

Hidden homelessness: An indicator-based approach for examining the geographies of recent immigrants at-risk of homelessness in Greater Vancouver

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While homelessness is a growing problem in Greater Vancouver, immigrants are not yet a visible part of the region's homeless. The over-representation of immigrants among the population considered at-risk suggests that immigrant homelessness remains hidden. Using census-based housing indicators, we examine the geographies of immigrants at-risk of homelessness to discern where 'hidden' homelessness might be occurring. Findings indicate that: spatial concentrations of recent immigrants at-risk of homelessness are found in inner suburban locations; in these at-risk areas the vast majority of immigrants are recent arrivals; and recent immigrants are disproportionately excluded from at-risk estimates because they are significantly over-represented among households that have shelter costs that exceed their incomes (which are excluded by the indicator). These conclusions are reached through analysis at the regional and sub-regional scale, which revealed broad trends and patterns, and a second small-area (neighbourhood) scale analysis, a means of better documenting the highly-localized geography of low-cost rental housing, revealing fine-grained patterns of social difference, that in Greater Vancouver identify areas where 'hidden' homelessness may be present.

Keywords: Housing need, homelessness, immigration and housing, GIS, Greater Vancouver, Canada

Introduction

Homelessness in Greater Vancouver is an increasingly visible problem. A recent count revealed that homelessness in the region nearly doubled from 1121 to 2174 persons from 2002 to 2005 (Goldberg et al., 2005). The report also revealed an interesting disjuncture: the ethnic profile of homelessness differs significantly from that of the region as a whole. Aboriginals stand-out among the 'street' and 'sheltered' homeless population as significantly over-represented (30% of homeless population, while only 2% of the overall population), a condition elab-

orated upon by Cardinal in this issue (Cardinal, 2006). Only 8% of those enumerated identified themselves as a member of an ethnic group not Caucasian (includes European origin), Aboriginal, or "Canadian". In contrast, the 2001 census indicates that visible minorities and immigrants represent 36.9% and 37.5% of Greater Vancouver's population, respectively. As more than two-thirds of immigrants in Greater Vancouver are members of a visible minority ethnic group¹ their apparent

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¹Immigrant status and ethnicity are not directly linked, but the 2001 census indicates that over two-thirds of immigrants in Greater Vancouver are also visible minorities – and this number increases among those more recently arrived.

absence among the 'street' and 'sheltered' homeless population is surprising. Immigrants comprise a significant proportion of the region's at-risk population (Woodward et al., 2002) and homelessness among new immigrants, especially refugees, is known to be a problem (Hyndman and Friesen, 2002).

Using focus groups comprised of immigrants and refugees, Mattu (2002, p. 35) revealed that "they [immigrants and refugees] are living in overcrowded, unaffordable, substandard, 'dirty', unpleasant, and poorly maintained accommodations". This is consistent with findings from other studies on immigrant (and refugee) housing experiences in Greater Vancouver (see Chan et al., 2005; Mirafteb, 2000). These studies employed research methods, such as focus groups, interviews and surveys, that are apt for identifying the broad array of housing issues faced by immigrants and refugees, while also providing access to visceral accounts of the housing conditions and living situations of research participants, offering detailed information not available in more extensive secondary datasets, like censuses. However, these research methods typically offer a limited spatial perspective, and cautious guidance as to the overall extent of the problems identified. Nonetheless, these studies consistently note that a lack of affordable housing, along with the increasingly low-incomes earned by many new immigrants or low social assistance rates provided to refugees, converge to make accessing acceptable housing difficult. Unaffordable, overcrowded, and/or substandard housing situations—stemming from a lack of affordable housing—are consistent with definitions of being at-risk of homelessness. Structural causes of the latter (including lack of affordable housing and income disparity) are common themes in housing need and homelessness research (see Eberle et al., 2001; Forrest, 1999; Hulchanski and Shapcott, 2004; Wolch et al., 1988).

Murdie (2004) notes that despite an awareness of the issues facing new immigrants (i.e. lack of affordable housing, low vacancy rates, and rising rates of low income), relatively little is known (in a systematic way) about immigrants and housing affordability in Canada, especially outside of Toronto. Murdie uses the *core housing need model*, developed by Canada Mortgage and Housing Corporation (CMHC) to measure housing need in Canada, to illustrate and situate immigrant housing conditions in the broader national context, as well as to provide city-wide numbers for a few metropolitan areas. Core housing need is a highly operational and versatile census-based indicator. A version of the core housing need model is used by the Greater Vancouver Regional District (GVRD) as an indicator to measure and profile the region's population at-risk of homelessness (see Woodward et al., 2002).

In this paper, we aim to extend the use of the core housing need indicator by illustrating how analysis of neighbourhood level data can be balanced with a de-

gree of social specificity to reveal greater insight into homelessness amongst immigrants. Chan et al. (2005, p. x) describes the initial housing experience of refugees as "typically in the cheapest accommodations available, in poor residential environments. They cope by sharing rents and crowding. Nearly all continue to be dependent on social assistance and nearly all are in situations of housing stress". They note, however, that immigrants and refugees avoid ending up "on the streets" due to these coping strategies, and characterize the situation as representing 'hidden' homelessness occurring "below notice".

Our approach does not uncritically adopt core housing need as an indicator of housing need or risk of homelessness. Instead we recognize the complexity of identifying acute housing need and spatial dependence, that is, we acknowledge the spatial specificity of the indicator. In describing the development of the core housing need indicator, CMHC (1991) acknowledged that compromises are made when developing a general indicator and that more nuanced measures would be preferred. However, in practice, it is pointed out that the feasibility of data collection plays a significant role in the development of an indicator. It is our contention that as an indicator, core housing need is most effective when careful attention is paid to its fine-scale geographic dimensions. In effect, by accounting for spatial context, core housing need becomes a more reliable indicator. Accounting for spatial location enables the indicator to be used in combination with local understanding and context. Thus, the spatial dimensions of housing need within Greater Vancouver are examined by tenure and immigrant status (broken-down by period of arrival), using geographic information systems (GIS) at the small-area scale (in addition to discussion of the regional and sub-regional numbers), to provide a more focused and specifically spatial understanding of immigrants at-risk of homelessness. First, however, we summarize and interpret contemporary literature on immigration and homelessness in order to set the stage for this approach.

