5.2 The Geography of Smoking Behaviours and Policies in BC

While BC has the lowest smoking rates in Canada, smoking behaviour and second-hand or environmental tobacco smoke are still causes and contributors to many key diseases and illnesses in the province. Tobacco is still the greatest preventable cause of death and illness in Canada (Bridge and Turpin, 2004; Ministry of Health Services, 2005). Annually, the Vital Statistics Agency publishes an estimate of the Smoking Attributable Mortality based on a variety of diagnoses related to smoking.

These include:

- Circulatory system diseases, such as hypertension, ischemic heart diseases, cerebrovascular diseases, other forms of heart diseases, and others;
- Cancers, such as cancers of the trachea, lung, pancreas, esophagus, and bladder, among others;
- Respiratory system diseases, such as chronic obstructive pulmonary disease, pneumonia and influenza, and bronchitis and emphysema.

In both 2004 and 2005, the total number of deaths attributable to smoking and its effects was estimated at nearly 6,000 in BC (Vital Statistics, 2005, 2006), out of a total of almost 30,000 deaths occurring in each of those years. In other words, approximately 20% of deaths in BC can be attributed to smoking. On average, it has been estimated that smokers who quit can realize a reversal of the effects fairly quickly after quitting and could gain back up to 4.2 years of life that would otherwise have been lost through the impacts of continued smoking (Bridge and Turpin, 2004).

Not only are current smokers at risk of ill health and premature mortality, but so are non-smokers who inhale other people's exhaled smoke, known as "mainstream" smoke, and/or substances from cigarettes, known as "sidestream" smoke. The latter is likely the more dangerous of the two. Effects can be felt not only by those in the immediate vicinity of a smoker, but also those who may be in neighbouring apartments or housing units in multi-unit buildings. Smoke from one unit can enter a neighbouring unit through a variety of mechanisms, such as neighbouring patio, common ventilation systems, electrical outlets, and cracks and gaps around sinks and countertops (see *www.cleanaircoalitionbc.com*).

A recent report by the US Office of the Surgeon General (2006) has extensively reviewed the health effects of second-hand smoke and concluded that there is no risk-free level of exposure. Children in particular are vulnerable, because their bodies are still developing. There is evidence indicating that babies exposed to second-hand smoke have a much higher probability of dying from sudden infant death syndrome (Foster, Kierans, and Macdonald, 2002), as well as suffering from several ailments related to second-hand smoke.

While many premature deaths result from tobacco smoke, the health care and other costs associated with smoking-related diseases are very high (Select Standing Committee on Health, 2004). Bridge and Turpin (2004) indicate that, in 2002 dollars, smoking cost British Columbians conservatively approximately $525 million annually in medical care costs and more than $900 million in productivity losses related to excess disability of smokers and premature mortality. In addition, substantially more costs are borne directly by BC employers.

In many ways, BC has been a leader over the past 15 years or so in working to reduce smoking rates, both provincially and locally. The Capital Regional District was the first in Canada to enact a municipal bylaw to ensure that public indoor spaces were completely smoke-free 100% of the time. This action was not without considerable controversy and debate (McLintock, 2004). Many have since followed this lead. Smoking was also banned in all government offices in 1990, and many communities passed smoking restriction bylaws through the 1980s (Hollander, Foster, Curtis, and Galloway, 1992). However, the province has lost some of its leadership in the area of no smoking. There is no province-wide legislation that regulates smoking in all public places, although there is a regulation through the Workers' Compensation Board that regulates smoking in the work place, except for hospitality workers who still can work in Designated Smoking Rooms (see *www.cleanaircoalitionbc.com* for a history of this regulation).

In November 2006, the Premier of the province announced that: "By 2008, smoking will be banned in all indoor public places and starting next September smoking will be banned on all school property, public and private, across British Columbia." In March 2007,

the province announced major changes to the Tobacco Sales Act, which will limit both the promotion and sale of tobacco, and ban smoking in public places. The amendments will implement the Premier's November 2006 announcement and ban: smoking in all indoor public spaces; tobacco use in schools and on school grounds; smoking in public doorways, near public doors, windows, and air intakes to protect indoor air quality; and tobacco sales in public hospital and health facilities, public universities and colleges, public athletic and recreational facilities, and all provincial buildings. The amendments will also provide for a ban on the display of tobacco products in all places where tobacco is sold that are accessible to youth under 19. This will include products like lighters and caps with tobacco brands on them and certain other tobacco advertising features.

