

Vancouver Centre of Excellence



Research on Immigration and
Integration in the Metropolis

Working Paper Series

No. 04-18

Immigrant Status and Unmet Health Care Needs in British Columbia

Zheng Wu and Christoph M. Schimmele

August 2004

RIIM

Research on Immigration and Integration in the Metropolis

The Vancouver Centre is funded by grants from the Social Sciences and Humanities Research Council of Canada, Citizenship & Immigration Canada, Simon Fraser University, the University of British Columbia and the University of Victoria. We also wish to acknowledge the financial support of the Metropolis partner agencies:

- Health Canada
- Human Resources Development Canada
- Department of Canadian Heritage
- Department of the Solicitor General of Canada
- Status of Women Canada
- Canada Mortgage and Housing Corporation
- Correctional Service of Canada
- Immigration & Refugee Board

Views expressed in this manuscript are those of the author(s) alone. For more information, contact the Co-directors of the Centre, Dr. Daniel Hiebert, Department of Geography, UBC (e-mail: dhiebert@geog.ubc.ca) or Acting Co-Director, Dr. Jennifer Hyndman, Department of Geography, SFU (e-mail: hyndman@sfu.ca).

**Immigrant Status and Unmet Health Care Needs
in British Columbia***

Zheng Wu

and

Christoph M. Schimmele

Department of Sociology
University of Victoria, P. O. Box 3050
Victoria, British Columbia, V8W 3P5
zhengwu@uvic.ca

August 2004

*The authors gratefully acknowledge financial support from a Research on Immigration and Integration in the Metropolis (RIIM) grant. Additional research support was provided by the Department of Sociology, the University of Victoria.

Abstract: This study examines the relationship between immigrant status and unmet health care needs in British Columbia. We employ a modified Anderson model of health behaviour and health care access to examine whether differences in help-seeking contribute to any unmet needs differentials between immigrants and non-immigrants. Our supplementary examinations include a description of the specific reasons for unmet needs among immigrants and non-immigrants; a breakdown of unmet needs by health region; an examination of the relationship between length of residence in Canada and unmet needs among immigrants; a description of the types of care needed but not received; and a comparison of BC immigrants to those in Atlantic Canada, Quebec, Ontario, the Prairies, and the Northern Territories.

Keywords: health care; immigrants; immigration; length of residence; British Columbia

Introduction

Immigrants account for over 18 percent (5.4 million people) of the Canadian population, the largest percentage since 1931 (Statistics Canada 2003a). Canada has one of the highest proportions of foreign-born people in the world. About one-third of Canadian immigrants arrived between 1991 and 2001, the majority (77 percent) coming from Asian and other “non-traditional” source countries. Following Ontario, British Columbia hosts the second largest immigrant population in Canada. BC foreign-born individuals number over one million persons and contribute more than one-quarter of the provincial population (Statistics Canada 2003b). An exceptionally large proportion of these people are visible minorities: almost 60 percent of BC immigrants arrived from Asia, Central and South America, Africa, and other places outside of Europe and the United States.

Rapid and increasing immigration to BC has rekindled discussions on how immigrants affect the host population. The popular debates have focused on the putative problems and threats immigration involves, with rising welfare costs being an especially hot topic (Mahtani & Mountz 2002). Unfortunately, the orientation of such debates, which often simply presume that immigration represents a social and economic burden, have neglected important questions on how the migration process affects well-being and needs within immigrant communities (LeClere, Jensen, & Biddlecom 1994). A major question that remains unanswered is how the migration experience affects access to health care services. Universal medical insurance softens financial barriers to medical services, but, being ethnically diverse, the BC immigrant population may face disparities in health care access and utilization because of cultural differences in help-seeking behaviours.

Throughout the general population, unmet needs are increasing despite universal health care. In 1994-95, slightly more than four percent of Canadians aged 12 years and over reported having an unmet need in the previous twelve months (Sanmartin *et al.* 2002). Unmet needs increased modestly but significantly in the following years, surpassing five percent in 1996-97 and six percent in 1998-99. Current data suggest that unmet needs are accelerating rapidly. In 2000-01, 12.5 percent of Canadians reported an unmet need, triple the 1994-95 rate. The escalation of unmet needs raises urgent policy questions because this problem appears to indicate that many people have limited access to health care (Chen & Hou 2002). While having an egalitarian mandate, disparities within the Canadian health care system may be surfacing for it is implausible that rising unmet needs represent *generalized* accessibility barriers. Indeed, specific vulnerable sub-populations (e.g., women and people with low incomes) have the most unmet needs.

Immigrants are another potentially “at-risk” group for having unmet needs, especially considering the influx of visible minority migrants. Our study examines differences in unmet needs between

immigrants and non-immigrants in BC. Our analysis focuses on a basic problem: Do immigrants have more (or fewer) unmet needs than non-immigrants? We begin by examining this question for 14 provincial health regions. We then employ a modified Andersen (1995) behavioural model of health care utilization and access to determine if predisposing characteristics, enabling resources, barriers to services, and medical need mediate any unmet needs disparities between these immigrants and non-immigrants. Next, we examine if length of residence changes unmet needs differences between immigrants and non-immigrants. We also present a description of the main types of health care not received, and examine if there is any significant variation between immigrants and non-immigrants in these regards. Our study concludes with a comparison of BC to other regions of Canada.

Health Care and Unmet Needs

The Canadian Health Act guarantees all legal residents comprehensive and equal benefits regardless of province of residence, income, or employment status (Madore 1996). However, the growth of unmet needs indicates that many Canadians are not getting required medical services. An unmet health care need refers to the gap between necessary medical care and actual treatment received for a specific health problem (Sanmartin *et al.* 2002). An unmet need can surface for reasons involving the availability of services, accessibility of services, and acceptability of services (Chen & Hou 2002). The availability of services, the major reason for unmet needs across Canada, is an issue when required medical services are absent or when delivery of services is delayed by long waiting times. An unmet need because of accessibility problems refers to cost or transportation barriers to health care. British Columbia has significantly more accessibility related unmet needs than the national average (Chen & Hou 2002). Unmet needs can also be the outcome of a combination of accessibility issues and personal beliefs or characteristics of individuals, e.g., feeling that medical care would be inadequate, not knowing where to get care, being too busy to seek help, etc.

Immigration Population in BC

BC is a primary destination for Canadian immigrants. Over one-quarter (26.1 percent) of British Columbians are foreign-born (BC Stats 2003). The province contains the second highest proportion of immigrants in the country and accounts for approximately 19 percent of the national immigrant population. Europeans dominated early migration in-streams and federal immigration policies contained tough restrictions on non-European arrivals (Kelly & Trebilcock 1998). Changes to immigration policy in the 1960s and 1970s de-emphasized the country of origin preferences and thus permitted much more ethnically diverse immigration to Canada. Table 1 illustrates the major regions of origin for BC

immigrants. In 1981, the immigrant population contained mainly people with European (61.6 percent) and Asian (21.2 percent) origins. By 2001, the proportion of Asians in the BC immigrant population increased to over 50 percent and the share of Europeans dropped to 35 percent. This represents a radical transformation of the ethnic structure of migration in-streams over the past two decades. About 76 percent of European immigrants arrived in Canada prior to 1980 and 77 percent of Asian immigrants arrived after 1980 (BC Stats 2003).