Immigrants and the new landscape of precariousness

Sustained levels of immigration since the early 1990s have reshaped the social geography of Canadian cities, and refocused research and public policy attention on immigration related issues (Hiebert, 2000). Social change in Canada's three largest metropolitan areas—Toronto, Montreal, and Vancouver—is intensified by the degree to which they are the destinations of choice for new immigrants to Canada.²

²The recently conducted Longitudinal Survey of Immigrants to Canada (LSIC) revealed that almost three-quarters of new immigrants settled in Montreal, Vancouver and Toronto – with almost half settling in Toronto alone.

In Greater Vancouver, recently arrived immigrants are a sizeable proportion of the overall population (16.5%).³ Ley and Hiebert (2001) note that immigration policy in Canada has become de facto population policy. Immigration is now viewed as a way to mitigate declining birth-rates, the aging of Canada's population, and future labour shortages, demographic issues that threaten the future viability of many government-run social programs.

Since the 1980s, the economic context in which new immigrants to Canada arrive has changed markedly. Unlike previous post World War II cohorts, contemporary immigrants are impacted by broad economic restructuring, that has produced a 'new poverty' that disproportionately impacts certain segments of the labour force (Bunting et al., 2004; Kazemipur and Halli, 2000a,b). 'New poverty' is closely associated with reduction of the welfare state and parallel downsizing in the private sector. Aside from reduced governmental support for social programs targeted to benefit the least well-off members of society, the decline in well-paying manufacturing jobs and related shifts towards a labour market dominated by either low-skill/low-pay or high-skill/high-pay jobs, has resulted in what Forrest terms "the new landscape of precariousness" (1999).

Commenting on studies investigating the socio-economic performance of immigrants, Kazemipur and Halli (2000a) caution against treating immigrants as a 'homogeneous' group or examining their "average" performance. Their study suggests that income disparity is greater among immigrants than non-immigrants, with the former over-represented at the high and low ends of the income spectrum and under-represented in the middle. Picot (2004) points out during the 1990s, rising rates of low incomes in Canada's largest cities (Montreal, Vancouver, and Toronto), were in large part concentrated among immigrants. This can be explained by the declining economic performance of new immigrants and is represented by the widening gap between the initial earnings of immigrants and those of non-immigrants (Li, 2003). Declining initial earnings help explain diverging economic welfare in the late 1990s, where low-income rates rose among recent immigrants, while falling among non-immigrants (Picot and Hou, 2003).

Explaining rising levels of immigrant poverty is complicated by the diversity of immigrants and their experiences. While immigrants have been linked to spatially concentrated poverty in Canadian cities (Kazemipur and Halli, 1997; Ley and Smith, 1997), concern that this will lead to social exclusion may be overstated. There is limited empirical evidence to date that links immigrants to traditional measures of deprivation (Ley and Smith, 2000; Smith, 2004).

³According to the 2001 census, immigrants who arrived between 1991 and 2001 represented 16.5% of Greater Vancouver's overall population (Immigrants arrived 1996–2001 represented 8.6%).

Additionally, Ley cautions against focusing too narrowly on low individual income levels, as they are often mitigated by higher household incomes (1999). Similarly, the unusual case of business/investor class immigrants (who within Canada disproportionately settle in Greater Vancouver) suggests that care should be exercised with 'official' statistics, as they offer at best a partial view of the immigrant experience (Ley, 2003). Despite declaring mean assets of over a million dollars (Canadian) upon arrival, many business/investor class immigrants have surprisingly low incomes (Ley, 1999), and they confound easy attempts to characterize immigrant housing affordability need, for despite having low incomes, they often own expensive homes in desirable neighbourhoods.

Immigrants to Canada are admitted via three broad entrance classes: economic (business and skilled workers), family, and political (refugees). Applicants in each entrance class are evaluated using different criteria; new immigrants now arrive in Canada possessing considerably different amounts of social and financial capital (Ley, 1999). Some, particularly refugees, arrive with limited financial resources and may experience substandard housing conditions and/or be at-risk of homelessness. However, diversity among immigrants clearly makes it inappropriate to view immigrants or their housing experiences in a singular way (Murdie, 2004; Ray, 1994). That there is no longer a 'typical' or 'average' immigrant (Ley and Hiebert, 2001), needs to be carefully considered when examining at-risk of homelessness amongst immigrants, especially recent immigrants.

Locating risk of homelessness on the housing continuum

"Homelessness is not a sudden event in the lives of most victims. It is more usually the culmination of a long process of economic hardship, isolation, and social dislocation—what we regard as the cycle of homelessness" (Wolch et al., 1988)

Contemporary definitions split homelessness into two broad groups: 'absolute' homelessness, which refers to persons or households literally without physical shelter (i.e., sleeping rough or living in homeless shelters), and 'relative' homelessness, which includes a range of housing situations characterized as being at-risk of homelessness. The influential report "Taking Responsibility for Homelessness: An Action Plan for Toronto" defines the homeless as "those who are 'visible' on the streets or staying in hostels, the 'hidden' homeless who live in illegal or temporary accommodation, and those at imminent risk of becoming homeless" (Golden et al., 1999, p. iii). 'Street' or 'visible' homelessness is an immediate problem, requiring immediate action, but it represents only a portion overall. 'Relative' homelessness, which remains largely out of sight, involves far more people, albeit in a considerably

less acute manner. From a policy perspective, reducing Greater Vancouver's problem in the long-term requires reducing the number of people who are at-risk of becoming homeless (Eberle et al., 2001).

According to Murray (1990, p. 35) "most people at-risk cannot find appropriate housing that is affordable and offers security of tenure". An insufficient supply of affordable low-cost housing results in high rent-to-income ratios among those least well-off and puts them at-risk for economically-induced homelessness (Bunting et al., 2004; Moore and Skaburskis, 2004). Two-thirds of responses from homeless individuals enumerated in Greater Vancouver's recent homeless count cited economic reasons for their being homeless, with lack of income and cost of housing accounting for 44% and 22% of responses, respectively (Goldberg et al., 2005).⁴ Similarly, a CMHC study of "hard to house" people in Toronto noted that while many factors contribute to eventual homelessness, lack of job security and low incomes (from social assistance or employment) are significant factors in housing instability (CMHC, 2003c). Consistent with other studies of those at-risk, they found the precarious financial position of participants left little room for adverse events.