Between 1985 and 2002, smoking rates in BC declined by 51% in those aged 15 and over (Bridge and Turpin, 2004). Some of the above-noted actions have certainly helped achieve this reduction. However, there is still much that can be done to prevent young people from initiating smoking, and to provide individual smokers with access to assistance to quit smoking altogether. The latter is often not easy because of the very addictive properties of tobacco. There are also other opportunities for role modelling in many venues, such as at the community level in public places, by school districts in schools, by employers in work places, and by individuals in their homes and through their own non-smoking behaviour.

In short, being a non-smoker, living in a non-smoking household, having enforced smoking restrictions in your place of work or school, not allowing smoking while driving, and living in a community that enforces restrictions on smoking in public places are all major wellness assets.

While BC does have relatively low rates of smoking, there are substantial variations throughout the province in a variety of key indicators related to non-smoking wellness assets and behaviours. What follows is the presentation of a total of 38 maps that describe eight key indicators related to these wellness assets for BC's population.

The first three maps present indicators related to healthy public policy to encourage non-smoking behaviours. Generally, healthy public policy is characterized by:

- broad emphasis on a healthy lifestyle and a healthy society;
- concern with ecology, the environment, and social justice;
- holistic approach to health;
- public participation in the health of one's community; and
- integrated and multisectoral approach to health (Hollander et al., 1992).

The first map in this series indicates the depth of smoking restriction policies adopted by the province's school districts. This gives an idea of the leadership being provided by the school boards in this important area of healthy public policy. Policies cover a variety of areas that have smoking bans and restrictions, including school grounds, buses, and buildings.

The next two maps provide data related to the adoption and type of no smoking bylaws introduced by municipalities at the community level. Such bylaws can help set the stage for specific restrictions within communities, and set local standards for non-smoking behaviour in the absence of provincial legislation. BC's first bylaw was enacted in 1968 by the City of Burnaby, but its focus was primarily related to preventing fires caused by careless smoking (Hollander et al., 1992). Throughout the 1980s, more than 40 communities adopted some type of smoking restriction that covered diverse public areas such as elevators, escalators and stairways, school buses and taxis, and public areas of local government offices, to name but a few.

The main grouping of maps in this section, using data from the CCHS, consists of 30 maps and depicts six separate indicators, each having five maps to cover age and gender characteristics of responses. The first of this group looks at the degree to which respondents frequent smoke-free public places, usually in leisure time activities. The next set of five maps provides information on the degree to which respondents are able to work in a smoke-free work environment. This is followed by data on choosing to travel in smoke-free vehicles. The next two groups of maps provide responses to two questions related to smoking restrictions in the home environment, while the final indicator looks at the results related to non-smoking by individuals.

All maps are provided at the HSDA level, with the exception of the map on school district policies which is at the school district level.

Smoking restrictions in school

Smoking restriction policies by school districts are important in that children do not have to endure second-hand smoke at an early age. In addition, restricting smoking sets a positive example for children, provides a role modelling environment, and helps get the message through to children and youth that not smoking is a positive behavioural attribute, or wellness asset.

In 2005, the Ministry of Health commissioned a review of the status of smoking policies in schools to identify opportunities for improvement (McBride, 2005). The survey, based on information from 58 school districts (Nisga'a and Conseil Scolaire Francophone were not included), indicated a large variation in terms of the type of smoking restrictions in place. All school districts had passed policies, except Kootenay-Columbia (School District 20) which relied on the policies provided by two previous school districts that were combined to create the Kootenay-Columbia district.

The map opposite shows the variation in school district smoking restriction policies based on seven different criteria which prohibited smoking in/on: buildings; grounds; district vehicles; other (e.g., vehicles parked on school grounds, all district functions, or sporting events); community use of school property; transportation; and enforcement provisions of policies.

Overall, no school district had implemented policies with all seven of the criteria. Several had policies in place on all restriction criteria but did not have an enforcement policy. In fact, many school districts had not put together a formal policy on enforcement.