TABLE 1. Place of Birth of Immigrants in British Columbia Canada: 1981-2001

Place of Birth	1981	1991	2001
Asia	21.2%	33.8%	50.2%
Europe	61.6%	49.5%	34.9%
United States	10.0%	7.5%	5.4%
Africa	2.1%	2.7%	3.1%
Central and South America	1.4%	2.5%	2.7%
Other Regions	3.7%	4.0%	3.7%
Total	100.0%	100.0%	100.0%
<i>N</i>	631,620	723,170	1,009,820

Sources : Statistics Canada (1984, 1992, 2003b).

In Canada and other developed countries, the foreign-born population is generally healthier than the host population (Chen, Ng, & Wilkins 1996; Landale, Oropesa, & Gorman 2000; McKay, Macintyre, & Ellaway 2003; Pérez 2002). This phenomenon, termed the *healthy migrant effect* by epidemiologists and medical sociologists, appears to spring from a “selection” effect in the migration process or an ethno-cultural advantage among certain visible minority (e.g., Chinese, Hispanic) immigrant groups. The healthy migrant effect covers multiple aspects of overall health status, and includes lower adult and infant mortality rates, fewer chronic conditions, disabilities, and overnight hospitalizations, and better mental health. The healthy migrant effect is an “epidemiological paradox” because it is concentrated among recent, visible minority immigrants, and because it occurs even though the migration process exposes immigrants to health risks, socioeconomic problems, deficient social support, acculturative stress, and discrimination.

The evidence for the healthy migrant effect is robust for variance in all-cause mortality rates, cardiovascular disease (CVD), cancers, and infant birth-weight and mortality (see McKay, Macintyre, & Ellaway 2003), whose outcomes are traceable to differences in etiological characteristics (e.g., health behaviours) between immigrants and non-immigrants. In 1991, Canadian-born men and women had life expectancies at birth of 73.6 and 80.4 years. This compares to 76.3 and 81.8 years for European

immigrant men and women, and 80.3 and 85.7 years for non-European immigrant men and women (Chen, Wilkins, & Ng 1996). The age-adjusted prevalence of chronic conditions in 1994-95 was 57 percent for non-immigrants compared to 50 percent for all immigrant groups (Chen, Ng, & Wilkins 1996). For specific groups, the total prevalence was 55 percent for all European immigrants, 47 percent for recent European immigrants, 45 percent for all non-European immigrants, and 37 percent for recent non-European immigrants.

These findings imply that immigrants ought to have fewer unmet health needs than non-immigrants, for better health decreases the need for health services, the most crucial risk factor of experiencing an unmet need. There is growing concern, however, that the health advantage immigrants enjoy attenuates or vanishes over time (Chen, Ng, & Wilkins 1996; Cho *et al.* Forthcoming; Pérez 2002). The healthy migrant effect may be temporary because the resettlement and acculturation processes can have negative effects on health (Berry *et al.* 1987; Rogler, Cortes, & Malgady 1991; Vega, Kolody, & Valle 1987). The precise reasons for this downward pattern of health are inconclusive, but a plausible explanation may be found in differential access to and utilization of health care services between the foreign-born and domestic-born populations.

Theoretical Background

The Canadian public health insurance system was fully implemented in 1971 with the objective of providing all legal residents with universal and comprehensive coverage for “medically necessary” examinations, procedures, and hospitalizations (Berlin-Deber 2003). Accordingly, an individual’s ability to pay does not change access to core services, meaning that, in contrast to the United States, financial barriers should not be a major consideration in unmet needs variance between Canadian immigrants and non-immigrants. Another important dimension of unmet needs variation, however, is the *social context* of help-seeking behaviour. Rather than being strictly a matter of individual choice, health care decisions are formed through a complex set of processes involving social structural, demographic, and individual characteristics (LeClere *et al.* 1994). In other words, differences in the demand for health care are not simply a function of need (the presence of a health problem), but are structured by help-seeking behaviour norms (values, attitudes, knowledge) within specific social groups (Smaje & Le Grand 1997; Zhang & Verhoef 2002).

Dunlop, Coyte, & McIsaak (2000) observe that, despite universal health insurance, socioeconomic status remains an indirect factor in GP consultations and specialist referrals among Canadians, with less educated people having comparatively fewer contacts with health care professionals. This finding is crucial because it demonstrates that help-seeking behaviours are indeed a fundamental

variable behind unmet needs. Following Stewart (1990), the authors argue that psychosocial characteristics can impede or enable access to health care inasmuch as they affect an individual's ability to effectively articulate health care needs and demand comprehensive treatment. Furthermore, diversity in help-seeking behaviour between social groups can obtain because of differences in perceptions of health and illness, awareness of health risks, and attitudes toward the benefits of medical treatment. For instance, some individuals from disadvantaged educational backgrounds may delay seeking medical attention because they fail to understand the implications of particular symptoms or the benefits of preventative care (Goddard & Smith 2001).

Anderson (1986: 1277) demonstrates that health needs are “a socially constructed phenomenon located within a socially organized context.” There is a *subjective* dimension to how individuals experience illness, which means that health needs are not just neutral conditions related to corresponding medical problems. Rather, socially specific beliefs about illness define how individuals perceive their health needs, and these norms guide their help-seeking behaviours. This logic implies that both nativity and ethnicity may characterize differences in the demand for health care services, for these variables are integral constituents of the social contexts in which illnesses are interpreted and experienced. The potential hazard, in this regard, is that Canadian health care professionals may be insensitive to cultural differences in health beliefs because Eurocentric “ideological structures” frame the social organization of the Canadian health care system. As Anderson observes, the concepts guiding Western medical practices are most germane to white, middle-class individuals. The norms perpetuated within the Canadian health care system are not universal, and may thus conflict with the needs and expectations of individuals from non-Western socio-cultural backgrounds.

Our specific interest here is whether unmet needs are a function of nativity. On one hand, the healthy migrant effect suggests that immigrants should have fewer unmet needs than non-immigrants because superior health status decreases the overall need for health care. But the evidence also indicates that the healthy migrant effect attenuates over time (e.g., Chen, Ng, & Wilkins 1996; Cho *et al.* Forthcoming; Pérez 2002), making us reconsider our expectation that immigrants should need less health care than non-immigrants. More importantly, the social context of the migration process cannot be overlooked in understanding the relationship between help-seeking behaviours and health care utilization. Differences between the immigrant and non-immigrant populations in ethnic composition, socioeconomic status, exposure to stress, and social support, among other variables, may constitute sizeable grounds for variation in unmet needs.

Health disparities can emerge between immigrants and non-immigrants via “selective barriers,” including language problems, foreign concepts of illness and appropriate treatment, or bias within the

health care system (Bollini & Siem 1995; Kou & Torres-Gil 2001). For example, a recent study on chronic fatigue in Chinese immigrant patients illustrates that Canadian health services can be unresponsive across ethno-cultures (Lee *et al.* 2001). These patients believed that health care professionals failed to understand their medical complaints within the social context of their lives, especially the problems they faced as immigrants, a vital facet of their dissatisfaction with the medical treatment they received. The majority of respondents attributed their chronic fatigue to issues inseparable from post-migration events. The most common stressors were interpersonal conflicts stemming from living in large, newly formed households, decreased social status, insufficient social support, and discrimination. These individuals faced an unmet need because most health care professionals did not consider how the migration experience causes distress.