At-risk households may have serious housing issues, but they remain housed for the time being. Murray (1990, p. 19) points out that households in core housing need are at medium-level risk, "that they may, with the slightest deterioration in income or family circumstances, be pushed along the continuum toward its bottom end of no fixed address and no shelter". This is the essence of what is meant by being at-risk. It does not mean (or guarantee) eventual homelessness, only that there exist pre-conditions that might lead to eventual 'literal' homelessness.

Data and methods

Consistent with the approach adopted by Woodward et al. (2002) we use the CMHC indicator in *core housing need and spending at least half of household income on shelter costs* (INALH) to identify the population at-risk of homelessness in Greater Vancouver, except in our study only renters INALH are considered. Renter households are considered to be at greater risk for homelessness—especially if they are already in low-rent housing—than owner households, as they have a more limited ability to reduce their housing costs, and cannot draw on accumulated home equity in times of financial difficulty (Bunting et al., 2004). While our analysis is focused on renters, we acknowledge that homeownership does not eliminate risk of homelessness.

The *core housing need model* was developed by the CMHC to identify Canadian households that are unable to obtain *adequate, suitable, or affordable*

housing without spending at least 30% of their pre-tax household income (CMHC, 1991).⁵ Moving from the 30% *shelter cost-to-income ratio* (STIR) used in the core housing need model, to a 50% threshold, typically reduces the number of households identified by more than half. INALH, therefore, identifies only households experiencing acute housing affordability need. However, the core housing need model (and by extension INALH) may be problematic as an indicator of at-risk of homelessness as not all households are assessed. Households with shelter costs that exceed their income or do not have a positive income, are not considered by the core housing need model, as their STIRs are not deemed interpretable and therefore housing affordability cannot be assessed (CMHC, 2005). This issue is further examined in a subsequent section of the paper.

The spatial dimensions of the population at-risk of homelessness in Greater Vancouver are examined using a custom census cross-tabulation that includes the following data dimensions: CMHC census-based housing need indicators (including core need status and STIRs), immigrant status (by period of arrival), and tenure status. Census cross-tabulations allow researchers to create custom population counts (for areal units) from differing configurations of available data dimensions. This allows, for example, the tabulation of the number of recent immigrant renters in core housing need for an areal unit, rather than having separate counts for persons in core housing need, recent immigrants and renters in an areal unit, which allow only spatial association between the separate counts to be examined.

In order to examine the distribution of housing need within the study area, population counts have been aggregated into sub-regions that conform to those used by the GVRD and employed in Woodward et al. (2002).⁶ *Figure 1* provides the

⁵The Core Housing Need model consists of, *adequacy*: a dwelling should need only regular repairs, or at most minor repairs; *suitability*: based on the National Occupancy Standard (NOS), the number of bedrooms required for a household based on its size and composition; and *affordability*: Shelter cost-to-income ratio must be below 30%. To be considered in core housing need a household must fall below at least one housing need indicator and have insufficient income to access housing meeting all three housing standards. Only households in non-farm, non-reserve, non-band housing with positive income exceeding shelter costs are included in core housing need counts (CMHC, 1991).

⁶The GVRD is the area's regional government. These sub-regions were used to describe the regional patterns of at risk of homelessness in Woodward et al. (2002), which was a report on absolute and relative homelessness in Greater Vancouver prepared for the GVRD. Inner Municipalities—Burnaby, New Westminster and Richmond; South of Fraser (river)—Surrey, Delta, White Rock and Langley (township and city); North Shore—North Vancouver (district and city), West Vancouver, Bowen Island, Lions Bay and western parts of electoral area C; Northeast Sector—Coquitlam, Port Coquitlam, Port Moody, Belcarra, Anmore and the eastern parts of electoral area C; Ridge Meadows—Pitt Meadows and Maple Ridge; Vancouver includes the University Endowment lands (electoral area A).

⁴Multiple responses were possible—44% lack of income; 22% cost of housing.

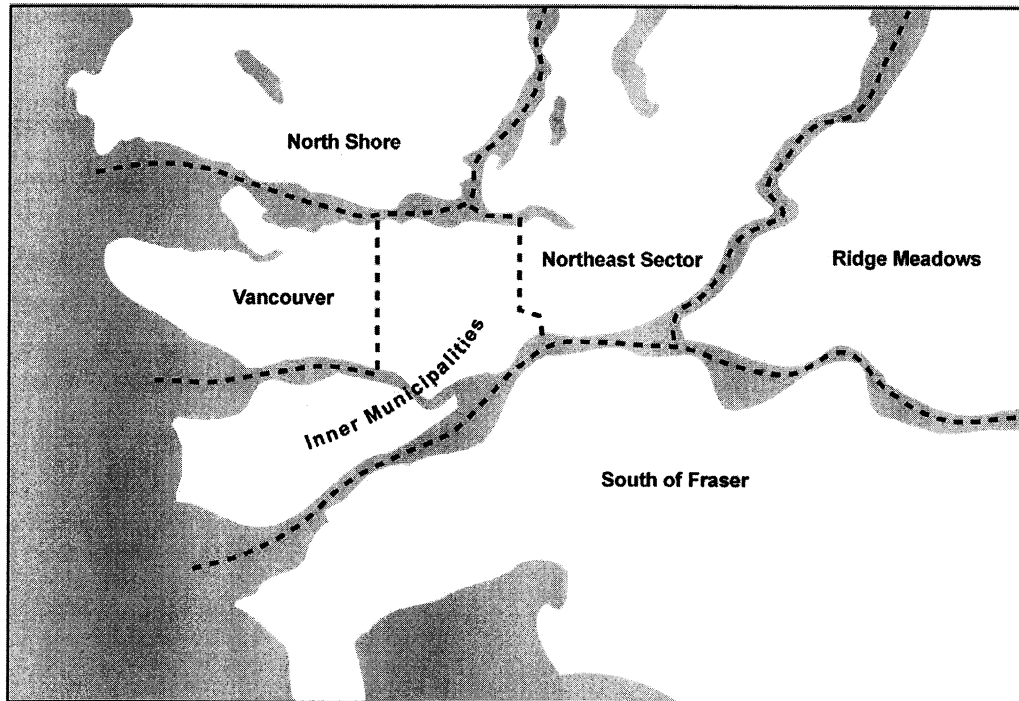


Figure 1 Overview of study area. *Source.* Created by authors.