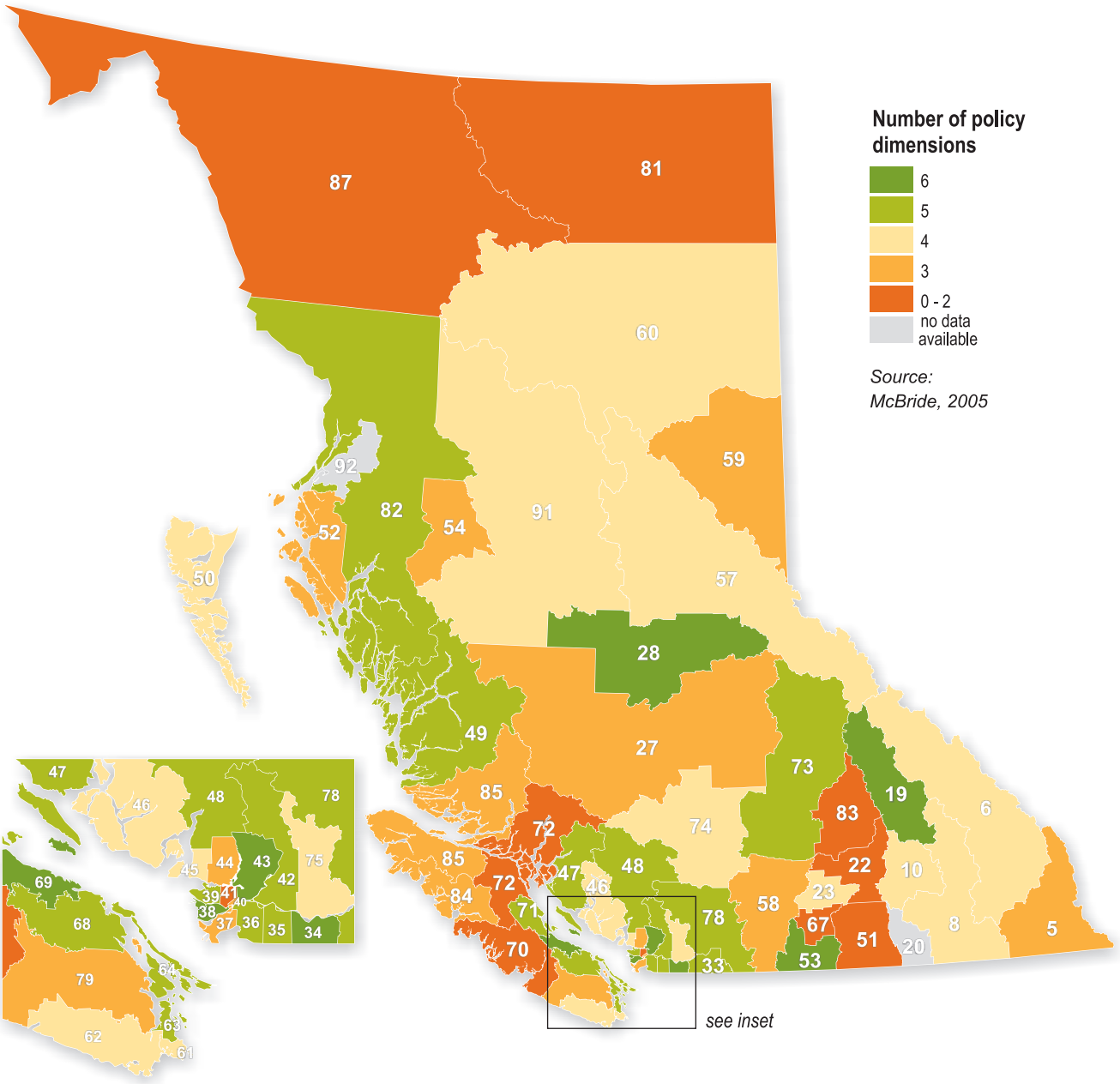
Those with six of the criteria in place in their policies (7 school districts) were scattered around the province, although three were in the lower mainland.

Those with five criteria (15 school districts) tended to be in, or adjacent to, the lower mainland, southern/central Vancouver Island, and central coast/coast mountains. Kamloops/Thompson in the interior was an outlier to this pattern. The school districts with two or less criteria included in policies (9 school districts) tended to cluster in the extreme north and in the southern interior of the province, in addition to parts of Vancouver Island. School District 41 (Burnaby) was something of an outlier in the lower mainland.

The large variety of responses by school districts should disappear in the future based on the Premier's recent announcement on introducing universal smoking restrictions. The key issue, then, will become enforcement.

