1. Introduction

1.1 Background

A recent study published on deaths attributable to tobacco use[1] concluded that smoking continues to be the number one preventable cause of death in all regions of Canada. Yet, at least one in four Canadians aged 15 years and over (or 6.6 million people) still smoke cigarettes daily[2]. British Columbia has a somewhat lower rate than most provinces, with one in five adults smoking cigarettes on a daily basis, but it continues to pay a high price for those living and dying here who have smoked in the past. In British Columbia, $500,000,000 goes directly towards the treatment of health problems caused by tobacco use[3]. The cost is not only felt in dollars but in lives lost: there were 5,800 smoking-related deaths on B.C. during 1996[4]. British Columbia will pay a higher price in the future as the lung cancer rates among women continue to mount at nearly 5% per year, adding to the other 18 known smoking-related illnesses already burdening the medical care system. Unless the recruitment of new smokers among our youth can be stemmed and more smokers can be helped to quit, present rates of tobacco use in B.C. will continue to stretch the resources of our health care system beyond sustainability.

At the same time, it is difficult to develop a comprehensive tobacco control strategy for the province of B.C. with the paucity of data currently available to the Ministry of Health

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[1] Makomaski, J., Illing, E.M. and Kaiserman, M.J. (1995) *Mortality Attributable To Tobacco Use In Canada And Its Regions*, 1991. Canadian Journal of Public Health, 86(4), 257-265.

[2] Health Canada (1994) *Survey on Smoking in Canada, Fact Sheets* for Cycle 1 (August) and Cycle 2 (November), Tobacco Demand Reduction Programs.

[3] Ministry of Health, News Release, June 16, 1997, (1997:124).

[4] Selected Vital Statistics and Health Status Indicators, Annual Report 1996, Division of Vital Statistics, BC, 1997.

and to the Regional Health Boards and Community Health Services Societies. Both current and planned surveillance mechanisms (i.e., usually population health surveys conducted by the Federal government) do not provide sufficient sample sizes for B.C. to assess trends in tobacco use with an adequate degree of sensitivity or accuracy. Better mechanisms for monitoring the prevalence and patterning of tobacco use in B.C., on a recurring basis, are sorely needed to provide statistically reliable estimates for B.C. and its health regions[5].

It is for these reasons that the Ministry of Health and Ministry Responsible for Seniors initiated a province-wide survey on the prevalence of tobacco use. The Ministry contracted the Health and Stoke Foundation of B.C. & Yukon to manage the project, including establishing an expert committee, chaired by Dr. Ken Prkachin, to review bids, questionnaires, and survey findings. The survey results are intended to inform the development of public policy and allow the 18 Regional Health Boards and Community Health Services Societies (RHBs/CHSSs), and voluntary health agencies, to strategically plan for the needs of their own communities.

[5] Peters, L. (1994) The Cost and Prevalence of Tobacco-Related Illness and Changes in Cigarette Smoking Over the Past 25 Years. In L. Green and J. Frankish (eds.), *Recommendations for a B.C. Tobacco Control Strategy: A Review of Research and Experience in Other Jurisdictions*. Prepared by the Institute of Health Promotion Research at the University of British Columbia for the B.C. Ministry of Health (May, 1994).

1.2 Purpose and Objectives

The main purpose of the survey was to accurately estimate the prevalence of tobacco use among the residents of British Columbia aged 12 years and over, as well as identify some of the socio-demographic characteristics of those residents who use tobacco. The survey was intended to serve as a baseline for monitoring tobacco use throughout the province, to facilitate program and policy planning in various regions, and to evaluate programs and policies.

The survey's design and sampling plan was to ensure the reliable estimation of the prevalence of tobacco use within the province, within 4 macro regions, and in each of the 18 Regional Health Boards/Community Health Service Societies (RHBs/CHSSs). The survey was also designed to reliably investigate certain groups of interest – teens, members of the South Asian community, members of the South East Asian community, and smokeless tobacco users.

Secondary objectives of the survey included measuring exposure to environmental tobacco smoke in a variety of settings and, for a random subset of residents, identifying reasons for using or not using tobacco, attitudes towards tobacco, and psychographics.

1.3 Methodology

A telephone survey was administered using a Computer Assisted Telephone Interviewing (CATI) system. A disproportionate stratified random sampling design utilized Random Digit Dialling to randomly select households while the Troldahl Carter method randomly selected respondents within households. Approximately 1,000 interviews were conducted within each of the province's 18 RHBs/CHHSs, as well as over-samples within the South East Asian and South Asian communities, and smokers and users of smokeless tobacco. Two questionnaire versions were implemented – a base questionnaire for all respondents and an advanced questionnaire containing supplementary questions for a smaller subset of respondents.