basic layout of Greater Vancouver and sub-regions. Other studies have employed different strategies for partitioning metropolitan areas for analysis. To measure intra-metropolitan distributions, Ley and Smith (2000) and Bunting et al. (2004) classified areas within Canadian cities using four zones (inner city, inner suburbs, outer suburbs and exurbs) according to the dominant period of construction for dwellings within groupings of contiguous census tracts (except exurbs which were identified by their very low population densities). The sub-regions used in this study represent groupings of municipalities (administrative areas), rather than socioeconomic zones.

Finally, analysis in this paper employed dissemination area (DA) level census data to identify where at-risk of homelessness is concentrated in Greater Vancouver. This requires further explanation along two different lines: how concentration is identified and the choice of areal unit. First, we identify at-risk areas by examining the incidence rates of core housing need for areas, against multiples of the regional rate.⁷ This approach is simple yet effective, and has been employed by other studies to examine the spatial dimensions of deprivation and housing need in large Canadian cities (see Bunting et al., 2004; Smith, 2004). It should be noted that to examine the fine-scale spatial pattern of risk of homelessness analysis shifts our focus slightly from INALH to

core housing need. It is not practical to examine renters INALH at the DA level in isolation. Renters INALH are an exceedingly small group, making up only 3.5% of the city-wide population. At the DA level this translates into very small counts, except when examining multiples many times the city-wide rate, and at this level very few DAs are identified.⁸

Second, as this study employs DA level data, this requires further discussion as most Canadian “neighbourhood” level studies of this nature have used census tract (CT) level data in the past. CTs are intended to represent “neighbourhood-like communities” with populations between 2500 and 8000 people, while DAs are small areas intended to contain between 400 and 700 people. With larger population and household counts, CTs are considered more reliable for statistical analysis as larger count sizes reduce error and uncertainty associated with long-form (20% sample) census data (see Statistics Canada, 2002, p. 294). However, the higher spatial resolution of DAs better matches the geography of rental housing in Greater Vancouver, especially in suburban locations where CTs are too coarsely aggregated to discern highly localized pockets of rental housing.

⁷Multiples of city-wide rates are analogous to location quotients.

⁸The relatively small size of the INALH population, both city-wide and in individual DAs, precludes conducting a reliable analysis using thresholds based on multiples of city-wide rate. In order to insure the confidentiality of census respondents published data is randomly rounded.

Table 1 Incidence of core housing need, INALH by tenure status for immigrants and non-immigrants

Greater Vancouver	Total population	Non-immigrants	Immigrants (by period of arrival)				Aboriginals
			All	Pre-1991	1991-1995	1996-2001	
Total population	1,942,005	1,143,140	724,830	408,625	154,290	161,915	46,500
Owners	1,320,230	788,935	505,410	317,650	108,185	79,575	17,400
Renters	621,825	354,205	219,420	90,975	46,110	82,335	29,150
In core housing need	14.4%	11.3%	18.5%	12.9%	21.4%	29.9%	25.8%
Owners	8.1%	5.5%	12.2%	8.2%	16.8%	21.9%	7.7%
Renters	27.8%	24.3%	33.0%	29.2%	32.1%	37.5%	36.6%
INALH	6.2%	4.8%	8.0%	5.4%	9.2%	13.2%	10.4%
Owners	4.0%	2.6%	6.2%	3.8%	8.5%	12.6%	3.8%
Renters	10.8%	9.8%	12.0%	10.9%	10.9%	13.9%	14.4%

Note. Percentages were calculated using the column total, renter or owner populations. Total population includes non-permanent residents. Data Sources. Statistics Canada, 2001 Census, J3537R and J4161 (includes CMHC housing indicators and data).

At-risk of homelessness: our regional view

Using metropolitan area totals, we begin by identifying why a specific focus on recent immigrants is both necessary and appropriate. The answer is threefold. First, recent immigrants (those who arrived 1996-2001) are a sizable group in Greater Vancouver, representing 8.6% of the area's population. Second, the 2001 census revealed that households with a recent immigrant primary household maintainer (PHM) have a very high incidence of low income, which at 51.5%, is 2.7 times that of non-immigrant households.⁹ Third, immigrant households are on average larger than those of non-immigrants (CMHC, 1996, 2003b, 2004). The combination of comparatively low incomes and the need for larger apartments (which are more expensive and in short supply) has been cited as a barrier facing immigrants when accessing acceptable housing (Murdie, 2004). In highlighting recent immigrants as a group at increased risk of homelessness, we acknowledge, along with Cardinal, that they are not the only at-risk group (Cardinal, 2006).

Table 1 provides a regional perspective on housing need and risk of homelessness in Greater Vancouver. In 2001, the population in households INALH was 120,325 (or 6.2% of the population). Of this population, only 67,105 were renters, thereby reducing the population considered at-risk of homelessness in this analysis to 3.5% of the region's population. However, risk of homelessness is not evenly distributed between owners and renters. Examining the renter population in isolation reveals a much higher internal incidence of INALH (approximately 1 in 10). Examining rates of core housing need—a more moderate indicator of risk—results in much higher rates, but a similar pattern (see Table 1). The gap in rates between owners and renters is not surprising and is consistent with what has been observed in terms of the socioeconomic disparity between the two groups in Canada

(see Hulchanski, 2004). However, examining incidences rates of core housing need using the overall population (even when separated by tenure) obscures the exceptionally high incidence rates of core housing need among recent immigrant renters (37.5%) and Aboriginal renters (36.6%).¹⁰ Households in these two groups were specifically identified as “at high risk of housing need” in Engeland et al. (2005), along with lone-parent households and people who live alone. It should be noted that in focusing on risk of homelessness amongst recent immigrants, the population has been divided based on immigrant status (with immigrants further subdivided by period of arrival). This illustrates differences in incidence between the immigrant and non-immigrant populations, and allows the increased risk facing new immigrants to be highlighted. This approach, however, does not address differences in risk that are not associated with immigrant status, such as demographic (age and gender) or socioeconomic (i.e., education or employment) characteristics, or household/family type.