Conceptual Framework

Our empirical analysis adapts Andersen's (1995) model of health care utilization to examine any unmet needs differences between immigrants and non-immigrants in British Columbia. The Andersen model predicts or explains health care utilization as a function of *predisposing characteristics*, *enabling resources*, and *medical need*. Predisposing characteristics encompass the biological and psychosocial impetuses behind help-seeking behaviour. Some examples of predisposing characteristics are gender, age, education, occupation, ethnicity, and personal attitudes. Enabling resources include the presence of health care professionals and facilities, without which utilization could obviously not occur, and resources that are more variable across social groups, such as knowledge of available health care services and entitlements, access to transportation, and quality of social support. Medical need predicts health care utilization because the demand for care is frequently prefaced by a health problem. We incorporate access barriers into this model because variables such as low income (Chen & Hou 2002) and rural residence (Mitura & Bollman 2003) can impede access to health care.

Our analysis begins with a comparison of the reasons given for unmet needs within the immigrant and non-immigrant populations. We follow this description with a comparison of gross unmet needs differences between immigrants and non-immigrants in 14 health regions across BC. We continue by investigating whether gross unmet needs differ significantly between the overall immigrant and non-immigrant populations. We re-examine this question with a series of regression models based on Andersen's framework. We hypothesize that unmet needs variance between immigrants and non-immigrants may be a function of differences in predisposing characteristics (age, gender, ethnicity, education, sense of mastery), enabling resources (social support, community belonging, marital status), and medical need (chronic conditions, self-reported health, stress). We extend Andersen's perspective by

incorporating an examination of whether barriers to health services (low income, rural residence) account for any unmet needs differences between immigrants and non-immigrants.

We also hypothesize that unmet needs within the immigrant population may be a function of length of residence in Canada. As noted above, prior studies indicate that immigrants experience more health problems over time. The increase of chronic conditions, a growing awareness of Canadian concepts of health and illness, and adaptation to Canadian habits, among other things, may increase the risk of unmet needs within the immigrant population over time. For example, length of residence may be relevant to unmet needs among immigrants because the acculturation process influences patterns of health care utilization and how health problems are perceived and expressed to clinicians. Van der Stuyft and co-authors (1989) observe that, among immigrants, the demand for preventative medical care decreases and vague complaints become more common as the level of acculturation increases. But the authors also show that higher levels of acculturation improve the help-seeking process and prognosis.

In addition, we examine immigrants and non-immigrants by differences in categories of medical needs that were unmet. A general examination of unmet needs differences may not provide an accurate illustration of health disparities. Unmet needs capture multiple dimensions of health, including physical health problems, emotional and mental health problems, regular check-ups, injuries, and others. Thus, a strictly cumulative assessment of unmet needs can mask potentially serious unmet needs disparities. For example, immigrants may report fewer overall unmet needs than non-immigrants but *more* unmet needs for specific problems. In this instance, the overall picture would be rather misleading if immigrants reported significantly more unmet needs for serious health problems. Assessing what types of care are unmet is crucial for identifying and removing barriers to service, especially in areas (e.g., mental health) that are sensitive to cultural variance in symptom expression.

Our study concludes by analyzing how BC immigrants compare to immigrants in Atlantic Canada (Newfoundland and Labrador, Prince Edward Island, Nova Scotia, and New Brunswick), Quebec, Ontario, the Prairies (Alberta, Saskatchewan, and Manitoba), and the Northern Territories.

Data and Methods

Data

The Canadian Community Health Survey (CCHS) Cycle 1.1 is our data source. The CCHS 1.1 began in September 2000 with the objective of collecting regular cross-sectional estimates of health determinants, health status, and health care utilization for 136 health regions across Canada. The CCHS 1.1 excludes individuals living on Indian Reserves, Canadian Forces Bases, and some remote areas. The CCHS 1.1 has

two components. The regional-level survey consists of a 45-minute telephone interview covering common content, optional content, and socioeconomic and demographic content. The provincial-level survey is a one-hour telephone interview on common content and one focal topic. Besides English and French, the official languages of Canada, the survey was available in numerous other languages. See Statistics Canada (2003c) for detailed information on CCHS sample design and content. After restricting our analysis to BC adults aged 18 years and over, our study includes 12,602 non-immigrants and 3,918 immigrants.

Measures

We measure and define unmet health care needs using the responses to the following CCHS 1.1 questions. First: “During the past 12 months, was there ever a time when you felt that you needed health care but didn’t receive it?” Second: “Thinking of the most recent time, why didn’t you get care?” Finally: “Again, thinking of the most recent time, what was the type of care that was needed?” The first question is a screening question that identifies those respondents having unmet health care needs. The second question prompts respondents to specify the reason for having an unmet health care need, including unavailability, excessive waiting period, cost, language problems, family responsibilities, etc. The last question identifies the health problem that was unmet, with five possible responses: physical health, emotional or mental health, regular examinations, injury treatment, and others specified by the respondent.

Our study contains five groups of explanatory variables. Table 2 presents the definitions and descriptive statistics for these variables.

TABLE 2. Definitions and Descriptive Statistics for Independent Variables Used in the Multivariate Analyses of Unmet Health Needs: British Columbia, Canada, 2001

Variable	Variable Definition and Code	Immigrants Mean or %	Non-immigrants Mean or %
<i>Predisposing characteristics</i>			
Age	Age in years	48.42	44.12
Age square	Quadratic term of age	2636.85	2236.18
Female	Dummy indicator (1 = yes, 0 = no)	49.9%	51.4%
<i>Race/ethnicity</i>			
Chinese	Dummy indicator (1 = yes, 0 = no)	26.4%	1.8%
Southeast Asian	Dummy indicator (1 = yes, 0 = no)	9.3%	1.5%
South Asian	Dummy indicator (1 = yes, 0 = no)	12.1%	1.0%
Other visible minority	Dummy indicator (1 = yes, 0 = no)	6.6%	4.5%
White	Reference category	45.6%	91.2%
Education	Educational attainment in 10 levels (1 = grade 8 or less, ..., 10 = university degree or above)	5.71	5.5%
Mastery	Sense of mastery scale (7 items; range: 0 - 28; Cronbach's $\alpha = 0.77$) ^a	19.30	20.49
<i>Enabling resources</i>			
Social support	Perceived social support scale (19 items; range: 0 - 76; Cronbach's $\alpha = 0.92$) ^a	61.02	63.70
Community belonging	Sense of belonging to community in 5 levels (1 = very weak, ..., 5 = very strong)	3.23	3.30
<i>Marital status</i>			
Separated/divorced	Dummy indicator (1 = yes, 0 = no)	6.8%	9.0%
Widowed	Dummy indicator (1 = yes, 0 = no)	6.1%	4.8%
Never married/single	Dummy indicator (1 = yes, 0 = no)	17.0%	25.7%
Married/cohabiting	Reference category	70.0%	60.4%
<i>Barriers to health care</i>			
Low income	Income was inadequate (1 = yes, 0 = no)	12.2%	8.9%
Rural residence	Residing in rural areas (1 = yes, 0 = no)	7.2%	16.1%
<i>Medical need</i>			
Chronic condition	Dummy indicator (1 = having any chronic conditions, 0 = otherwise)	61.7%	68.2%
Health	Self-reported health status in 5 levels (1 = poor, ..., 5 = excellent)	3.55	3.70
Stress	Self-reported stress-level in 5 levels (1 = not at all stressful, ..., 5 = extremely stressful)	2.69	2.85
<i>Years in Canada</i>			
< 5 years	Dummy indicator (1 = yes, 0 = no)	13.3%	—
5 - 9 years	Dummy indicator (1 = yes, 0 = no)	16.7%	—
10 - 14 years	Dummy indicator (1 = yes, 0 = no)	12.7%	—
15 or more years	Dummy indicator (1 = yes, 0 = no)	57.3%	—
<i>N</i>		3,918	12,602

Note: Weighted means or percentages, unweighted *N*.

