

Review of salaried physician visits in a rural remote community — Bella Coola Valley

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This article has been peer reviewed.

Introduction: The current study quantifies visits to salaried physicians working in a geographically remote health care facility in British Columbia in 2001.
Methods: A retrospective chart review was conducted of patients residing in the Bella Coola Valley and attending the Bella Coola General Hospital/Medical Clinic (BCGH/Medical Clinic) in 2001. Visits to family physicians at this clinic, visits to the BCGH emergency department, hospital admissions, smoking rates and chronic disease prevalence rates were quantified.
Results: An estimated 2378 patients made *7747* BCGH/Medical Clinic family physician visits, and *4474* "other" visits in 2001. These "other" visits included emergency department visits (n = 1736), hospital admissions (n = 245) and prescription visits (n = 2252). Twenty-six percent (n = 622) of the population did not see a family physician at all in 2001, and 15% of the population accounted for 52% of all visits. Women had a higher number of visits than men; pregnant women had a higher number of visits than non-pregnant women, and the Aboriginal population saw family physicians more often than did non-Aboriginal people ($p < 0.001$). Those who had a chronic illness (e.g., diabetes) saw family physicians more frequently than did people who did not have that particular chronic illness ($p < 0.01$). The Aboriginal population used the BCGH/Medical Clinic and emergency department more frequently than did the non-Aboriginal population. BCGH/Medical Clinic physicians had an average of *75* patient visits per week. An additional 22 "visits" per week were for writing prescription refills with the patient not present.
Conclusion: Older people, people with chronic disease, women and Aboriginal peoples more frequently visited the family physicians. Salaried physicians working in geographically isolated communities appeared to behave in ways that minimized contact (e.g., used the phone, wrote prescriptions without patient being present) and maximized time efficiency for both themselves and their patients.

Introduction : La présente étude en cours quantifie les consultations de médecins salariés travaillant dans un établissement de soins de santé en région éloignée en Colombie-Britannique en 2001.
Méthodes : On a procédé à une étude rétrospective de dossiers de patients résidant dans la vallée de Bella Coola et qui se sont présentés à l'Hôpital général et Clinique médicale de Bella Coola en 2001. On a compté les consultations des médecins de famille, les visites à l'urgence de l'hôpital et les hospitalisations, et calculé les taux de tabagisme et de prévalence des maladies chroniques.
Résultats : Un total estimatif de 2378 patients ont visité *7747* fois un médecin de famille à la clinique et effectué *4474* «autres» visites en 2001. Ces «autres» visites comprenaient les visites à l'urgence (n = 1736), les hospitalisations (n = 245) et les consultations pour obtenir une ordonnance (n = 2252). Vingt-six pour cent (n = 622) des habitants n'ont pas vu de médecin de famille du tout en 2001 et 15 % ont effectué 52 % du total des consultations. Les femmes consultaient plus souvent que les hommes; les femmes enceintes consultaient plus souvent que les femmes non enceintes et les Autochtones consultaient un médecin de famille plus souvent que les non-Autochtones

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(p < 0,001). Les personnes atteintes d'une maladie chronique (comme le diabète) consultaient un médecin de famille plus souvent que celles qui n'étaient pas atteintes de cette maladie (p < 0,01). La population autochtone a utilisé les cliniques et l'urgence plus souvent que la population non autochtone. Les médecins de Bella Coola recevaient en moyenne 75 patients par semaine. Vingt-deux autres «consultations» par semaine visaient à faire renouveler une ordonnance en l'absence du patient.

Conclusion : Les personnes âgées, les personnes atteintes d'une maladie chronique, les femmes et les Autochtones consultaient plus souvent les médecins de famille. Les médecins salariés œuvrant dans des communautés géographiquement isolées ont semblé se comporter de façon à réduire au minimum les contacts (p. ex., ont utilisé le téléphone, ont rédigé des ordonnances en l'absence du patient) et à maximiser l'efficience de l'utilisation du temps à la fois pour eux mêmes et pour leurs patients.

Introduction

The era of primary care reform has begun. Health care planners and decision-makers are becoming interested in the subject of visits to health care professionals.[1–3] Who visits doctors, why people visit doctors, the necessity of these visits, and their cost effectiveness are examples of questions currently of interest.