School District	Number of policy dimensions
019 Revelstoke	6
028 Quesnel	6
034 Abbotsford	6
038 Richmond	6
043 Coquitlam	6
053 Okanagan Similkameen	6
069 Qualicum	6
033 Chilliwack	5
035 Langley	5
036 Surrey	5
039 Vancouver	5
042 Maple Ridge-Pitt Meadows	5
047 Powell River	5
048 Howe Sound	5
049 Central Coast	5
063 Saanich	5
064 Gulf Islands	5
068 Nanaimo-Ladysmith	5
071 Comox Valley	5
073 Kamloops/Thompson	5
078 Fraser-Cascade	5
082 Coast Mountains	5
006 Rocky Mountain	4
008 Kootenay Lake	4
010 Arrow Lakes	4
023 Central Okanagan	4
045 West Vancouver	4
046 Sunshine Coast	4
050 Haida Gwaii/Queen Charlotte	4
057 Prince George	4
060 Peace River North	4
061 Greater Victoria	4
062 Sooke	4
074 Gold Trail	4
075 Mission	4
091 Nechako Lakes	4
005 Southeast Kootenay	3
027 Cariboo-Chilcotin	3
037 Delta	3
040 New Westminster	3
044 North Vancouver	3
052 Prince Rupert	3
054 Bulkley Valley	3
058 Nicola-Similkameen	3
059 Peace River South	3
079 Cowichan Valley	3
084 Vancouver Island West	3
085 Vancouver Island North	3
022 Vernon	2
041 Burnaby	2
067 Okanagan Skaha	2
070 Alberni	2
081 Fort Nelson	2
083 North Okanagan-Shuswap	2
087 Stikine	2
051 Boundary	1
072 Campbell River	1
020 Kootenay-Columbia	N/A
092 Nisga'a	N/A

Smoking restrictions in school



Municipal smoking restriction bylaws

The main purpose for creating no smoking bylaws in public areas is to protect people from the health hazards of second-hand tobacco smoke. The first map opposite shows the percent of the 2005 population, by HSDA, that is covered by some type of municipal restriction on smoking in public places, based on data provided by the Ministry of Health. Major geographical patterns are evident.

All HSDAs have some municipal no smoking bylaws coverage and, in total, more than three-quarters (76.7%) of the province's population lives, works, and plays in municipalities with some restrictions on smoking in public. Over 80% of the population in the urbanized lower mainland and South Vancouver Island live and work in municipalities that have adopted some smoking restrictions in public places. Thompson Cariboo Shuswap in the central interior has between 80% and 60% population coverage, while the northern half of the province has between 60% and 40% coverage, as does Fraser East. By contrast, the southeast part of the province has less than 40% of its population covered.

Not all bylaws are equally stringent, and some have been, or still are, symbolic rather than extensive in nature. Some have been moderated and reduced in smoking restriction coverage, while many have been made more stringent over time.

For several years, the Non-Smokers' Rights Association (NSRA) has monitored the adoption of smoke-free bylaws by municipalities in terms of their rigour and coverage, and has devised a "Gold, Silver, Bronze" system to categorize municipalities with bylaws that reflect "best practices" (NSRA, 2006). These best practices require 100% smoke-free environments in key public areas 100% of the time.

