

# A demographic and health profile of gay and bisexual men in a large Canadian urban setting

S. LOW-BEER,<sup>1</sup> K. BARTHOLOMEW,<sup>2</sup> A. E. WEBER,<sup>1</sup> K. CHAN,<sup>1</sup>  
M. LANDOLT,<sup>2</sup> D. ORAM,<sup>2</sup> A. SCHILDER<sup>1</sup> & R. HOGG<sup>1,3</sup>

<sup>1</sup>British Columbia Centre for Excellence in HIV/AIDS, St. Paul's Hospital. <sup>2</sup>Department of Psychology, Simon Fraser University <sup>3</sup>Department of Health Care and Epidemiology; Faculty of Medicine, University of British Columbia, Vancouver, Canada

---

**Abstract** *The purpose of this study was to provide both a population estimate and a socio-economic and health profile of gay and bisexual men living with HIV/AIDS in a large Canadian urban centre. A random telephone survey was used to determine the number of men in the study area over the age of 20 identifying as gay or bisexual and to characterize their health and socio-economic status. Out of a total of 1,176 completed interviews, 300 males described themselves as gay or bisexual. Projecting this figure on recent census data we estimated the number of men identifying as gay or bisexual in this region of downtown Vancouver, BC, at 5,100. Among these men we found an HIV prevalence rate of 16%, with those who reported a positive serostatus being less likely to be employed full time and more likely to earn less than \$20,000 per year. In terms of clinical characteristics, HIV-positive men had a median CD4 cell count of 397 cells/mm<sup>3</sup> and a median viral load of less than 500 copies/ml. Eighty-three per cent of the HIV-positive respondents were on antiretroviral therapy and the median number of drugs taken by these men was three. In summary, random surveys of populations affected by this epidemic are important for policy makers, clinicians and persons caring for those with HIV/AIDS as they paint a clearer picture of who is being affected and help to identify areas where increased services are needed.*

## Introduction

Previous studies have shown that the HIV/AIDS epidemic is unevenly distributed across Canada. Specifically four provinces (British Columbia, Alberta, Ontario and Quebec) have accounted for 95% of all AIDS cases, the highest cumulative incidence of AIDS being in British Columbia. Within British Columbia, gay and bisexual males have made up approximately 91% of all AIDS cases, which is higher than the estimate for Canada overall (83%) (Remis & Sutherland, 1993; Strathdee *et al.*, 1994). This discrepancy in the distribution of HIV disease is most likely due to the high number of gay and bisexual men living in British Columbia, particularly concentrated in Vancouver's West End. According to 1996 census

---

Address for correspondence: Robert Hogg, Phd, Program Director, Population Health, Division of Epidemiology and Population Health, BC Centre for Excellence in HIV/AIDS, 608–1081 Burrard Street, Vancouver, B.C., V6Z 1Y6 Canada. Tel: (604) 806 8516; Fax: (604) 806 9044; E-mail: bobhogg@hivnet.ubc.ca

data, the population of this area of downtown Vancouver is 41,945, of which approximately 23,795 are men over the age of 20 (Statistics Canada, 1996).

In comparison to other sub-groups at risk of contracting HIV, the characterization of the HIV epidemic in the gay and bisexual population has been well documented. However, the majority of research in this area has been based on subjects who are part of a drug treatment programme, clinical trial or in some way have sought treatment and therefore may represent a skewed section of this population.

In an attempt to negate this potential bias and to get a clearer picture of HIV-positive gay and bisexual men's health and socio-economic status, we conducted a random survey of males in the West End of Vancouver. In addition to collecting sociodemographic and health information we used the survey to estimate the number of gay and bisexual men residing in this area of downtown Vancouver.

## Methods

The proportion of the West End male population over 20 years of age estimated to be gay and bisexual was derived from a random digit dial telephone survey conducted between April 8 and July 11, 1998. Each telephone number was dialed up to ten times. The resultant male respondent was asked, 'How do you describe your sexual orientation? Are you: heterosexual?, gay?, bisexual?, other?' If undecided they were asked, 'Do you tend to be sexually attracted to men, women, or both?' All respondents were also asked to complete a telephone interview that elicited information on age, income, education, employment status and HIV serostatus. Respondents who identified as HIV-positive were asked about their antiretroviral use, plasma viral load and CD4 cell count. All telephone interviews were conducted by trained interviewers and in order to allow respondents to speak as freely as possible, interviewers ensured that the respondent was alone at the time of the interview.