Geographic physician density (physician:population ratios), remuneration type, size of community, gender, marital status, place of graduation, clinical demands and age are all family physician (FP) specific factors that affect the number of patients seen in a given time period.[2–9] With respect to patient-specific factors, studies have shown that women visit FPs more often than do men; people of Aboriginal descent visit FPs more often than do other people; older people visit FPs more often than do younger people; and people with chronic illnesses visit FPs more frequently than those without. Aboriginal peoples have higher rates of smoking and chronic diseases, such as diabetes and inflammatory arthritis, which presumably accounts for a portion of the increased visits reported by this group.[10–18]

Studies have also shown that rural individuals use health services less frequently than their urban counterparts.[19–22] This despite the fact that, compared with their urban counterparts, rural residents are not as healthy: they have higher rates of chronic disease, they report being ill more frequently and are more likely to report poorer health status.[10,23–26] Poorer health among rural residents has in turn been attributed to less education,[10,19] lower income[10,27] and greater proportion of First Nations people in this population.[11,28,29] A number of different explanations for the lower utilization of health services by rural residents have been advanced. Rural residents are more resilient and self sustaining than their urban counterparts.[20,21,25,30,31] They must travel farther to see health care providers; therefore, the time and costs associated with travel may act as a deterrent.[19,32–34] Rural residents have fewer options with respect to the kind and the experience of health care providers available to them. Typically, there may only be one service provider within a small rural community — most likely a physician or a nurse.[35] The inability to be anonymous, confidentiality concerns and the desire to avoid stigmatization are real challenges in rural communities and lead to some people choosing not to seek medical attention.[19,21,35]

The main objective of this study was to quantify patient-visit data for a geographically isolated community staffed by salaried physicians.

Methodology

Description of the community

Bella Coola Valley is a geographically isolated valley located in the central coast region of British Columbia. The communities of Bella Coola, Hagensborg, Firvale and Stuie are all located within the Valley (Fig. 1). According to the 2001 census 2289 people live in the Valley, and 46% of these people are of Aboriginal descent.[36,37] Bella Coola Valley is part of the traditional territory of the Nuxalk Nation, which is a tribe of Salish-speaking Coastal Indians.[38–41]

The United Health Church Medical Services operates a clinic and a hospital in the town of Bella Coola. The hospital and clinic are together in the same complex. There are no other primary care health facilities in the Valley. Bella Coola General Hospital (BCGH) and its medical clinic are serviced by 3 salaried physicians.[42,43] On any given day

there are 2 physicians working at the clinic, thus calculations are based on 2 physicians working per week. BCGH/Medical Clinic is one of the most isolated health care facility communities in British Columbia. The closest higher level hospital is over 450 km by road (to Williams Lake) or a 2-hour flight by air (to Vancouver). The isolation of this community is such that almost everyone who lives in the Valley has either a clinic chart or emergency department (ED) record.

Participatory consultation process and ethics approval

This research project was carried out in a participatory fashion, following the recommendations outlined in a recently published policy statement entitled "A Guide for Health Professionals Working with Aboriginal Peoples."[44–46] Prior to collecting data we obtained letters of support from the Nuxalk Band Council, from the Bella Coola Transitional Health Authority, and from Central Coast Regional District for a comprehensive study on a broad range of determinants of health for people living in the Valley. Ethics approval to collect this data was obtained from Research Ethics Committees located at both the University of British Columbia and at the University of Northern British Columbia. Prior to submitting this manuscript for publication Nuxalk health authorities reviewed the information and approved it for publication.

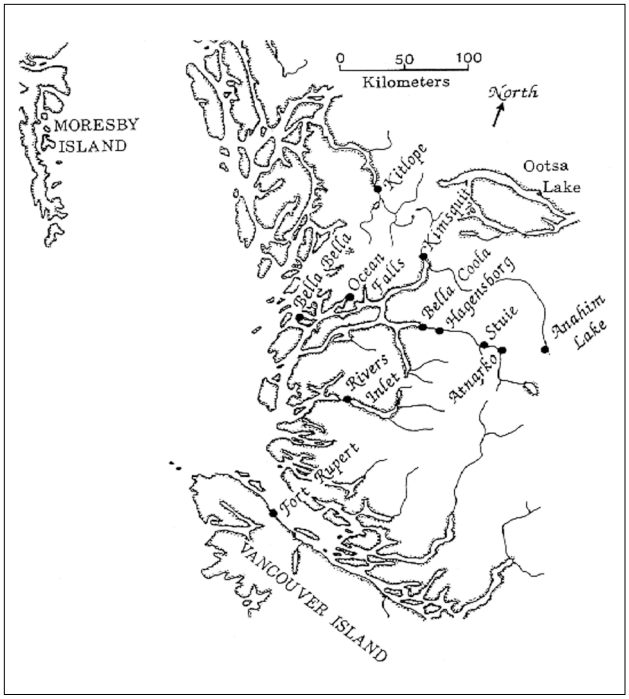


Fig. 1. Detailed map of the Bella Coola Valley.