Margins of error at the 95% confidence interval (p=0.5) on a provincial, regional and RHB/CHHS basis are as follows:

	Sample Size	Margin of Error
Provincial	n=18,000	±0.7%
Regional	n=4,000	±1.5%
RHB/CHHS	n=1,000	±3.1%

For example, if 50% of all respondents for one RHB/CHHS state that they have never smoked cigarettes, then we can be sure, 19 times out of 20, that if the entire population of that RHB/CHHS had been interviewed, the proportion who had never smoked cigarettes would lie be between 46.9% and 53.1%. Previous studies have shown that the prevalence of smoking is 25% for those aged 15 years or more. Based on this proportion (25% - 75% or p=0.25), the margin of error for 1,000 interviews decreases to ±2.7%.

Small base sizes have been marked by a single or double asterisk throughout the report. Base sizes of less than 100 (*) should be interpreted with caution, while very small base sizes of less than 50 (**) should be interpreted with extreme caution.

1.4 Macro Regions

For reporting purposes the 18 RHBs/CHSSs were aggregated into four macro regions – Lower Mainland, Island/Coast, Southern Interior, and Northern. A minimum of four RHBs/CHSSs comprising each macro region permits the same analyses and level of detail within each of the macro regions. The table below lists RHBs/CHSSs included in each macro region as well as population estimates and proportions for those aged 12 and older.

Population Estimates for Ages 12+ by RHB/CHSS[6]

Macro Region	RHB/CHSS	Population	Proportion
LOWER MAINLAND	Fraser Valley	185,135	5.7%
	South Fraser Valley	427,216	13.2%
	Simon Fraser/Burnaby	401,214	12.4%
	North Shore	149,107	4.6%
	Vancouver/Richmond	607,059	18.8%
SOUTHERN INTERIOR	North Okanagan	100,966	3.1%
	South Okanagan Similkameen	188,283	5.8%
	Thompson	107,258	3.3%
	East Kootenay	66,739	2.1%
	West Kootenay-Boundary	67,942	2.1%
ISLAND/COAST	Central Vancouver Island	198,464	6.1%
	Capital	289,237	8.9%
	Coast Garibaldi	61,313	1.9%
	Upper Island-Central Coast	98,032	3.0%
NORTHERN	Northern Interior	103,316	3.2%
	Cariboo	61,621	1.9%
	North West	72,952	2.3%
	Peace Liard	50,677	1.6%

[6] 1996 Estimates using Statistics Canada 1991 Census Data, BC STATS, BC Ministry of Finance and Corporate Relations.

1.5 Principal Variables

Several measures of tobacco usage are utilized frequently throughout this report. When appropriate and feasible, three- to eight-category tobacco use measures are employed. These definitions are those recommended by a 1994 Canadian workshop on tobacco monitoring and surveillance[7]. The important refinement over commonly accepted approaches is the specification of a minimum amount of tobacco use (i.e., 100 or more times) in order to be classified a tobacco user. (See table on next page)

An additional derived variable used in this analysis is *income adequacy* which was developed by the Health Division of Statistics Canada and used in the General Social Survey (1991) and the Canadian Health Promotion Survey (1990). Income adequacy is an indicator of socio-economic status which takes into account both household income and household size. The term adequacy refers to the fact that the amount of income that is adequate depends on the number of people to be supported. This is a more appropriate and sensitive indicator of socio-economic status than would be achieved with just household income information. The five resultant categories are not equally dispersed throughout the general population of B.C. Survey results for the province are shown below.

Income Adequacy	# of Persons in Household					Survey BC
	1	2	3	4	5+	
Lowest	<$10,000	<$10,000	<$10,000	<$10,000	<$19,000	5%
Lower middle	$10 - $19,999	$10 - $19,999	$10 - $29,999	$10 - $29,999	$20 - $29,999	10%
Middle	$20 - $29,999	$20 - $29,999	$30 - $39,999	$30 - $39,999	$30 - $59,999	26%
Upper middle	$30 - $59,999	$30 - $59,999	$40 - $79,999	$40 - $79,999	$60 - $79,999	38%
Highest	≥ $60,000	≥ $60,000	≥ $60,000	≥ $80,000	≥ $80,000	21%

[7] Mills, C., Stephens, T. & Wilkins, K.. (1994) *Summary Report On The Workshop On Data For Monitoring Tobacco Use*. Chronic Diseases in Canada, 15, 105-110.

Current Users

Used tobacco products >100 times & within 30 days prior to the survey

Daily

Used a tobacco product every day in the 30 days prior to the survey

Non-Daily

Used a tobacco product one or more times in the 30 days prior to the survey

Former Users

Used tobacco products >100 times but not within 30 days prior to the survey

Former Daily

Used a tobacco product daily 1 or more years ago

Former Non-Daily

Used a tobacco product on a non-daily basis 1 or more years ago

Recent Former

Used a tobacco product in the past year but have not used in the 30 days prior to the survey

Never Users

Used tobacco products <100 times

Lifetime Abstainers

Smoked less than one whole cigarette or have never tried cigars, pipes or smokeless tobacco

Past Experimenters

Used a tobacco product between 1 & 99 times but not in the 30 days prior to the survey

Beginners

Used a tobacco product between 1 & 99 times and in 30 days prior to the survey