To determine the number of West End male residents over the age of 20 identifying as gay or bisexual the proportion of gay and bisexual respondents was projected on the region's 20 plus male population as estimated by the 1996 census. Monte Carlo methods were used to simulate confidence limits around the population estimate. Simulation trials were performed using the commercial software product Crystal Ball (Decisioneering Inc., Aurora, Colorado, USA). Comparisons of socio-economic characteristics between HIV-positive and HIV-negative gay or bisexual respondents were conducted using Fisher's exact tests. All reported *p* values are two-sided.

## Results

A total of 2,933 individuals were telephoned. Of these, 1,684 people refused to participate or terminated the interview. Thus, the response rate, calculated as the number of interviews completed divided by the number of known eligible respondents, was 42.6%. Out of a total 1,176 completed interviews, 300 males in Vancouver's West End identified as being either gay or bisexual. Based on this figure and 1996 census data, we estimated the gay and bisexual population over 20 years in the West End to be 5,100 (95% CI: 4,700–5,400) at the time of the survey. This represents 25% of the total male population in the West End over 20 years of age. Figure 1 illustrates the percentage distribution of men self-identifying as gay or bisexual in each age group in the West End by five-year age groupings. The age distribution of gay and bisexual men in the West End follows a normal distribution, with the largest proportion of men identifying as gay and bisexual to be in their mid-forties at the time of the survey.

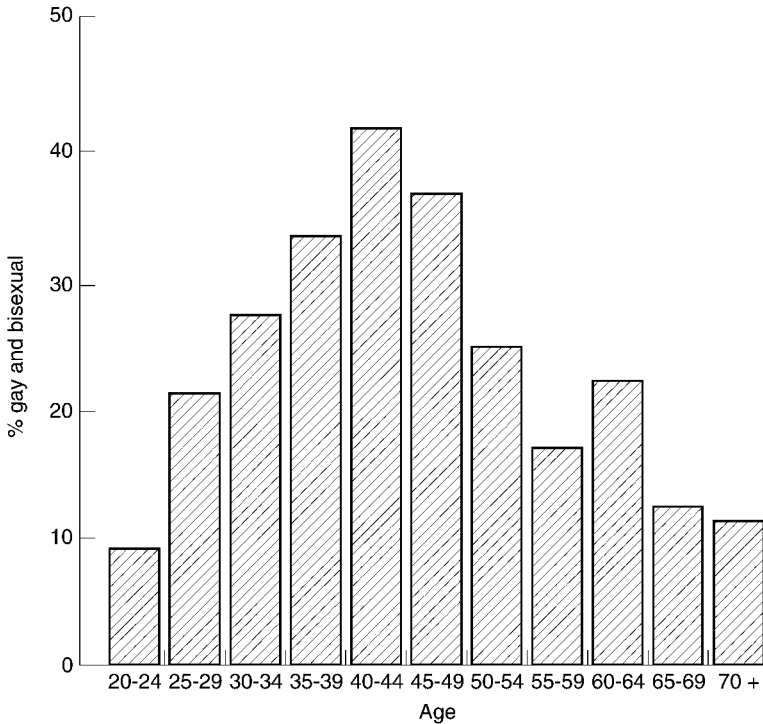


FIG. 1. The percentage of men in each age group who identify as gay or bisexual in Vancouver's West End, by five-year age grouping.

Forty-seven men reported an HIV-positive serostatus resulting in an HIV prevalence of 16%. As presented in Table 1, HIV-positive men were less likely to be employed full time ( $p \leq 0.001$ ) and more likely to have an annual income of  $< \$20,000$  ( $p = 0.009$ ) than HIV-negative men. There were no differences with respect to education and age between the two groups. Table 2 shows that, at the time of survey, HIV-positive men had a median viral load of  $< 500$  copies/ml and median CD4 cell count of 397 cells /  $\text{mm}^3$ . Eighty-three per cent of HIV-positive men were on antiretroviral therapy. The median number of drugs taken by these men was three.

## Discussion

Our results indicate that approximately 5,100 gay and bisexual men over 20 years of age live in Vancouver's West End. According to our analysis, 800 gay and bisexual men in Vancouver's West End are HIV-positive. Compared to HIV-negative gay and bisexual men HIV-positive men were significantly less likely to be employed full time and to have an annual income greater than \$20,000. This is consistent with other studies which have reported that despite tremendous advances in antiretroviral treatments (Hogg *et al.*, 1997), HIV continues to have a strong negative impact on infected individuals' overall quality of life (Franchi & Wenzel, 1998; Gulick, 1997; Lubeck & Fries, 1992).