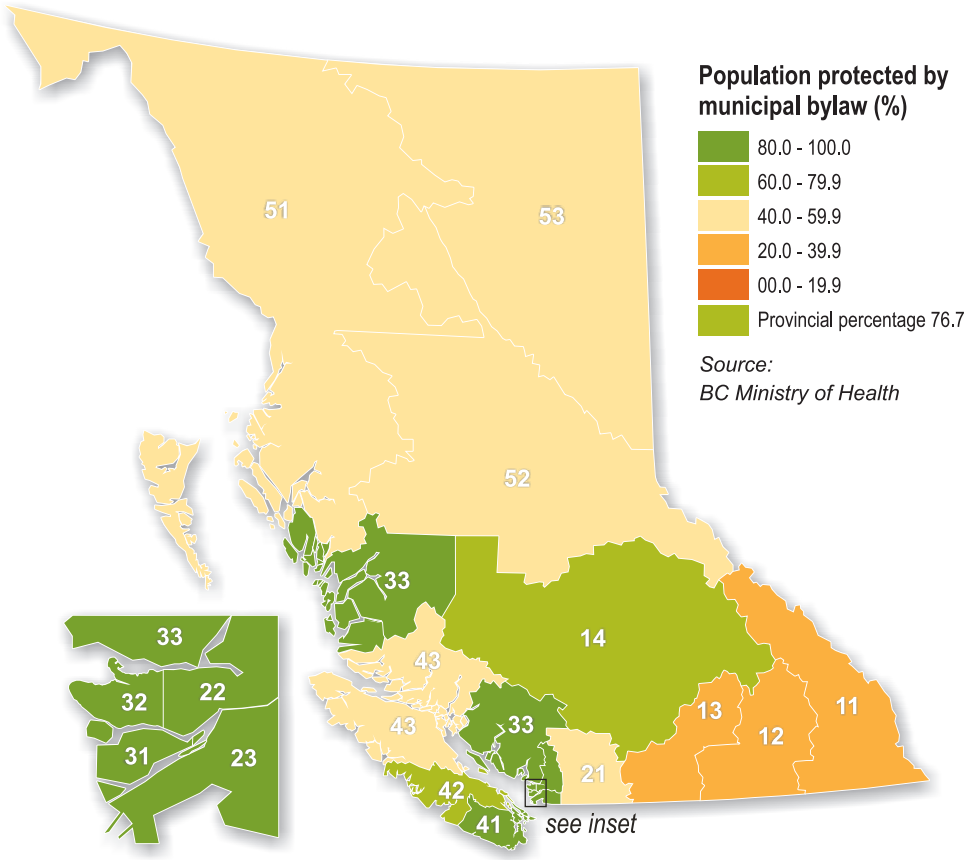
The Gold Standard prohibits smoking in all public places, including restaurants, bars, billiard halls, bingo halls, bowling alleys, and casinos/slots. No designated smoking rooms are allowed under this standard. Silver prohibits smoking in most public places, including restaurants, but may allow for designated smoking rooms. One exemption is permitted among one of the following: bars, billiard halls, bingo halls, bowling alleys, or casinos/slots. Bronze bans smoking in most public places, including restaurants, and may allow for a designated smoking room. Two or more exemptions are allowed among the following: bars, billiard halls, bingo halls, bowling alleys, and casinos/slots. These bylaws may include designated smoking rooms or areas. Using these criteria, BC has 17 municipalities with one of these bylaw standards: 5 gold; 8 silver; 4 bronze.

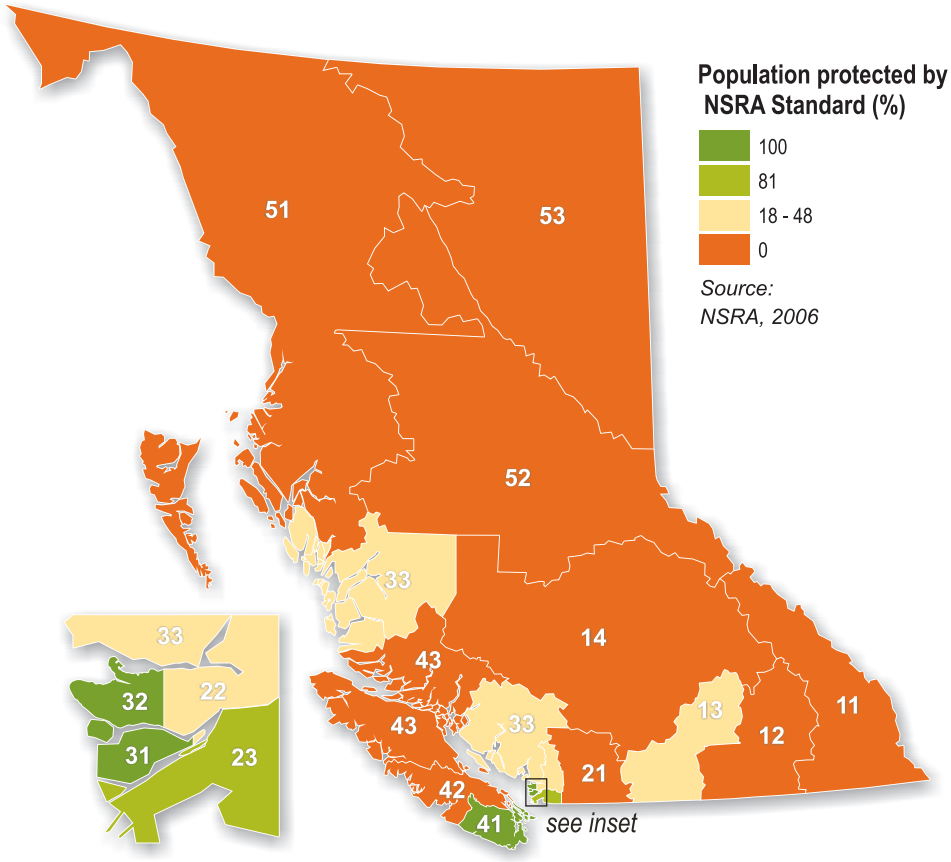
Health Service Delivery Area		Population protected by municipal bylaw (%)	Population protected by NSRA standard (%)
031	Richmond	100.0	100
022	Fraser North	100.0	18
041	South Vancouver Island	100.0	100
032	Vancouver	100.0	100
033	North Shore/Coast Garibaldi	84.5	48
023	Fraser South	81.0	81
014	Thompson Cariboo Shuswap	73.8	0
042	Central Vancouver Island	70.5	0
052	Northern Interior	57.4	0
053	Northeast	51.4	0
021	Fraser East	51.0	0
043	North Vancouver Island	49.9	0
051	Northwest	47.6	0
013	Okanagan	29.0	33
012	Kootenay Boundary	28.2	0
011	East Kootenay	23.9	0
999	**Province**	**76.7**	**46.6**