Chart review details

In the spring of 2002 a detailed retrospective chart review was done by one of the authors (H.V.T.), who is an FP who has worked in Bella Coola Valley for over 15 years. After excluding clinic charts of BCGH/Medical Clinic patients who do not live in the Valley and the inactive charts of patients not currently living in the Valley, 2378 patients made up the 2001 clinic population list — approximately 104% of the May 2001 census estimate for the Valley. The 2378 "active" clinic charts were reviewed for the following information: age, sex, number of clinic visits, height, weight, presence or absence of diabetes and other chronic diseases. Chronic diseases studied included diabetes, osteoarthritis, inflammatory arthritis, chronic back/neck pain, musculoskeletal problems, cancer, depression/anxiety disorder, coronary artery disease, cerebrovascular disease, chronic obstructive lung disease and hypertension. Detailed definitions of these are available elsewhere.[47] For example, inflammatory arthritis refers to a collection of diseases in which the joint or joints are involved in a presumed autoimmune, inflammatory process and includes rheumatoid arthritis, systemic lupus erythematosus, mixed connective tissue disease, polyarthralgia with positive rheumatoid factor or positive anti-nuclear antibody, polymyalgia rheumatica, ankylosing spondylitis, psoriatic arthritis and gout. However, the term arthritis does not include fibrositis / fibromyalgia syndrome.[39]

In addition to presence of chronic illnesses, whether the patient was pregnant in 2001, was a current smoker or had a history of alcohol-related problems was also noted. Alcohol-related problems include 1) alcohol-related diseases (e.g., gastritis, bleed, cardiomyopathy, neuropathy, cirrhosis, elevated liver enzymes), 2) treatment for alcohol withdrawal or having been given a prescription for dye-sulfiram (i.e., Antabuse), or 3) dysfunctional behaviour (e.g., suicide gestures) while intoxicated.

Visits by patients to the BCGH/Medical Clinic were classified as follows:

Family physician visits — when a patient attends the clinic to see a family physician on a specific day for one or more problems.

Prescription visits — when a family physician, through the clinic pharmacist, orders a refill prescription without speaking to or seeing the patient in person.

Emergency department visits — visits to the BCGH ED. People seen in the ED and subsequently admitted to hospital were classified as a hospital admission, not an ED visit.

Hospital admissions — refers to admissions to BCGH.

Patient phone visits — when a physician talks to the patient on the telephone and makes a note in the clinic chart as to what was discussed.

Nurse practitioner visits — visits to the nurse practitioner who works in the clinic. It includes routine visits for infant/child immunizations, routine screening visits (e.g., pap smear or visual acuity test), teaching visits and problem-oriented visits. Nurse practitioners consult with physicians as needed.

Specialist visits — when patients see a visiting specialist at BCGH/Medical Clinic or outside the Valley.

Aboriginal status was also assigned to each patient listed in the 2001 BCGH/Medical Clinic list. Information used to determine Aboriginal status came from multiple sources, including Nuxalk Band lists; archived birth and death vital statistics information; and a comprehensive genealogy of the Nuxalk people, which was constructed in the 1990s. There were also Aboriginal people living in the Valley who were not Nuxalk people. These people were identified from a review of their charts; or by asking directly whether he or she had Aboriginal ancestry. According to the BCGH/Medical Clinic population data, approximately 47% of the residents of the Valley are of Aboriginal descent. This is almost exactly the same number reported from the May 2001 Census (i.e., 46%).[36,37]

We were unable to find any published Canadian physician-visit information that we could compare with our results, so we calculated it ourselves from the College of Family Physicians of Canada's 2001 National Family Physician Workforce Survey database.[48] We investigated the average number of patients seen per week (excluding while on-call visits), as reported by salaried, fee-for-service (FFS) and other groups, as well as by 6 different geographic patient groupings, including rural and geographically remote communities, chosen at random from across Canada.

Statistical analysis

Chart-derived information was entered into an electronic Excel spreadsheet from which results were summarized and graphs created. Then the data were sent to statisticians and other researchers for further analyses.[49] The data were analyzed using the software SPSS (Statistical Package for Social Sciences) for Windows. Differences in the outcomes between gender, ethnic groups (Aboriginal v. non-Aboriginal) and between people with or without chronic disease were evaluated using Pearson's χ^2 and/or one-way ANOVA tests. Significance was defined as having a p value ≤ 0.05 for each outcome measure.[50]

Results

Table 1 summarizes data on visits to BCGH/Medical Clinic in 2001 for residents of the Valley. A breakdown of the FP clinic visit data (Table 2) reveals that 26% of the Valley clinic population did not see an FP in 2001 and 15% of the population saw an FP more than 6 times. This latter group accounted for 52% of all FP visits.