The relatively low median viral load and high median CD4 cell count observed for this randomly selected group of HIV-positive individuals may be attributable to a vast majority being on combination antiretroviral therapy at the time of the survey. This high percentage

**Table 1.** Comparison of sociodemographic characteristics between gay and bisexual HIV-positive (n = 47) and HIV-negative men (n = 237) in Vancouver's West End

Characteristics	HIV-positive n (%)	HIV-negative n (%)	p
Age			
Median	38	37	0.436
Interquartile range	34–44	32–45	
Education			
≥ 12 years	44 (94)	228 (97)	0.400
< 12 years	3 (6)	8 (3)	
Full-time employment			
Yes	19 (40)	187 (79)	< 0.001
No	28 (60)	50 (21)	
Income			
≥ 20,000	31 (66)	198 (85)	0.009
< 20,000	16 (34)	36 (15)	

(83%) of individuals accessing treatment is likely to be representative of other HIV-positive persons in the West End but may not be generalizable to those living outside this area. This is due to the fact that gay and bisexual men in the West End live in proximity to a large tertiary AIDS Care Centre, St. Paul's Hospital, that is responsible for providing in-hospital and outpatient care. Further it is possible that those men with high viral loads and low CD4 cell counts may be in poor health and require hospitalization. These men would not have been represented in the telephone survey.

Other limitations of this study include that for a number of reasons it cannot be assumed that all respondents revealed their true sexual orientation. In addition, as sampled males had to have a fixed address and telephone number our estimate is most likely low, as it does not include those gay and bisexual men who are living generally unstable lives or who are of a lower socio-economic status. Furthermore, in terms of HIV prevalence, this survey is limited to those men who know their HIV status. Finally, it is of note that the implications of this study may be limited by its small sample size.

In summary, the importance of gaining an accurate estimate and sociodemographic profile of the gay and bisexual population in an area needs to be emphasized. Such information is crucial both for clarifying issues such as the prevalence of HIV, a disease which still predominately affects gay and bisexual men, and for those sociodemographic and health issues common to persons who are part of a minority. Finally, it is of note that this characterization and estimate is a snapshot of a dynamic community. It is probable that, as has been reported elsewhere (Burr *et al.*, 1995; Wood *et al.*, 1999), gay and bisexual men migrate to gay communities in large cities and therefore we expect that this figure has substantially grown since the time of the survey and continues to increase.

**Table 2.** Clinical characteristics of 47 HIV-positive gay and bisexual men in Vancouver's West End at the time of survey

Characteristics	Median	Interquartile range
CD4 cell count (cells × 10 <sup>6</sup> /mm <sup>3</sup> )	397	270–600
Viral load (copies/ml)	< 500	< 500–1,700
Number of anti-HIV drugs	3	2–3

## Acknowledgements

Dr Hogg is funded by the Canadian Institutes of Health Research and the Michael Smith Foundation for Health Research. Dr Bartholomew is supported through the Wayne F. Placek Fund of the American Psychological Foundation.

## References

- BURR, K.F., COSTANZO, G.A., HAYER, M.V., MACNAB, Y.C. & MCKEE, B. (1995). *Mortality and health status in Vancouver: an analysis by neighbourhood areas*. Victoria: BC Division of Vital Statistics.
- FRANGLI, D. & WENZEL, R.P. (1998). Measuring health-related quality of life among patients infected with human immunodeficiency virus. *Clinical Infectious Diseases*, 26, 20–26.
- GULICK, R.M. (1997). Current antiretroviral therapy: an overview. *Quality of Life Research*, 6(6), 471–474.
- HOGG, R.S., O'SHAUGHNESSY, M.V., GATARIC, N., YIP, B., CRAIB, K.J., SCHECHTER, M.T. & MONTANER, J.S. (1997). Decline in deaths from AIDS due to new antiretrovirals [letter]. *The Lancet*, 349(9061), 1294.
- LUBECK, D.P. & FRIES, J.F. (1992). Changes in quality of life among persons with HIV infection. *Quality of Life Research*, 1, 359–366.
- REMIS, R.S. & SUTHERLAND, W.D. (1993). The epidemiology of HIV and AIDS in Canada: current perspectives and future needs. *Canadian Journal of Public Health*, 84(Suppl. 1), 34–38.
- STATISTICS CANADA (1996). *Population census of Canada*.
- STRATHDEE, S.A., SCHECHTER, M.T., HOGG, R. & O'SHAUGHNESSY, M.V. (1994). Current trends in HIV/AIDS epidemiology in British Columbia. *BC Medical Journal*, 36, 98–115.
- WOOD, E., YIP, B., GATARIC, N., O'SHAUGHNESSY, M.V., SCHECHTER, M.T. & HOGG, R.S. (1999). Determinants of geographic mobility among participants in a population-based HIV/AIDS drug treatment program. *Health and Place*, 6, 33–40.

Copyright of AIDS Care is the property of Carfax Publishing Company and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Copyright of AIDS Care is the property of Routledge and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.