^a See text for detailed description.

We measure predisposing characteristics with five indicators. Age is measured in years. The mean age of the immigrant population is 48 years. The mean age of the non-immigrant population is 44 years. We also include a quadratic term of age. We measure gender with a dummy variable. Females form 50 percent of the immigrant population and 51 percent of the non-immigrant population. We use dummy indicators to group the immigrant population into five taxonomic categories based on race/ethnicity: 26.4 percent of immigrants and 1.8 percent of non-immigrants report Chinese racial/ethnic origins; 9.3 percent of immigrants and 1.5 percent of non-immigrants report Southeast Asian racial/ethnic origins; 12.1 percent of immigrants and 1 percent of non-immigrants report South Asian racial/ethnic origins; 6.6 percent of immigrants and 4.5 percent of non-immigrants report other visible minority racial/ethnic origins; and 45.6 percent of immigrants and 91.2 percent of non-immigrants report white racial/ethnic origins. We measure educational attainment in ten levels, ranging from grade eight or less to a university degree and better. On average, both immigrants and non-immigrants have some education beyond a high school diploma, such as a trades certificate or a diploma from a vocational school or community college. We measure sense of mastery using scoring based on a seven-item scale from the CCHS 1.1 (Cronbach's alpha = .77).

We measure enabling resources in two dimensions. We use the Medical Outcomes Study (MOS) scale of social support (Sherbourne & Stewart 1991). The MOS scale taps four dimensions of social support: tangible support (4 items), affection (3 items), positive social interaction (4 items), and emotional or informational support (8 items). The scale ranges from 0 to 76 (Cronbach's alpha = .92). The mean level of support is fairly good for both immigrant and non-immigrant populations. We measure community belonging with a five-level ordinal variable ranging from very weak (1) to very strong (5). On average, both immigrants and non-immigrants indicate some ambivalence about their sense of community belonging. We use three dummy indicators to measure marital status. The separated and divorced compose 6.8 percent of the immigrant population and 9 percent of the non-immigrant population. Widows compose 6.1 percent of the immigrant population and 4.8 percent of the non-immigrant population. Never married and single people form 17 percent of the immigrant population and 25.7 percent of the non-immigrant population. Married and cohabiting people form 70 percent of the immigrant population and 60.4 percent of the non-immigrant population.

We measure barriers to health care utilization with two indicators. Low income is measured with a dummy variable indicating those who fall under the lowest income quartile. Over 12 percent of the immigrant population report low-income status, compared with 9 percent of non-immigrants. We use a dummy variable to indicate rural residence. Seven percent of immigrants and 16 percent of non-immigrants reside in rural areas.

We measure medical need with three indicators. Chronic health conditions cover the presence of any problems including allergies, asthma, rheumatism, diabetes, heart disease, high blood pressure, stroke, cancers, functional limitations, dementia, and other disorders. We use a dummy variable to indicate the presence of any chronic condition: 62 percent of immigrants and 68 percent of non-immigrants have a chronic condition. We measure self-reported health in five levels, ranging from poor (1) to excellent (5). On aggregate, both immigrants and non-immigrants have self-reported health that falls in between fair and good. We measure stress in five levels, ranging from not at all stressful (1) to extremely stressful (5). On average, both immigrants and non-immigrants fall between “not very stressful” and “a bit stressful.”

Finally, we employ four categories to disaggregate the immigrant population by years in Canada. Our findings show that 13.3 percent of BC immigrants have been in Canada less than five years, 16.7 percent 5-9 years, 12.7 percent 10-14 years, and 57.3 percent 15 or more years.

Statistical Model

We employ logistic regression techniques in our multivariate analysis of unmet needs (e.g., Agresti 1990). We assume that the binary response variable (Y), unmet needs, follows a binomial distribution. The logistic model for $P(Y_i = 1)$ is given by

$$P(Y_i = 1) = \frac{1}{1 + e^{-x_i'\beta}}, \quad i = 1, \dots, n \quad (1)$$

where \mathbf{x}' is a vector of covariates shown in Table 2, and $\boldsymbol{\beta}$ denotes the corresponding parameters. Rearranging equation (1), we obtain

$$\ln\left(\frac{P(Y_i = 1)}{1 - P(Y_i = 1)}\right) = x_i'\beta, \quad i = 1, \dots, n. \quad (2)$$

The log odds transformation in the left-hand of equation (2) is known as the *logit* (P). A simple transformation, $100(1 - e^\beta)$, can be interpreted as the percentage change in the odds for a one-unit increase in x (Long 1997).

Results

Table 3 presents the statistical descriptions of the reasons given for unmet needs by immigrants and non-immigrants. The combination of long waiting times and services being unavailable form the primary reason for unmet needs. Nearly 48 percent of immigrants and 38 percent of non-immigrants report an

unmet need because of these reasons. Of those with an unmet need, a negative perception of health care services contributes to an under utilization of medical services. Around 15 percent of immigrants and 16 percent of non-immigrants attribute their unmet needs to the belief that the care available would be inadequate. Cost is another major problem. About 15 percent of immigrants and 18 percent of non-immigrants have cost-related unmet needs. Excessive waiting time and language problems generate significantly more unmet needs for immigrants than non-immigrants. Non-immigrants have significantly more unmet needs because of services being locally unavailable.

TABLE 3. Reasons for Unmet Health Needs by Immigrant Status: British Columbia, Canada, 2001

Reason ^a	Immigrant	Non-immigrant	p-value ^b
Not available in area	4.97%	10.22%	<.001
Not available when required	15.75%	15.93%	0.931
Waiting time too long	32.50%	21.79%	<.001
Felt would be inadequate	14.65%	16.46%	0.364
Cost	15.04%	17.75%	0.187
Too busy	9.50%	8.58%	0.552
Didn't get around to it	7.71%	10.14%	0.130
didn't know where to go	3.98%	4.44%	0.675
Transportation problems	1.81%	2.36%	0.500
Language problems	2.25%	0.25%	<.001
Personal/family responsibilities	0.99%	1.51%	0.412
Dislike doctors/afraid	3.79%	3.35%	0.660
Decided not to seek care	6.77%	7.51%	0.602
Other	0.08%	0.34%	0.380
<i>N</i>	417	1,852	

Note : Weighted percentages, unweighted *N*.

^a Multiple responses were allowed

^b Computed from a chi square test of independence with *d.f.* = 1.

