, socio-économique et perceptuelle, notamment le point de vue d'acteurs locaux. Sur la base de ces unités, des mesures démographiques, socio-économiques et de l'état de santé général de la population ont été produites. Pour les mesures de l'état de santé, les données viennent du fichier des décès (de 1998 à 2002), du fichier des hospitalisations (2001-2002) et du recensement de 2001 pour la définition de l'incapacité (personnes ayant signalé être souvent limitées dans leurs activités quotidiennes) et de la population de référence.

Résultats : Le comté de Portneuf a été subdivisé en 8 unités de voisinage. Des différences entre ces unités sont perceptibles tant sur le plan démographique et socio-économique que pour tous les indicateurs de santé considérés. Les plus fortes différences ont été trouvées entre la ville de Pont-Rouge (population = 4 975) et l'arrière-pays des villes de Donnacona (population = 6 125) et de Saint-Marc-des-Carières (population = 3 160). En termes d'espérance de santé, l'écart s'étend de 6 à 8 ans entre ces deux groupes, à l'avantage de Pont-Rouge.

Conclusion : Même si la mesure des inégalités de santé à l'échelle locale en milieu rural pose certains problèmes, de vraies disparités existent dans le comté de Portneuf, et celles-ci demandent maintenant à être examinées plus à fond.

Information is our greatest tool in the fight against the spread of hepatitis C.

Come see how we can help.

Canadian Hepatitis C Information Centre
Get the Facts!

Centre canadien d'information sur l'hépatite C
Informez-vous!

L'information est notre outil le plus puissant dans la lutte contre la propagation de l'hépatite C.

Venez voir comment nous pouvons vous aider.

www.hepc.cpha.ca 1-866-804-HepC