Table 3 provides a summary of the total BCGH/Medical Clinic patient population in terms of sex, ethnic origin, tobacco use, chronic disease / chronic morbidity, and FP clinic visits. Women see FPs more often than men ($p < 0.001$); pregnant women see FPs more often than non-pregnant women ($p < 0.001$); and Aboriginal people see FPs

Table 1. Summary of Bella Coola General Hospital/Medical Clinic visit data, 2001

Visit type	No. of visits	Visits/ patient	Visits/week/ physician
Family physician	7 747	3.26	75
Prescription refill visits	2 252	0.95	22
Emergency department	1 736	0.73	17
Hospital admissions	245	0.10	2.4
Patient phone visits	241	0.10	2.3
Total	12 221	5.14	118

Table 2. Breakdown of Bella Coola General Hospital/ Medical Clinic visit data

No. of visits	No. (and %) of patients	Total no. (and %) of visits
None	622 (26)	0 (0)
1–2	766 (32)	1092 (14)
3–6	632 (27)	2628 (34)
>6	355 (15)	4027 (52)

more often than non-Aboriginal people ($p < 0.001$). Additionally, people who have any of the chronic illnesses listed in Table 3 tend to visit FPs more frequently than people who do not have that particular chronic illness ($p < 0.01$).

Table 4 reveals that as people get older, they are more likely to see an FP ($p < 0.001$).

Table 5 compares the Aboriginal to the non-Aboriginal population in terms of various types of visits, tobacco- and alcohol-related problem (past/present) prevalence rates, and a variety of chronic diseases/morbidities. Aboriginal people use the clinic and ED more frequently than other people. However, Aboriginal people are not admitted to hospital more frequently, they do not see specialists or nurse practitioners more frequently, nor do they have more prescription visits or phone visits than non-Aboriginal people. Smoking rates, history of alcohol issues, diabetes mellitus, inflammatory arthritis are all more common among Aboriginal than non-Aboriginal populations ($p < 0.05$). Non-Aboriginal people appear to have higher rates of hypertension and depression/anxiety disorders ($p < 0.05$).

Across all age groupings Aboriginal women see FPs more often than any other group, followed by non-Aboriginal women and Aboriginal men. Non-Aboriginal men are least likely to see an FP in the clinic (Table 6).

Table 7 summarizes the average number of patients seen per week, as reported by salaried, FFS and other Canadian physician groups, as well as by the 6 different geographic patient populations we studied. In all of the geographic patient populations we studied, salaried physicians saw fewer patients per week than did FFS physicians.

Table 3. Summary of Bella Coola Valley patient population versus Bella Coola General Hospital/Medical Clinic visits

	Population, no. (and %)	Mean no. (± SE) of visits
Total no. of visits	2375	3.3 (0.1)
Men	1222 (51)	2.5 (0.1)
All women	1153 (49)	4.1 (0.1)
Non-pregnant	1126	3.9 (0.1)
Pregnant	27 (1)	10.8 (1.1)
Origins		
Aboriginal	1119 (47)	3.8 (0.1)
Non-Aboriginal	1256 (53)	2.8 (0.1)
Patients with		
Diabetes	127 (5)	8.2 (0.6)
Osteoarthritis	101 (4)	6.4 (0.5)
Inflammatory arthritis	46 (2)	7.5 (1.0)
Chronic back/neck pain	129 (5)	5.7 (0.5)
Musculoskeletal problem	424 (18)	5.8 (0.3)
Cancer	58 (2)	7.8 (0.3)
Asthma	138 (6)	5.9 (0.5)
COPD	33 (1)	7.0 (1.0)
Depression/anxiety	179 (8)	7.3 (0.6)
Coronary artery disease	58 (2)	8.0 (0.8)
Cerebrovascular disease	35 (1)	7.0 (1.0)
Congestive heart failure	27 (1)	8.9 (1.3)
Hypertension	223 (9)	6.6 (0.4)

SE = standard error; COPD = chronic obstructive pulmonary disease

Discussion

The 2001 National Ambulatory Medical Care Survey (NAMCS) has detailed visit information for physicians working in the United States.[51] According to the NAMCS, the average US physician in office-based practice had 80 office visits and 13 hospital visits per week. The average BCGH/Medical Clinic physician had practically the same number of visits per week — 75 patient visits in the clinic, 17 ED visits and 2 hospital admissions for a total of 94 visits per week. The office-based physicians responding to the NAMCS survey included surgical specialties (22%) and medical specialties (26%); therefore, the physician groups are not strictly comparable.