Table 4 shows the percentage distribution of unmet needs for immigrants and non-immigrants across 14 BC health regions. The prevalence of unmet needs among immigrants is significantly lower than among non-immigrants in five health regions. In the Simon Fraser region 9 percent of immigrants and 13 percent of non-immigrants report an unmet need. About 7 percent of immigrants in the South Fraser region have an unmet need compared to 14 percent of non-immigrants. In Vancouver, 10 percent of immigrants and 14 percent of non-immigrants have an unmet need. About 11 percent of immigrants and 16 percent of non-immigrants have an unmet need in the Central/Northern Vancouver Island health

region ($p = .05$). Finally, in the Northwest-Northeast region, 12 percent of immigrants have an unmet need, in contrast to 19 percent of immigrants. With one exception, the East Kootenay region, unmet needs among immigrants are near or below the 12.5 percent national average.

TABLE 4. Unmet Health Needs by Immigrant Status and Health Region: British Columbia, Canada, 2001

BC Health Region	Immigrant	Non-immigrant	p-value ^a
East Kootenay	10.29%	13.79%	0.427
West Kootenay-Boundary	17.95%	12.86%	0.217
Okanagan	10.68%	14.72%	0.102
Thompson-Cariboo	11.11%	13.10%	0.464
Fraser Valley	12.79%	16.49%	0.182
Simon Fraser	9.45%	13.39%	0.012
South Fraser	7.45%	13.98%	0.001
Richmond	10.30%	10.54%	0.916
Vancouver	9.84%	13.98%	0.032
North Shore-Coast Garibaldi	11.92%	13.18%	0.523
South Vancouver Island	11.86%	16.34%	0.053
Central/Northern Vancouver Island	11.34%	16.40%	0.050
North West-North East	11.59%	18.83%	0.038
Northern Interior	12.50%	14.75%	0.510
<i>N</i>	417	1,852	

Note: Weighted percentages, unweighted *N*.

^a Computed from a chi square test of independence with *d.f.* = 1.

Table 5 presents six logistic regression models of unmet health care needs to examine whether help-seeking behaviours account for any disparities between immigrants and non-immigrants. As model 1 indicates, and consistent with our expectations based on the healthy migrant effect, the risk of experiencing unmet health needs is 31 percent ($100(e^{-.369}-1)$) lower for BC immigrants than non-immigrants, according to our uncontrolled results. However, as we hypothesize above, differences in patterns of health care utilization and expectations are a potential explanation for why the prevalence of unmet needs differs between immigrants and non-immigrants. Employing a modified Anderson model of health behaviours and access to medical care, we constructed a series of regression models (models 2-6) that examine whether predisposing characteristics, enabling resources, barriers to health care, and medical need are behind the unmet needs advantage among immigrants.

TABLE 5. Unstandardized Coefficients from Logistic Regressions of Unmet Health Needs on Immigrant Status and Selected Independent Variables: British Columbia, Canada, 2001

Independent Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Immigrant (1 = yes)	-0.369 ***	-0.141 *	-0.399 ***	-0.376 ***	-0.347 ***	-0.093
<i>Predisposing characteristics</i>						
Age	—	0.020 **	—	—	—	-0.009
Age square (× 100)	—	-0.040 ***	—	—	—	-0.020 *
Female (1 = yes)	—	0.279 ***	—	—	—	0.185 ***
<i>Race/ethnicity</i>						
Chinese	—	-0.904 ***	—	—	—	-0.808 ***
Southeast Asian	—	-0.555 **	—	—	—	-0.504 **
South Asian	—	-0.665 ***	—	—	—	-0.540 **
Other visible minority	—	0.136	—	—	—	0.092
White (reference)	—	—	—	—	—	—
<i>Education</i>						
Education	—	0.023 *	—	—	—	0.052 ***
Mastery	—	-0.101 ***	—	—	—	-0.033 ***
<i>Enabling resources</i>						
Social support	—	—	-0.019 ***	—	—	-0.013 ***
Community belonging	—	—	-0.097 ***	—	—	-0.034
<i>Marital status</i>						
Separated/divorced	—	—	0.247 ***	—	—	0.107
Widowed	—	—	-0.432 ***	—	—	-0.043
Never married/single	—	—	0.117 *	—	—	-0.074
Married/cohabiting (reference)	—	—	—	—	—	—
<i>Barriers to health care</i>						
Low income	—	—	—	0.639 ***	—	0.287 ***
Rural residence	—	—	—	0.063	—	0.133 *
<i>Medical need</i>						
Chronic condition	—	—	—	—	0.610 ***	0.719 ***
Health	—	—	—	—	-0.310 ***	-0.357 ***
Stress	—	—	—	—	0.426 ***	0.268 ***
Intercept	-1.759 ***	-0.004	-0.301 **	-1.866 ***	-2.437 ***	0.072
Log Likelihood	-6588	-6330	-6437	-6534	-6141	-5905

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed test).

Model 2 shows how predisposing characteristics may influence the difference in unmet needs between immigrants and non-immigrants. Apart from predicting health care utilization, as Anderson postulates, we argue that predisposing characteristics may have *general* implications for health status, including unmet needs. Indeed, judging from the decline in the magnitude of the estimate (-.369 vs. -.141), predisposing characteristics appear to explain some of the difference between immigrants and non-immigrants ($p < .01$). Model 2 also shows that, as with prior evidence (e.g., Chen & Hou 2002), women are more likely to have unmet needs than men, an unsurprising finding, for women face higher morbidity and more psychological distress than men (Bird & Rieker 1999). The effect of age is curvilinear, with the risk of unmet needs highest in the middle-aged population. Chinese, Southeast Asian, and South Asian race/ethnicity reduce the risk of having an unmet need. Higher educational attainment increases unmet needs. Finally, our findings show that mastery lowers the risk of having an unmet need.

Model 3 examines whether enabling resources account for the variance in unmet needs between immigrants and non-immigrants. As model 3 illustrates, enabling resources affect unmet needs in general, which is consistent with our expectations based on prior evidence (Franks, Campbell, & Shields 1992), but the relationship between these resources and unmet needs variation cannot explain the immigrant effect. For example, our findings indicate that social support and community belonging lower the risk of unmet needs, but perhaps because immigrants and non-immigrants do not differ greatly in these regards (see Table 2), enabling resources could not offer a strong reason for why immigrants have fewer unmet needs. Separated and divorced people have more unmet needs than married/cohabiting people. Widows have fewer unmet needs than married/cohabiting people.

Model 4 investigates the effect of barriers to health care on unmet needs. As noted above, both low income and rural residence increase the risk of having an unmet need. Our results confirm that low income increases unmet needs. The effect of rural residence is non-significant. But, again, barriers to health care do not explain why immigrants have fewer unmet needs than non-immigrants.

Model 5 shows that medical need is a non-significant mediating factor in the unmet needs difference between immigrants and non-immigrants. The presence of a chronic condition, lower self-reported health, and stress all contribute to having unmet needs. We expected that these health statuses might explain the unmet needs advantage among immigrants given their better overall health profiles.

Model 6 combines models 1-5. We observe that immigrant status is no longer significant, although the sign on the estimate remains negative. It is clear that the inclusion of all control variables

accounts for the unmet needs difference between immigrants and non-immigrants. We revisit this important finding in further detail in the discussion section.