At-risk geographies: locating risk of homelessness within the region

To detail the intraurban spatial dimensions of the population at-risk of homelessness in Greater Vancouver, we start by examining the broad contours of housing need across the region. Table 2 reveals the ‘within group’ distribution of immigrant and non-immigrant renters by GVRD sub-region. This provides the ability to discern the broad differences in the spatial distribution of between immigrant and non-immigrant renters (overall, or specifically for those in core need or INALH). From this broad

⁹Analysis by authors of Metropolis core data GO0528 Table 2 (Statistics Canada, Census 2001).

¹⁰Aboriginals refer to persons in Aboriginal households. The 2001 Census definition for Aboriginal households: any family household in which at least one spouse, common law partner, or lone parent self-identified as Aboriginal, or at least 50% of household members self-identified as Aboriginal; or any non-family household in which at least 50% of the household members self-identified as Aboriginal (see Statistics Canada, 2002).

Table 2 Distribution of immigrant and non-immigrant renters in Greater Vancouver

	All	Non-immigrants	Immigrants (by period of arrival)			
			All	Pre-1991	1991-1995	1996-2001
<i>All Renters</i>						
GVRD total	621,825	354,205	219,425	90,980	46,105	82,340
Vancouver	40.1%	38.1%	42.3%	46.5%	42.5%	37.5%
Inner Municipalities	22.3%	19.8%	26.5%	22.6%	25.7%	31.3%
South of Fraser	20.9%	23.6%	16.9%	17.0%	18.5%	15.8%
Northeast Sector	7.2%	7.9%	6.3%	5.5%	6.0%	7.5%
Ridge Meadows	2.3%	3.3%	0.8%	1.2%	0.7%	0.5%
North Shore	7.1%	7.3%	7.2%	7.2%	6.6%	7.5%
<i>Renters in core housing need</i>						
GVRD total	173,045	86,140	72,310	26,610	14,800	30,900
Vancouver	39.5%	36.8%	41.4%	48.3%	41.8%	35.3%
Inner Municipalities	22.3%	19.0%	27.0%	21.3%	25.0%	32.8%
South of Fraser	22.4%	26.2%	17.8%	18.1%	19.7%	16.6%
Northeast Sector	7.3%	8.3%	6.5%	4.6%	6.6%	8.0%
Ridge Meadows	2.8%	4.4%	1.0%	1.6%	1.0%	0.6%
North Shore	5.7%	5.3%	6.3%	6.0%	5.9%	6.8%
<i>Renters INALH</i>						
GVRD total	67,105	34,700	27,255	10,805	5,005	11,445
Vancouver	39.8%	39.1%	39.4%	45.7%	39.0%	34.2%
Inner Municipalities	23.0%	19.2%	29.1%	22.4%	30.9%	34.1%
South of Fraser	20.6%	24.7%	14.7%	16.8%	12.8%	13.7%
Northeast Sector	7.0%	7.6%	6.9%	5.8%	7.5%	7.5%
Ridge Meadows	2.7%	3.7%	1.3%	1.8%	1.4%	0.9%
North Shore	6.9%	5.6%	8.6%	7.6%	8.5%	9.7%

Note. Counts in this table were produced by aggregating DA counts. Due to random rounding percentages may not add-up to 100. Population totals (All) include non-permanent residents and persons in Aboriginal Households.

Data Sources. Statistics Canada, 2001 Census, J3537R and J4161 (includes CMHC housing indicators and data).

perspective, the relative distribution of renters in core housing need or INALH roughly matches the overall distribution of renters, with two notable exceptions. One, recent immigrant renters are disproportionately located in the inner municipalities. Two, immigrant renters who arrived pre-1991 are more centralized than renters in general, with a notably higher proportion found in the City of Vancouver. In both cases, the distribution of core housing need and INALH closely echoes each group's overall distribution of renters by GVRD sub-region.

Moving away from a broader spatial perspective, attention is shifted to examining the fine-scale spatial variations in risk of homelessness across Greater Vancouver. To illustrate where risk of homelessness is concentrated in Greater Vancouver, *Figure 2* identifies (and maps) DAs where the incidence of renters in core housing need is at least twice the regional rate. This criterion identified 509 DAs that contained 82,540 renters in core housing need, with 29,930 of them INALH. To put this in context, the DAs identified contain 47.7% of all renters in core housing need (and 44.6% of all renters INALH) while only containing 15.1% of the region's overall population. In order to more clearly illustrate the differences between the spatial distribution of the overall population at-risk of homelessness and that of recent immigrants, *Figure 3* extends the criteria to include only DAs where a minimum of 50 recent immigrant renters in core need are present. *Figure 3*

identifies 123 DAs that contain 10,940 recent immigrant renters in core housing need, with 3700 of them INALH; approximately one-third of their respective regional totals in just 3.8% of Greater Vancouver's DAs.

Spatially, there is clear clustering evident among the DAs with the largest populations of renters in core housing need, but in combination *Figures 2* and *3* reveal a discernable difference in concentration of recent immigrants at-risk. It is clear from *Figure 3* that recent immigrant renters in core housing need are a sizeable presence in very specific locations, and only a slight presence in others. Specifically, the relative lack of at-risk recent immigrant presence in the areas immediately east of the downtown core (the Downtown Eastside and immediately adjacent areas) is clearly evident. More important, *Figure 3* highlights the importance of the inner suburban areas. In the inner municipalities, there are four areas, clearly identified in *Figure 3*, that are associated with recent immigrant renters in core housing need: Metrotown, Edmonds, Burquitlam, and Richmond Centre.