Canadian physician-visit data[48] (Table 7) reveals that salaried physicians see fewer patients per week than do FFS physicians in all geographic patient populations studied. The results are consistent with the generally held view that salaried physicians see fewer patients than FFS physicians, although one should not equate number of patients seen to how "hard" a physician works. Bella Coola Valley is a geographically remote area, and the physicians are salaried. The average number of patient visits per week reported for salaried physicians working in geographically remote communities across Canada

Table 4. Breakdown of visits to Bella Coola Valley General Hospital/Medical Clinic, by age of patient

Age group, yr	No. of population in age group	Mean no. (and SE) of visits
0–17.9	651	2.2 (0.1)
18–24.9	232	2.9 (0.3)
25–39.9	501	3.3 (0.2)
40–44.9	185	3.1 (0.3)
45–64.9	589	4.0 (0.2)
≥65	217	4.9 (0.3)

was 76 ± 33, which is almost identical to the average number reported for Bella Coola Valley physicians — 75 patients seen per week (excluding patients seen while on-call). A closer look at the data in Table 1 shows 22 "visits" per week are for ordering prescription refills through the clinic pharmacist without the physician seeing or speaking to the patient. Inclusion of these visits increases the number of visits per Bella Coola Valley physician per week to 97, which is closer to the value reported for physicians working in geographically remote communities who are remunerated predominantly by FFS (Table 7). One can't help but speculate whether FFS physicians choose not to write prescription refills without actually seeing patients so that they can get paid for the service. Since there is no incentive for salaried physicians to see patients face-to-face when re-filling prescriptions, one should not be surprised to find out there are differences in behaviour between the 2 physician groups around this issue.

Physician:population ratios and health of a popu-

Table 5. Comparison between non-Aboriginal and Aboriginal patients

	Mean no. (and SE) of patient visits		
Type of visit	Non-Aboriginal	Aboriginal	*p* value
Family physician, clinic	2.8 (0.1)	3.8 (0.1)	<0.001
Prescription refill visits	0.9 (0.1)	1.0 (0.1)	0.218
Emergency department	0.4 (0.0)	1.1 (0.1)	<0.001
All hospital admissions	0.2 (0.0)	0.2 (0.0)	0.063
Patient phone "visits"	0.1 (0.0)	0.1 (0.0)	0.503
Specialist	0.4 (0.0)	0.5 (0.0)	0.264
Nurse practitioner	0.6 (0.0)	0.7 (0.1)	0.755
	Mean no. (and %) of patients		
Health issue	Non-Aboriginal	Aboriginal	*p* value
Currently smoking	319 (25)	382 (34)	<0.001
Alcohol issues	134 (11)	254 (23)	<0.001
Pregnancy	10 (1)	17 (2)	0.097
Diabetes	56 (4)	71 (6)	0.041
Osteoarthritis	60 (5)	41 (4)	0.18
Inflammatory arthritis	16 (1)	30 (3)	0.013
Chronic back/neck pain	79 (6)	50 (4)	0.051
Musculoskeletal problems	238 (19)	186 (17)	0.139
Cancer	39 (3)	19 (2)	0.069
Depression/Anxiety	109 (9)	70 (6)	0.026
Coronary artery disease	35 (3)	23 (2)	0.249
Cerebrovascular disease	17 (1)	18 (2)	0.607
Congestive heart failure	19 (2)	8 (1)	0.067
Hypertension	158 (13)	65 (6)	<0.001

SE = standard error

Table 6. Comparison of visits to the Bella Coola General Hospital/Medical Clinic between the non-Aboriginal and Aboriginal population, by age and sex

	Age group, in years, mean (and standard error)					
Sex	<18	18–24.9	25–39.9	40–44.9	45–64.9	>65
Non-Aboriginal men	1.3 (0.1)	1.4 (0.2)	1.3 (0.2)	2.4 (0.4)	2.9 (0.3)	4.3 (0.5)
Non-Aboriginal women	1.7 (0.2)	2.6 (0.4)	3.7 (0.4)	2.9 (0.4)	3.9 (0.4)	4.5 (0.4)
Aboriginal men	2.4 (0.2)	1.8 (0.3)	2.0 (0.2)	2.8 (0.5)	4.0 (0.5)	5.1 (1.0)
Aboriginal women	2.8 (0.2)	4.9 (0.6)	6.2 (0.6)	5.3 (0.9)	6.8 (0.7)	7.4 (1.0)

lation served are 2 things that could have an impact on the number of patients seen (i.e., visits) per week. The physician:population ratio for Bella Coola Valley is 1.03:1000, which is a similar finding to BC's overall ratio of 0.98:1000.[8] Moreover, the Valley population is not healthier than other populations across Canada. In fact, people living in the Valley have the lowest life expectancy in all of BC[28,52] and they are among the unhealthiest people in all of Canada.[10,53] It is believed that the highly rural nature of the region and the high percentage of Aboriginal peoples have contributed to the unhealthy status of people living in the Valley.[11] The Provincial Health Officer has noted that health region inequities are due mainly to differences in socioeconomic conditions. This is due in part because health regions with the highest levels of income, education and employment also have the lowest child mortality rates.[10]