Table 6 presents the regressions of unmet needs on length of residence. It shows that length of residence in Canada influences the unmet needs differential between immigrants and non-immigrants. Model 1, showing our uncontrolled results, demonstrates that the risk of experiencing unmet needs is 62 percent ($100(e^{-0.955}-1)$) lower for immigrants who have resided in Canada less than 5 years than native-born British Columbians. Compared with native-born people, foreign-born individuals with 5-9 years have 34 percent lower risks of unmet needs. And long-term immigrants, those residing in Canada 15 years plus, have 27 percent lower risks. Immigrants with 10-14 years of Canadian residence have similar levels of unmet needs as non-immigrants. However, with our selected control variables added, as model 2 suggests, only the most recent arrivals (less than 5 years of residence) to Canada have significantly lower risks of unmet needs than the domestic-born. The risk of unmet needs is 54 percent lower for these immigrants than native-born British Columbians.

TABLE 6. Unstandardized Coefficients from Logistic Regressions of Unmet Health Needs on Years in Canada: British Columbia, Canada, 2001

Independent Variable	Model 1	Model 2 ^a
Years in Canada		
Less than 5 years	-0.955 ***	-0.783 ***
5 - 9 years	-0.420 **	-0.141
10 -14 years	-0.220	-0.113
15 years or more	-0.315 ***	-0.031
Native born (reference)		
Intercept	-1.759 ***	0.142
Log Likelihood	-6583	-5899

^a Model includes control variables shown in Model 6 in Table 5.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed test).

In Table 7, we document the percentage distribution of the types of health care not received, according to immigrant status. The most common type of unmet needs fall under the physical health problem classification. Among those with unmet needs, 77 percent of immigrants and 69 percent of non-immigrants report that they did not receive care for a physical health problem. In this regard, the difference between immigrants and non-immigrants is significant, with immigrants experiencing worse care for physical health problems. Emotional or mental health unmet needs account for 6 percent of total unmet needs among immigrants and 10 percent among non-immigrants ($p = .005$).

Over 5 percent of all unmet needs among immigrants and 7 percent among non-immigrants are because of inadequate regular check-ups ($p > .05$). About 9 percent of unmet needs in the foreign-born population and 10 percent in native-born population stem from improper or inadequate care for injuries ($p > .05$).

TABLE 7. Type of Care Not Received by Immigrant Status: British Columbia, Canada, 2001

Type of care ^a	Immigrant	Non-immigrant	p-value ^b
Physical health problem	76.99%	68.74%	<.001
Emotional/mental health problem	5.57%	9.96%	0.005
Regular check-up	5.31%	7.21%	0.166
Injury	8.77%	10.42%	0.314
Other	9.80%	7.51%	0.123
<i>N</i>	417	1,852	

Note: Weighted percentages, unweighted *N*.

^a Multiple responses were allowed

^b Computed from a chi square test of independence with *d.f.* = 1.

Table 8 presents the results from the logistic regressions of unmet needs of immigrants across Canada. Model 1 shows that immigrants in Atlantic Canada, Quebec, and the Prairies have more unmet health needs than BC immigrants. Immigrants in Ontario and the Northern Territories have a similar prevalence of unmet needs as BC immigrants. Our controlled results, shown in model 2, indicate similar results, except that Quebec immigrants no longer differ from BC immigrants.

TABLE 8. Unstandardized Coefficients from Logistic Regressions of Unmet Health Need on Canadian Region: Canadian Immigrants, 2001

Independent Variable	Model 1	Model 2 ^a
Canadian Region		
Atlantic	0.490 ***	0.425 **
Quebec	0.240 *	0.095
Ontario	0.044	0.025
Prairie	0.175 *	0.199 *
Northern Territories	0.364	0.269
British Columbia (reference)		
Intercept	-2.128 ***	-1.050 **
Log Likelihood	-5745	-5241

^a Model includes control variables shown in Model 6 in Table 5.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed test).

Discussion and Conclusion

This project aimed to enhance our understanding of welfare within the BC immigrant population. Our main contribution involved improving and expanding the existing literature on patterns of health among immigrants, with our specific focus being the prevalence of unmet health care needs. As noted in the introduction, the prevalence of unmet needs is rising across Canada, and studying this problem is important for identifying whether substantial health care availability and delivery problems exist. Unmet needs represent potentially deep fractures within British Columbia's health care system; the restricted availability of required medical care is an especially salient issue, for years of budgetary restraint has compromised the goal of maintaining universal medical welfare, i.e., a single-payer system (Sanmartin *et al.* 2002). The popular image of the health care system includes crowded emergency wards, a shortage of hospital beds, overworked nurses, and long waiting periods for specialized examinations, treatments, and surgical procedures.

While unmet needs are increasing, we questioned whether this represents a generalized trend or growing health care disparities. The literature on population health overwhelmingly supports the notion that there are patterned social differences in health outcomes and access to health care services, with vulnerable groups consistently facing structural disadvantages. Across Canada, the prevalence of unmet needs is greatest among the poor, Aboriginals, and women (Chen & Hou 2002). We argued that nativity may be another crucial unmet needs variable. Viewed from the perspective of the healthy migrant effect, we expected immigrants would have fewer unmet needs than non-immigrants because their better overall health status presumably lowers their demand and need for health care services. However, the migration process may have health-damaging effects. The healthy migrant effect, as we note above, attenuates over time, and this may have implications for the prevalence of unmet needs among immigrants.

Unlike the United States, unmet needs in Canada are not primarily attributable to economic barriers (e.g., cost of insurance) because the single-payer system removes most financial barriers to core medical services. According to our findings, cost contributed to 15 percent of unmet needs among immigrants and 18 percent among non-immigrants. This problem appears rather small and probably could be resolved by subsidizing low-income households for prescriptions and other goods and services excluded from the Medical Services Plan. The Campbell government's Fair PharmaCare program was putatively designed to correct such inequities in access to prescription medicines, but whether the program, which began in May 2003, will lower cost-related unmet needs remains unclear. Few critics support the government's new approach to prescription drug distribution. Many

individuals and organizations consider the new program a move away from the objectives of universal health care because it shifts a larger portion of health care costs onto the sick.

Our initial results show that, consistent with the healthy migrant hypothesis, BC immigrants have fewer unmet needs than non-immigrants. The prevalence rate of unmet needs, without considering any differences in major health variables, is 31 percent lower for the immigrant population than the non-immigrant population. Financial and insurance coverage disparities are not a valid candidate for explaining why immigrants hold this advantage. We hypothesized that behavioural differences may account for this advantage. Using a modified Andersen perspective, we examined whether characteristics embedded within help-seeking behaviours influence the difference in unmet needs between immigrants and non-immigrants.

Our examination of predisposing characteristics provides some evidence for our hypothesis. The unmet needs gap between immigrants and non-immigrants is significantly ($p < .01$) narrower when age, gender, race/ethnicity, education, and English language mastery are considered. Ethnicity could be the key variable because immigrants and non-immigrants are otherwise similar, but a selection effect in the migration process may also be important. Our models of enabling resources, barriers to health care, and medical need fail to support our hypothesis. However, the impact of health behaviours and attitudes on unmet needs seems to encompass a complexity greater than these models could individually capture. Our final model combined all variables from the previous models. In this analysis, our findings show that the inter-relationship of specific predisposing characteristics (race/ethnicity) with aspects of enabling resources, barriers to health care, and medical need explains why immigrants have fewer unmet needs than non-immigrants. The immigrant population loses its unmet needs advantage in the final model.