Figure 4 maps areas where concentrations of low-income and recent immigrants intersect. The DAs identified have low income rates of at least 40% and recent immigrant populations at least twice the city-wide rate of 8.6%. This criterion identified 111 of 3255 DAs or 3.4%. In the DAs identified, recent immigrants comprised on average 30% of the

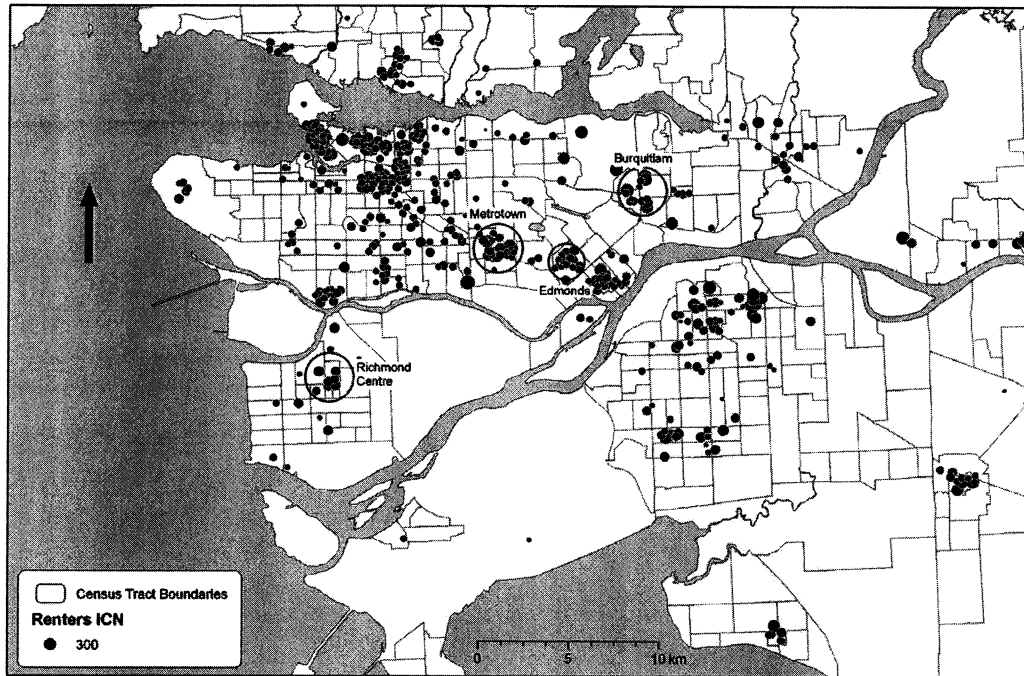


Figure 2 Spatially concentrated renters in core housing need. *Notes.* DAs are mapped if they have at least twice the city-rate rate for renters core need (17.8%). *Data Sources.* Statistics Canada, Census 2001, J4161 (includes CMHC housing indicators and data).

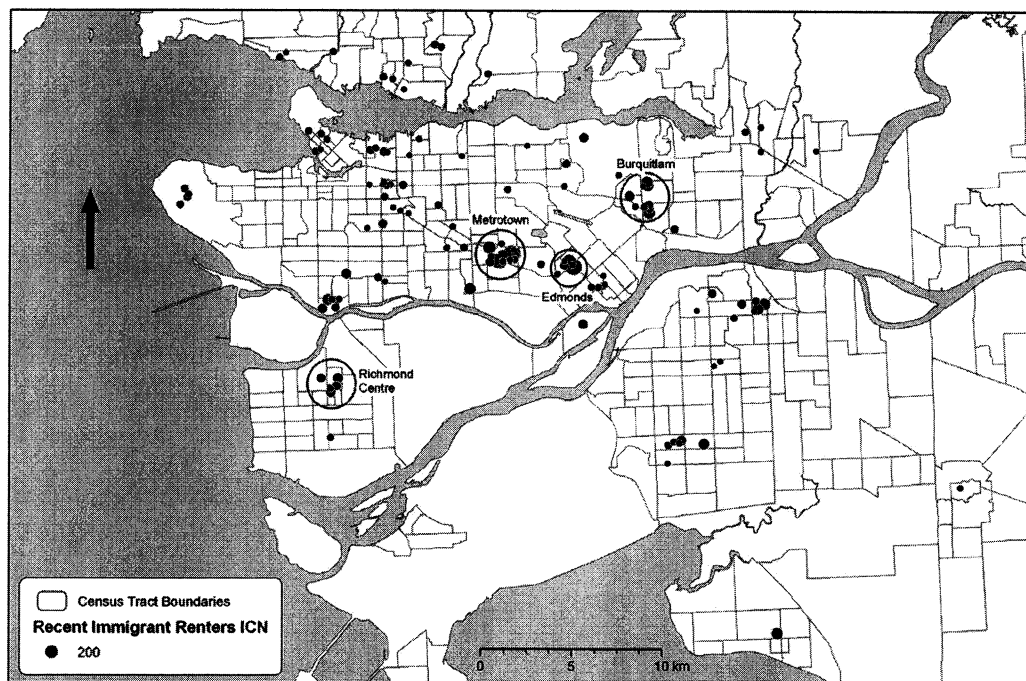


Figure 3 Spatially concentrated recent immigrant renters in core housing need. *Notes.* DAs identified where they contain at least 50 recent immigrant renters in core housing need and have at least twice the city-rate rate for renters core need (17.8%). *Data Sources.* Statistics Canada, Census 2001, J3537R and J4161 (includes CMHC housing indicators and data).