The average Valley resident visits their FP 3.3 times per year. A breakdown of population in relation to clinic-visit frequency reveals that 26% of Valley residents did not see an FP in 2001. Amazingly, 15% of residents accounted for 52% of all BCGH/Medical Clinic visits. According to the NAMCS, the average number of visits to office-based physicians in 2001 was 3.1 visits per person, which is only slightly less than the 3.3 visits per clinic patient reported in our study.[50]

The data reported here should be of interest to those individuals who compare visit data for groups of patients or regional areas.[54] Although patient contact/visit data are becoming increasingly more accessible from government databases, most of these data are based on the FFS structure.

Table 7. Average no. of patients seen per week by Canadian family physicians, calculated from the College of Family Physicians of Canada's 2001 National Family Physician Workforce Survey database.[48]

	No. of physicians (mean no. of visits and SD)	
Population served	Salaried	Fee-for-service*
Inner city	258 (72 ± 43)	2 070 (134 ± 67)
Urban/Suburban	568 (74 ± 44)	9 897 (137 ± 59)
Small town	123 (93 ± 57)	3 493 (134 ± 56)
Rural	1 257 (08 ± 65)	2 116 (135 ± 56)
Geographically remote	117 (76 ± 33)	228 (112 ± 62)
Other	80 (58 ± 39)	109 (111 ± 61)
Total	1 404 (81 ± 51)	17 912 (135 ± 59)

*t test for equality of means reveals $p < 0.05$ compared to Salaried physician group.

The BCGH/Medical Clinic (and clinics in many other rural, remote communities) is staffed by salaried physicians and therefore does not bill Medical Service Plan (MSP) directly for their physician services. The result is that MSP databases do not provide complete information on physician services for residents in these kinds of communities.

Limitations

There are some limitations in this study. These data may not be easily applicable to other communities. Bella Coola Valley is a rural, remote community with over 40% of the residents being of Aboriginal descent. We encourage others to duplicate this survey in their communities to determine if the results are truly comparable. We were not able to determine accurately exactly how many full-time equivalent physicians work in any given week. However, erring on the side of conservatism, this study was based on 2 rather than 2-and-half physicians working in any given week, which would compensate for the fact that we did not have accurate numbers for visits by people who were not residents of the Valley. Moreover, we were not able to calculate the number of times a physician would visit a hospitalized patient.

Conclusion

BCGH/Medical Clinic physicians had an average of 75 patient visits per week, which is similar to those reported by salaried physicians working in geographically remote communities across Canada. An additional 22 "visits" per week are for ordering prescription refills through the clinic pharmacist without speaking to or seeing the patient. Salaried physicians working in geographically isolated communities may not actually consult fewer patients per week, as is widely assumed, compared with their non-salaried counterparts or their colleagues in urban centres who do not do ED call. Rather, these physicians may behave in ways that minimize contact (e.g., use the phone, write prescriptions without the patient being present) and maximize time efficiency for both themselves and their patients. Aboriginal peoples visit physician offices and the ED more often than do non-Aboriginal people. This presumably reflects, in part, the fact that Aboriginal people have higher rates of chronic disease such as diabetes and inflammatory arthritis in this community.

Acknowledgements: Dr. Thommasen would like to acknowledge the Community-Based Clinician–Investigator Program for financial support. The Coast Under Stress Research project contributed $5400, and the University of Northern British Columbia Research Department contributed $4800 "seed" money to this project. Special thanks to Sarah Scott, JANUS Project Coordinator, for putting together the information from the 2001 College of Family Physicians of Canada (CFPC) National Family Physician Workforce Survey (NFPWS) Database. This database is part of the JANUS Project, CFPC, Mississauga, Ont., 2001. ***Funding for the 2001 NFPWS was provided by the following associations:*** CFPC, Canadian Institute for Health Information, Fédération des médecins omnipraticiens du Québec, Royal College of Physicians and Surgeons of Canada, Canadian Medical Association, and Health Canada.

Competing interests: None declared.