Our findings indicate that the unmet needs advantage is concentrated among recent immigrants, i.e., those residing in Canada less than 5 years. Most recent immigrants are from Asia. This offers some indirect support for our assumption that race/ethnicity may be a core variable in the unmet needs differential between immigrants and non-immigrants. For example, as prior research indicates, the retention of cultural behaviours improves psychological well-being among Chinese Canadian immigrants (Lay & Verkuyten 1999). Perhaps Asian immigrants have comparatively few unmet needs because they have hardier personalities. Psychological hardiness is an important selection factor in the migration process (Kuo & Tsai 1986). Voluntary migration involves a willingness to accept major life changes and confront potential hardships. The attitude behind this willingness may also make immigrants stoic when confronting illness. Future research should

examine the extent to which immigrants unmet needs advantage reflects stronger, more efficacious personal attitudes toward control and resolution of health problems.

The prevalence of unmet needs among immigrants is mostly a positive evaluation of the BC health care system. For immigrants, access problems would be greatest early into the post-migration period because barriers associated with language problems and limited knowledge about available services would presumably decrease over time. But it is precisely the most recent immigrants who account for the unmet needs difference between immigrants and non-immigrants. Our findings, though limited by cross-sectional data, are rather troubling in this regard. Why do immigrants appear to lose their unmet needs advantage over time? As noted, the healthy migrant effect possibly attenuates with length of residence through the acculturation process. Hence, their unmet needs advantage may vanish because their health needs increase. Further, as social context defines perceptions of health, these immigrants may lose their advantage because they “tune into” unmet needs as they adopt Western concepts of illness in the acculturation process.

The acculturation process is obviously difficult to guard against, at least from a policy standpoint. However, coming to a better understanding of why recent immigrants have fewer unmet needs and why they lose this advantage over time is important for future research. Having this knowledge could help us develop effective policies and strategies for curbing the increasing prevalence of unmet needs throughout British Columbia.

References

- Agresti, A. 1990. *Categorical Data Analysis*. New York, NY: Wiley.
- Andersen, R. 1995. Revisiting the behavioural model and access to medical care: Does it matter? *Journal of Health and Social Behaviour* 36, 1-10.
- Anderson, J. 1986. Ethnicity and illness experience: Ideological structures and the health care delivery system. *Social Science and Medicine* 22, 1277-83.
- British Columbia Statistics. 2003. Special feature: BC immigrant population. *Immigration Highlights* 03-1, 1-2.
- Berlin-Deber, R. 2003. Health care reform: Lessons from Canada. *American Journal of Public Health* 93, 20-24.
- Berry, J., K. Uichol, T. Minde, D. Mok. 1987. Comparative studies of acculturative stress. *International Migration Review* 21, 491-511.
- Bird, C. and P. Rieker. 1999. Gender matters: An integrated model for understanding men's and women's health. *Social Science and Medicine* 48, 745-55.
- Bollini, P. and H. Siem. 1995. No real progress towards equity: Health of migrants and ethnic minorities on the eve of the year 2000. *Social Science and Medicine* 41, 819-28.
- Chen, J. and F. Hou. 2002. Unmet needs for health care. *Health Reports* 13, 23-33.
- Chen, J, E. Ng, and R. Wilkins. 1996. The health of Canada's immigrants in 1994-95. *Health Reports* 7, 33-45.
- . 1996. Health expectancy by immigrant status, 1986 and 1991. *Health Reports* 8, 29-37.
- Cho, Y., W. P. Frisbie, R. Hummer, and R. Rogers. Forthcoming. Nativity, duration of residence, and the health of Hispanic adults in the United States. *International Migration Review*.
- Dunlop, S., P. Coyte, and W. McIsaac. 2000. Socioeconomic status and the utilization of physicians' services: Results from the Canadian National Population Health Survey. *Social Science and Medicine* 51, 123-33.
- Franks, P., T. Campbell, and C. G. Shields. 1992. Social relationships and health: The relative role of family functioning and social support. *Social Science and Medicine* 34, 779-88.
- Goddard, M. and P. Smith. 2001. Equity of access to health care services: Theory and evidence from the UK. *Social Science and Medicine* 53, 1149-62.
- Kelly, N. and M. Trebilcock. 1998. *The Making of the Mosaic: A History of Canadian Immigration Policy*. Toronto: University of Toronto Press.
- Kou, T. and F. Torres-Gil. 2001. Factors affecting utilization of health services and home- and community-based care programs by older Taiwanese in the United States. *Research on Aging* 23, 14-36.
- Kou, W. and Y-M. Tsai. 1986. Social networking, hardiness, and immigrants' mental health. *Journal of Health and Social Behaviour* 27, 133-49.
- Landale, N., R. Oropesa, and B. Gorman. 2000. Migration and infant death: Assimilation or selective migration among Puerto Ricans? *American Sociological Review* 65, 888-909.
- Lay, C. and M. Verkuyten. 1999. Ethnic identity and its relation to personal self-esteem: A comparison of Canadian-born and Foreign-born Chinese adolescents. *Journal of Social Psychology* 139, 288-99.

- LeClere, F., L. Jensen, and A. Biddlecom. 1994. Health care utilization, family context, and adaptation among immigrants to the United States. *Journal of Health and Social Behaviour* 35, 370-84.
- Lee, R., G. Rodin, G. Devins, and M. Weiss. 2001. Illness experience, meaning, and help-seeking among Chinese immigrants in Canada with chronic fatigue and weakness. *Anthropology and Medicine* 8, 89-107.
- Long, S. 1997. *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA.: Sage.
- Madore, O. 1996. *Canada Health Act: Overview and Options*. Ottawa, Canada: Library of Parliament, Research Branch.
- Mahtani, M. and A. Mountz. 2002. Immigration to BC: Media Representations and Public Opinion. Vancouver: RIIM Working Paper Series, No. 02-05.
- McKay, L., S. Macintyre, and A. Ellaway. 2003. *Migration and Health: A Review of the International Literature*. Glasgow, Scotland: Medical Research Council Social and Public Health Sciences Unit.
- Mitura, V. and R. Bollman. 2003. The health of rural Canadians: A rural-urban comparison of health indicators. *Rural and Small Town Canada Analysis Bulletin* 4, 1-23.
- Pérez, C. 2002. Health status and health behaviour among immigrants. *Health Reports* (Supplement) 13, 98-109.
- Rogler, L., D. Cortes, and R. Malgady. 1991. Acculturation and mental health status among Hispanics. *American Psychologist* 46, 585-97.
- Sanmartin, C., C. Houle, S. Tremblay, and J.-M. Berthelot. 2002. Changes in unmet health care needs. *Health Reports* 13, 15-21.
- Sherbourne, C. and A. Stewart. 1991. The MOS social support survey. *Social Science and Medicine* 32, 705-14.
- Smaje, C. and J. Le Grand. 1997. Ethnicity, equity, and the use of health services in the British NHS. *Social Science and Medicine* 45, 485-96.
- Statistics Canada. 2003a. *Canada's Ethnocultural Portrait: The Changing Mosaic*. Ottawa: Statistics Canada.
- . 2003b. Immigration Population by Place of Birth, Provinces and Territories. Online: <http://www.statcan.ca/start.html>.
- . 2003c. *The Canadian Community Health Survey 1.1*. Online: <http://www.statcan.ca/start.html>.
- . 1992. *Census 1991: Immigration and Citizenship, the Nation*. Ottawa: Statistics Canada.
- . 1984. *Census 1981: Place of Birth, Citizenship, and Period of Immigration*. Ottawa: Statistics Canada.
- Stewart, M. 1990. Access to health care for economically disadvantaged Canadians: A model. *Canadian Journal of Public Health* 81, 450-55.
- Van der Stuyft, P., L. Schillemans, and C. Timmerman. 1989. Migration, acculturation, and utilization of primary health care. *Social Science and Medicine* 29, 53-60.