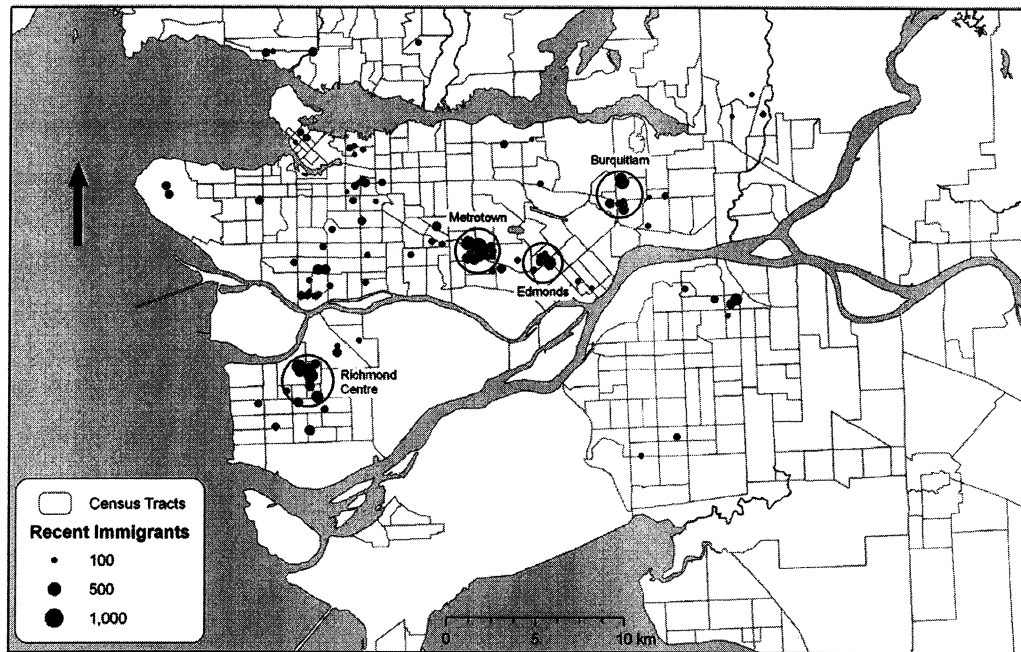


Figure 4 Spatially concentrated recent immigrants and low income. *Notes.* DAs are mapped using proportional circles if their low income rate is 40% or more and the % recent immigrant is twice the CMA proportion of 8.6%. *Data Source.* Statistics Canada, Census 2001, Electronic Profile Data.

population and the average incidence of low income was 49.4%.¹¹ To put this in context, several Canadian studies interested in the relationship between immigrants and neighbourhood poverty consider census tracts with rates of low income 40% or higher to be extreme poverty neighbourhoods (Kazemipur and Halli, 1997; Ley and Smith, 1997). Together, *Figures 3 and 4* clearly illustrate that concentrations of low income and core housing need associated with recent immigrants tend to coincide in very specific areas of Greater Vancouver.

Examining the geographies

The strong relationship between low income and core housing need makes *Figures 3 and 4* excellent starting points for examining the geography of recent immigrants at-risk of homelessness. The most significant concentrations of core housing associated with recent immigrants are found in two inner-suburban communities, Burnaby and Richmond (although one cluster straddles the Burnaby-Coquitlam border mostly on the Coquitlam side). This is consistent with other Canadian studies that have noted the suburbanization of poverty and immigrants. Examining land-use data and remotely sensed imagery reveals that the most significant spatial concentrations of recent immigrants and low in-

come in Greater Vancouver are associated with areas where low-rent apartments are clustered. Also of note is the impact of public transit infrastructure. The most significant concentrations identified in *Figures 3 and 4* are located in areas well served by public transit, and with the exception of the DAs identified in Richmond, are located along the SkyTrain route.¹²

A local understanding of the rental housing market in Greater Vancouver helps explain this pattern. Low-cost market rental housing largely exists in two forms: low-rise apartments and secondary (basement) suites. The geography of these two forms of low-cost rental housing could not be more different. Low-rise rental apartments tend to be clustered in localized pockets throughout the city, particularly in the suburban areas, and are strongly associated with relatively high rates of low income. Basement suites on the other hand are dispersed throughout the city and their occupants' socioeconomic characteristics are largely averaged-out in areal census data by the (usually) more affluent upstairs (and surrounding area) owner households. Studies examining

¹¹Low-income rates published for DAs in electronic profile data refer to persons in low income households.

¹²The SkyTrain is an elevated rapid transit system (an above ground subway system). At present it comprises of two lines, the original (main) line that runs from the downtown core diagonally south-east through East Vancouver, South Burnaby and New Westminster to North Surrey, and another splits off in New Westminster and runs east-west through the northern part of Burnaby and east-side of Vancouver connecting back with the main-line before entering the downtown core.

Table 3 Renters in core housing need and INALH by DA concentration

Greater Vancouver	All DAs	Location Quotients (multiples of the city-wide rate) ^a				
		Less than 1.0	1.0–1.49	1.5–1.99	2.0–2.99	3.0 or more
Number of DAs	3215	63.0%	12.5%	8.7%	9.1%	6.7%
<i>Renters in core housing need</i>						
All-in core need	173,045	20.9%	16.0%	15.4%	21.2%	26.5%
Immigrated pre-1991	26,610	19.5%	15.3%	15.1%	23.1%	27.0%
Immigrated 1991–1995	14,800	18.9%	18.3%	18.7%	22.6%	21.6%
Immigrated 1996–2001	30,900	17.2%	15.6%	14.8%	21.5%	30.9%
Non-immigrants	86,140	24.3%	16.5%	15.3%	20.3%	23.6%
<i>Renters INALH</i>						
All-INALH	67,105	24.1%	16.5%	14.8%	20.8%	23.8%
Immigrated pre-1991	10,805	23.0%	15.6%	14.9%	23.1%	23.5%
Immigrated 1991–1995	5,005	23.8%	22.0%	16.7%	20.5%	16.9%
Immigrated 1996–2001	11,445	21.3%	14.7%	15.0%	22.4%	26.6%
Non-Immigrants	34,700	26.5%	16.5%	15.3%	19.8%	21.8%

Data Sources. Statistics Canada, 2001 Census, J3537R & J4161 (includes CMHC housing indicators and data).

^a*Note.* DAs are classified by their concentration (location quotient) of renters in core housing need relative to the city-wide rate for all renters (8.9%). Core need and INALH Totals include non-permanent residents and persons in Aboriginal households.

the housing conditions of immigrants and refugees in Greater Vancouver have noted the role of basement suites as a low-cost, albeit often substandard, supply of housing (Chan et al., 2005; Mattu, 2002; MirafTAB, 2000), but relatively little is formally known about them.

To examine the relative role of geographic concentration (or conversely dispersion) *Table 3* shows immigrant and non-immigrant renters in core need (and INALH), based on their presence in DAs classified by multiples of the regional rate. Concentration of renters in core housing need is revealed by the degree to which they are found in relatively few DAs with high rates of core housing need. *Table 3* indicates that almost half of renters in core need live in DAs that have rates of core need twice the city-wide rate (for renters). It is note-worthy that there are only slight divergences in the pattern among the sub-groups, although recent immigrants are more concentrated than the other sub-groups in areas where core housing need is more than 3.0 times the city-wide rate. To complicate interpretation, the table also reveals that a sizable minority of renters in core need (and INALH) live in DAs with relatively low incidence rates (less than 1.5 times the city-wide rate).