Key words: rural community; physician visits; Aboriginal; First Nations health

References

1. College of Family Physicians of Canada. *Managing change: a discussion document on primary health care reform in Canada*. The College; Sept 19, 1995. p. 50.
2. Martin S. Fee-for-service v. salary: the debate is heating up. *CMAJ* 2003;169:701.
3. Canadian Institute for Health Information. *The practicing physician community in Canada 1989/90 to 1998/99: workforce and workload as gleaned through billing profiles for physician services*. The Institute. 2001. p. 37.
4. Chan B, Anderson GM, Theriault M-E. High-billing general practitioners and family physicians in Ontario: How do they do it? An analysis of practice patterns of GP/FPs with annual billings over $400,000. *CMAJ* 1998;158:741-6.
5. Woodward CA, Hurley J. Comparison of activity level and service intensity of male and female physicians in five fields of medicine in Ontario. *CMAJ* 1995;153:1097-106.
6. Norton PG, Dunn EV, Soberman L. Family practice in Ontario: how physician demographics affect practice patterns. *Can Fam Physician* 1994;40:249-56.
7. Dedobbeleer N, Constandriopoulos A-P, Desjardins S. Convergence or divergence of male and female physicians' hours of work and income. *Med Care* 1995;33:796-805.
8. Thommasen HV, Grzybowski S, Sun R. Physician-to-population ratios in British Columbia. *Can J Rural Med* 1999;4:139-45.
9. Coyte PC, Catz M, Stricker M. Distribution of physicians in Ontario: Where are there too few or too many family physicians and general practitioners? *Can Fam Physician* 1997;43:677-83, 733.
10. British Columbia Provincial Health Officer. *A report on the health of British Columbians: Provincial Health Officer's annual report 1996*. Victoria (BC): Ministry of Health and Ministry Responsible for Seniors; 1997.
11. British Columbia Provincial Health Officer. *A report on the health of British Columbians: Provincial Health Officer's annual report 2001. Feature report: The health and well-being of Aboriginal people in British Columbia.* Victoria (BC): Ministry of Health and Ministry Responsible for Seniors; 2002.
12. First Nations and Inuit Regional Health Survey National Steering Committee. *First Nations and Inuit Regional Health Survey National Report 1999*.
13. *Tobacco use in BC*. 29 Sept 1997. Available: www.hlth.gov.bc.ca /tobacrs/summary/index.html (accessed 2005 Dec 19).
14. MacMillan HL, MacMillan AB, Offord DR, et al. Aboriginal health. *CMAJ* 1996;155:1569-78.
15. Young TK. *The health of native Americans: toward a biocultural epidemiology*. Oxford: Oxford University Press ;1994. p. 265.
16. Young TK, Szathmary EJE, Evers S, et al. Geographical distribution of diabetes among the native population of Canada: a national survey. *Soc Sci Med* 1990;31:129-39.
17. Johnson S, Martin D, Sarin C. Diabetes mellitus in the First Nations population of British Columbia, Canada: Part 3. Prevalence of diagnosed cases. *Int J Circumpolar Health* 2002;61:260-4.
18. Coutts JV, Thommasen HV. Prevalence of rheumatoid arthritis in the Heiltsuk people of Bella Bella. *BCMJ* 1998;40:250-1.
19. Nemet GF, Bailey AJ. Distance and health care utilization among the rural elderly. *Soc Sci Med* 2000;50:1197-208.
20. Saag KG, Doebbeling BN, Rohrer JE, et al. Arthritis health service utilization among the elderly: the role of urban–rural residence and other utilization factors. *Am Coll Rheumatol* 1998;11:177-85.
21. Neese J, Abraham I, Buckwalter K. Utilization of mental health services among rural elderly. *Psychiatr Nursing* 1999;13:30-40.
22. Casey M, Thiede-Call K, Klingner J. Are rural residents less likely to obtain recommended preventive healthcare services? *Am J Prev Med* 2001;24:182-8.
23. Thiede-Call K, Casey M, Radcliff T. Rural beneficiaries with chronic conditions: Does prevalence pose a risk to medicare managed care? *Manag Care Q* 2000;8:48-57.
24. Rohrer J, El-Urdaneta M, Vaughn T, et al. Physician visits in a farming-dependent county. *J Rural Health* 1998;14:338-45.
25. Yesalis CE, Lemke JH, Wallace RB, et al. Health status of the rural elderly according to farm work history: the Iowa 65+ Rural health Study. *Arch Environ Health* 1985;40:245-53.
26. Mitura V, Bollman RD. The health of rural Canadians: a rural–urban comparison of health indicators. Statistics Canada Cat no 21-006-XIE. *Rural Small Town Canada Anal Bull* 2003;4(6): 1-23.
27. Wood E, Sallar A, Schechter M, et al. *Universal health care? Poor more likely to die from "avoidable" causes in British Columbia. The evidence speaks*. Monograph series, no 1. Available: www.cheos.ubc.ca/publications.html (accessed 2005 Mar 25).
28. Gobrial M, Mekael H, Anderson N, et al. Diabetic blood sugar control: an urban/rural comparison. *BC Med J* 2002;44:537-43.
29. Canadian Institute for Health Information. *Aboriginal peoples' health in improving the health of Canadians*. Available: www.cihi.ca (accessed 2005 Aug 17).
30. Coburn AE. Rural long-term care: What do we need to know to improve policy and programs? *J Rural Health* 2002;18:256-69.
31. Dellasega C, Fisher K. Posthospital home care for frail older adults in rural locations. *J Commun Health Nurs* 2001;18:247-60.
32. Rost K, Fortney J, Fischer E, et al. Use, quality, and outcomes of care for mental health: the rural perspective. *Med Care Res Rev* 2002; 59:231-65.
33. Thelin A, Stiernstrom E-L, Holmberg S. Differences in the use of health care facilities and patterns of general risk factors in farmers with and without occupational health care programs. *Int J Occup Environ Health* 1999;5:170-6.
36. Dansky K, Dirani R. The use of health care services by people with diabetes in rural areas. *J Rural Health* 1998;14:129-37.
35. Schur CL, Berk ML, Dunbar JR, et al. Where to seek care: an examination of people in rural areas with HIV/AIDS. *J Rural Health* 2002; 18:337-47.
36. P.E.O.P.L.E. 27, BC Stats. Available through BC Ministry of Management Services. PO Box 9410, Stn Prov Govt, Victoria BC V8W 9V1.
37. British Columbia Vital Statistics Agency. *2001 British Columbia census*. Victoria (BC): Govt of British Columbia. 2003.
38. Kennedy DID, Bouchard RT. Bella Coola Indians. In: Suttles W, editor. *Handbook of North American Indians*. Washington: Smithsonian Institute; 1990. p. 323-39.
39. McIlwraith TF. The Bella Coola Indians. Toronto: University of Toronto Press, 1992.
40. Thommasen HV. Prehistoric medicine on BC's Central Coast. *BC Med J* 1999;41:343-6.
41. Acheson S. Culture, contact, demography and health among the Aboriginal peoples of British Columbia. In: Stephenson PH, Elliott SJ, Foster LT, et al, editors. *A persistent spirit: towards understanding Aboriginal health in British Columbia*. Canadian Western Geographical Series, Vol 31. 1995. University of Victoria, Victoria. Western Geographical Press. p. 1-42.
42. Interprofessional Rural Program of BC. *Bella Coola: the community in brief*. Available: www.bcahc.ca/irpbc/default.asp?pageid=692 (accessed 2005 Aug 18).