- Vega, W., B. Kolody, and J. R Valle. 1987. Migration and mental health: An empirical test of depression risk factors among immigrant Mexican women. *International Migration Review* 21, 512-29.
- Zhang, J. and M. Verhoef. 2002. Illness management strategies among Chinese immigrants living with arthritis. *Social Science and Medicine* 55, 1795-1802.

No.	Author(s)	Title	Date
03-01	David Ley	Offsetting Immigration and Domestic Migration I Gateway Cities: Canadian and Australian Reflections on an 'American Dilemma'	01/03
03-02	Don DeVoretz and Kangqing Zhang	Citizenship, Passports and the Brain Exchange Triangle	01/03
03-03	Johanna L. Waters and Sin Yih Teo	Social and Cultural Impacts of Immigration: An Examination of the Concept of 'Social Cohesion' with Implications for British Columbia	01/03
03-04	June Beynon, Roumiana Ilieva, and Marelá Dichupa	"Do you know your language?" How Teachers of Punjabi and Chinese Ancestries Construct their Family Languages in their Personal and Professional Lives	01/03
03-05	Daniel Hiebert, Jock Collins, and Paul Spoonley	Uneven Globalization: Neoliberal Regimes, Immigration, and Multiculturalism in Australia, Canada, and New Zealand	02/03
03-06	Daniel Hiebert	Are Immigrants Welcome? Introducing the Vancouver Community Studies Survey	03/03
03-07	Yan Shi	The Impact of Canada's Immigration Act on Chinese Independent Immigrants	04/03
03-08	Roger Andersson	Settlement Dispersal of Immigrants and Refugees in Europe: Policy and Outcomes	03/03
03-09	Daniel Hiebert and Ravi Pendakur	Who's Cooking? The Changing Ethnic Division of Labour in Canada, 1971-1996	03/03
03-10	Serviy Pivnenko and Don DeVoretz	Economic Performance of Ukrainian Immigrants in Canada and the United States	03/03
03-11	Don J. DeVoretz, Sergiy Pivnenko, Diane Coulombe	The Immigrant Triangle: Québec, Canada and the Rest of the World	05/03
03-12	David W. Edgington, Michael A. Goldberg, and Thomas A. Hutton	The Hong Kong Chinese in Vancouver	04/03
03-13	Margaret Walton-Roberts and Geraldine Pratt	Mobile Modernities: One South Asian Family Negotiates Immigration, Gender and Class	09/03
03-14	Leonie Sandercock	Rethinking Multiculturalism for the 21 st Century	10/03
03-15	Daniel Hiebert and David Ley	Characteristics of Immigrant Transnationalism in Vancouver	10/03
03-16	Sin Yih Teo	Imagining Canada: The Cultural Logics of Migration Amongst PRC Immigrants	10/03
03-17	Daniel Hiebert, Lisa Oliver and Brian Klinkenberg	Immigration and Greater Vancouver: A 2001 Census Atlas (Online format only)	10/03
03-18	Geraldine Pratt (in collaboration with The Philippine Women Centre)	From Migrant to Immigrant: Domestic Workers Settle in Vancouver, Canada	11/03

03-19	Paul Spoonley	The Labour Market Incorporation of Immigrants in Post-Welfare New Zealand	11/03
03-20	Leonie Sandercock	Integrating Immigrants: The Challenge for Cities, City Governments, and the City-Building Professions	12/03
04-01	Rosa Sevy and John Torpey	Commemoration, Redress, and Reconciliation in the Integration of Immigrant Communities: The Cases of Japanese-Canadians and Japanese-Americans	02/04
04-02	Don DeVoretz and Sergiy Pivnenko	Immigrant Public Finance Transfers: A Comparative Analysis by City	02/04
04-03	Margaret Walton-Roberts	Regional Immigration and Dispersal: Lessons from Small- and Medium-sized Urban Centres in British Columbia	02/04
04-04	Don J. DeVoretz, Sergiy Pivnenko, and Morton Beiser	The Economic Experiences of Refugees in Canada	02/04
04-05	Isabel Dyck	Immigration, Place and Health: South Asian Women's Accounts of Health, Illness and Everyday Life	02/04
04-06	Kathy Sherrell, Jennifer Hyndman and Fisnik Preniqi	Sharing the Wealth, Spreading the "Burden"? The Settlement of Kosovar Refugees in Smaller B.C. Cities	02/04
04-07	Nicolas Marceau and Steeve Mongrain	Interjurisdictional Competition in Law Enforcement	03/04
04-08	Shibao Guo	Responding to the Changing Needs of the Chinese Community in Vancouver: The Contribution of SUCCESS (1973-1998)	04/04
04-09	Amanda Aizlewood and Ravi Pendakur	Ethnicity and Social Capital in Canada	04/04
04-10	Kathy Sherrell and Jennifer Hyndman	Global Minds, Local Bodies: Kosovar Transnational Connections Beyond British Columbia	05/04
04-11	Krishna Pendakur and Ravi Pendakur	Colour my World: Has the Minority-Majority Earnings Gap Changed over Time?	05/04
04-12	Leonie Sandercock with Leslie Dickout and Ranja Winkler	The Quest for an Inclusive City: An Exploration of Sri Lankan Tamil Experience of Integration in Toronto and Vancouver	05/04
04-13	Don DeVoretz	Immigration Policy: Methods of Economic Assessment	06/04
04-14	Min-Jung Kwak	An Exploration of the Korean-Canadian Community in Vancouver	07/04
04-15	Daniel Hiebert and Min-Jung Kwak	Transnational Economies of Export Education	07/04
04-16	Harald Bauder	Attitudes Towards Work: Ethnic Minorities and Immigrant Groups in Vancouver	07/04
04-17	Leslie Dickout	The Quest to Negotiate Equitable Civic Engagement: Response of Toronto's Sri Lankan Tamil Community to Social Development Planning in Canada's Largest Multicultural Metropolis	08/04

For information on papers previous to 2003, please see our Website

<http://www.riim.metropolis.net/research/policy>

Back issues of working papers are available for \$5 from

Vancouver Centre of Excellence: Immigration, WMX4653, Simon Fraser University, 8888 University Drive, Burnaby, B.C, Canada V5A 1S6. Tel: (604) 291-4575 Fax: (604) 291-5336

E-mail: riim@sfu.ca

<http://www.riim.metropolis.net/>