This dual pattern—simultaneous concentration and dispersion—in the spatial distribution of those at-risk of homelessness should give pause to policy-makers. Focusing spatially-situated services (and policy) on at-risk or ‘problem’ areas would leave a sizable portion the population at-risk unaddressed. Worse, those at-risk, but geographically dispersed in basement suites, are located in areas where the rest of the population may be otherwise well-housed. This may develop into a form of double-jeopardy, where serious housing need (including risk of homelessness) is ‘hidden’ from view and ignored in public policy designed to address housing need.

However, the presence of areas where recent immigrants in housing need are concentrated in conjunction with high levels of poverty raises the possibility of social dislocation and exclusion, as described in American urban underclass studies (see Clark, 1998; Hughes, 1990; Wilson, 1987).

Who gets counted: recent immigrants and STIRs 100% or more

Recent results from the Longitudinal Survey of Immigrants to Canada (LSIC) pertaining to the housing and financial situations of new immigrants suggest the exclusion of households without positive income that exceed shelter costs might impact recent immigrants as a category for analysis. First wave results (data collected from immigrants after 6 months in Canada) reveal 13% of immigrants had STIRs 100% or more and that 14% of immigrants reported no family income (Statistics Canada, 2005). This echoes data used for analysis in this paper. Recent immigrants are over-represented among the population in households with STIRs 100% or more (26.6% of STIRs 100% or more, but only 8.5% of the total population). Put another way, 15.0% of recent immigrants are excluded from possible identification in the population at-risk of homelessness in GVRD research and policy reports that use INALH because they have STIRs 100% or more.

STIRs 100% or higher (or reporting no income) may not indicate dire living conditions. They may, for example, describe an immigrant family with sufficient assets to buy a comfortable home, but where the chief income earner is living and working offshore. However, this explanation likely accounts for only a small portion of immigrants excluded. It is more likely that STIRs provided in census datasets inflate the number of recent immigrants excluded from assessment by the core housing need model

by virtue of how they are calculated. Census respondents are asked to provide information on their previous year's income and their monthly shelter costs. The household STIR is calculated by dividing monthly shelter costs by monthly income (total income divided by 12) multiplied by 100 to provide a percentage (Statistics Canada, 2002). Clearly, this is extremely problematic for newly arrived immigrants, as the STIR ratio for many would be the product of current monthly shelter costs divided by a monthly income derived from less than a full year's earnings.¹³

Not all recent immigrant renters with STIRs 100% or more are in housing need or at-risk of homelessness, but it is worth noting that the data analyzed for this paper reveal that of the 16.3% that have STIRs 100% or more, over half are below more than one CMHC housing need indicator. This is clearly problematic, as it suggests that many recent immigrants are excluded from consideration by the core housing need, even though they are experiencing housing need. It is not clear how to rectify this gap, but the problem highlights the difficulties encountered when variables are derived using immigrant income, and suggests that additional measures may need to be included to properly assess risk of homelessness among immigrants (especially those most recently arrived).

Conclusion

Contrary to what one might think walking on many downtown Vancouver streets, homelessness can be extremely difficult to find. All forms of homelessness are difficult to measure and remedy. Among immigrants and refugees, homelessness may be expressed in ways other than presence among the 'street' or 'sheltered' homeless population. For immigrants and refugees, homelessness more often takes the form of 'hidden' homelessness that is characterized by involuntary 'doubling-up' or sharing housing accommodation, while in other cases it is revealed by unsustainable rent burdens (Chan et al., 2005; Hyndman and Friesen, 2002; Mattu, 2002). The common thread is a precarious housing situation that ultimately translates into increased risk of homelessness.

There is no precise way to identify and map 'hidden' homelessness using secondary datasets like the 2001 Canada census, but the geography of recent immigrant renters in core housing need (or INALH)

¹³ Recent Immigrants are not the only group impacted by the manner in which STIRs are calculated in census data. Anyone reporting less than a complete year's or income not reflective of typical earnings would produce misleading results. What is suggested here is that recent immigrants by virtue of being newly arrived in Canada are disproportionately impacted. Additionally, the CMHC also cautions users to be aware of the temporal mismatch between the income and shelter cost data as it may impact some households (CMHC, 2003a). For example income data in the 2001 census is from 2000, but the shelter cost data is from the month of the census—in this case May 2001.

in Greater Vancouver provides a useful proxy. It also provides additional empirical evidence that contemporary immigrants do not conform to the patterns of settlement described in traditional models. Instead, analysis indicates that spatially concentrated recent immigrants at-risk of homelessness are located in low rent suburban areas and not in low-rent inner-city areas. This analysis, however, ultimately does not adequately describe the spatial dimensions of recent immigrants at-risk of homelessness. Rather than identifying a basic pattern that comes into focus as analysis is conducted at finer spatial resolution, complexity is revealed.

The rental housing market in Greater Vancouver acts to both concentrate and disperse households with the most acute housing need. Renters at-risk of homelessness are generally found either concentrated in areas with low-rise rental apartments or dispersed in areas with low or moderate rates of housing need, possibly explained by the existence of basement suites, an important area for further research. The role of rental housing in concentrating or dispersing poverty has not been thoroughly examined, but clearly impacts studies that rely on analysis of areal census data. Social area analysis using census data is affected by the modifiable areal unit problem (MAUP), which holds that changing the scale and/or configuration of the areal units employed produces different analytical results (see Fotheringham et al., 2000; Openshaw, 1984a,b).

Our findings suggest that studies or policies that focus too narrowly on spatially concentrated poverty, economic disadvantage, or housing need may be ignoring a sizable portion of the population at-risk of homelessness. Examining core housing need as well as INALH (in core housing need and spending at least half of household income on shelter costs) by tenure and immigrant status revealed that using these indicators to identify "economic" risk of homelessness can be problematic for recently arrived immigrants because of the exclusion of households without income or whose shelter costs exceed household income.

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