43. Thommasen HV, Newbery P, Watt WD. Medical history of Central Coast of British Columbia. *BC Med J* 1999;41:464-70.
44. Smylie J; for the Aboriginal Health Issues Committee. A guide for health professionals working with Aboriginal peoples: health issues affecting Aboriginal peoples. *J SOGC* 2001;100:54-68.
45. Macaulay AC, Gibson N, Freeman W, et al. Participatory research maximizes community and lay involvement. *BMJ* 1999;319:774-8.
46. Cave AJ, Ramsden VR. Hypothesis: the research page. Participatory action research. *Can Fam Physician* 2002;48:1671-2.
47. Thommasen HV, Zhang W, Voaklander D, et al. The relationship between health survey and medical chart review results, Bella Coola Valley. *Soc Indicators Res 2006;76(2)*. In press.
48. Slade S, Busing N. Weekly work hours and clinical activities of Canadian family physicians: results of the 1997/1998 National Family Physician Survey of the College of Family Physicians of Canada. *CMAJ* 2002;166:1407-11.
49. Harvey G. *EXCEL for Dummies*. 2nd ed. Foster City (CA): IDG Books; 1994. p. 366.
50. Snedecor GW, Cochran WG. Statistical methods. 7th ed. Ames, Iowa: Iowa State University Press; 1980.
51. Cherry DK, Burt CW, Woodwell. *National Ambulatory Medical Care Survey: 2001 summary. Advance data from Vital and Health Statistics*. No. 337. US Department of Health and Human Services: Centers for Disease Control and Prevention. National Center for Health Statistics. 2003. p. 44.
52. Thommasen HV, Thommasen CT, Martiquet P, et al. Causes of death among status indian and other people living in the Bella Coola Valley local health area (1987–2001). *BC Med J* 2004;46: 179-87.
53. Thommasen HV, Patenaude J, McArthur A, et al. Diabetes related disorders and diseases among Aboriginal and other people living in the Bella Coola Valley. *Rural Remote Health J* 4:319 (Online), 2004. Available: http://rrh.deakin.edu.au
54. Reid RJ, Barer ML, McGrail KM, et al. *High users of physician services: a framework and exploratory empirical analysis*. Project #6610-2368-001. Centre for Health Services and Policy Research. Mar 2001.

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