The second map shows that, at the start of 2005, three HSDAs had 100% smoke-free public area coverage that qualify as gold, silver, or bronze. South Vancouver Island and Richmond both had 100% gold coverage. Vancouver had 100% bronze coverage. Fraser South had over 80% coverage with a variety of standards among its municipalities. Three other HSDAs, Fraser North, North Shore/Coast Garibaldi, and Okanagan, had some gold, silver, or bronze standards, but less than half the population was covered. All other HSDAs had no municipalities that qualified for any of the three standard ratings.

More than 46% of the province's population was covered by one of the standards bylaws at the start of 2005 and most of the coverage was in the urbanized southwest of the province.

Municipal smoking restriction bylaws





Smoke-free environment in public places frequented in the past month

Places where people gather can be smoke free, thus establishing an environmental asset for wellness. In answer to the CCHS question "*In the past month were you exposed to second-hand smoke every day or almost everyday in public places (such as bars, restaurants, shopping malls, arenas, bingo halls, bowling alleys)?*" nearly 9 out of every 10 respondents (89.14%) answered negatively, indicating a large number of residents regularly spent their leisure time in areas that had banned smoking. This percentage is significantly higher than the Canadian average of 84.97%.

Health Service Delivery Area	All respondents (%)	Males (%)	Females (%)	Ages 12-19 (%)	Ages 20-64 (%)	Ages 65+ (%)
042 Central Vancouver Island	92.38	91.10	93.60	90.35	91.23	96.79
051 Northwest	92.31	90.81	93.91	79.96	94.58	98.42
031 Richmond	92.23	92.00	92.43	88.86	91.72	96.96
041 South Vancouver Island	92.17	93.15	91.29	86.62	92.22	95.33
052 Northern Interior	90.55	91.22	89.86	86.74	91.22	92.47
043 North Vancouver Island	90.49	91.23	89.69	82.65	90.73	95.88
033 North Shore/Coast Garibaldi	89.90	88.71	90.94	78.33‡	89.88	97.55‡
012 Kootenay Boundary	89.81	90.53	89.05	66.96‡	92.51	97.65
013 Okanagan	89.10	86.85	91.20	77.39‡	89.19	95.43
032 Vancouver	88.92	88.60	89.21	75.14‡	89.70	93.62
022 Fraser North	88.81	89.25	88.39	69.66‡	90.99	94.04
021 Fraser East	88.80	89.27	88.37	81.01	88.79	96.05‡
014 Thompson Cariboo Shuswap	88.24	89.07	87.45	84.05	86.87	96.30‡
011 East Kootenay	86.04	83.36	88.81	82.51	84.65	94.58
023 Fraser South	85.65	84.96	86.30	82.94	85.00	91.54
053 Northeast	84.95	76.46	92.65	84.45	83.62	95.06
999 Province	**89.14**	**88.73**	**89.53**	**80.30‡**	**89.39**	**94.94‡**

‡ Age group differs significantly from 20-64 group.

The difference between the highest and lowest percentages by HSDA was a little over 7 percentage points. The top map opposite (and table above) shows that Vancouver Island had relatively high values for smoke-free public places, but only South Vancouver Island was significantly higher than the provincial average. Central Vancouver Island and Richmond also had high percentages, as did Northwest. The lowest percentages recorded were in the eastern extremities of the province (Northeast and East Kootenay) and also in Fraser South in the lower mainland. The latter was significantly lower than the provincial average.

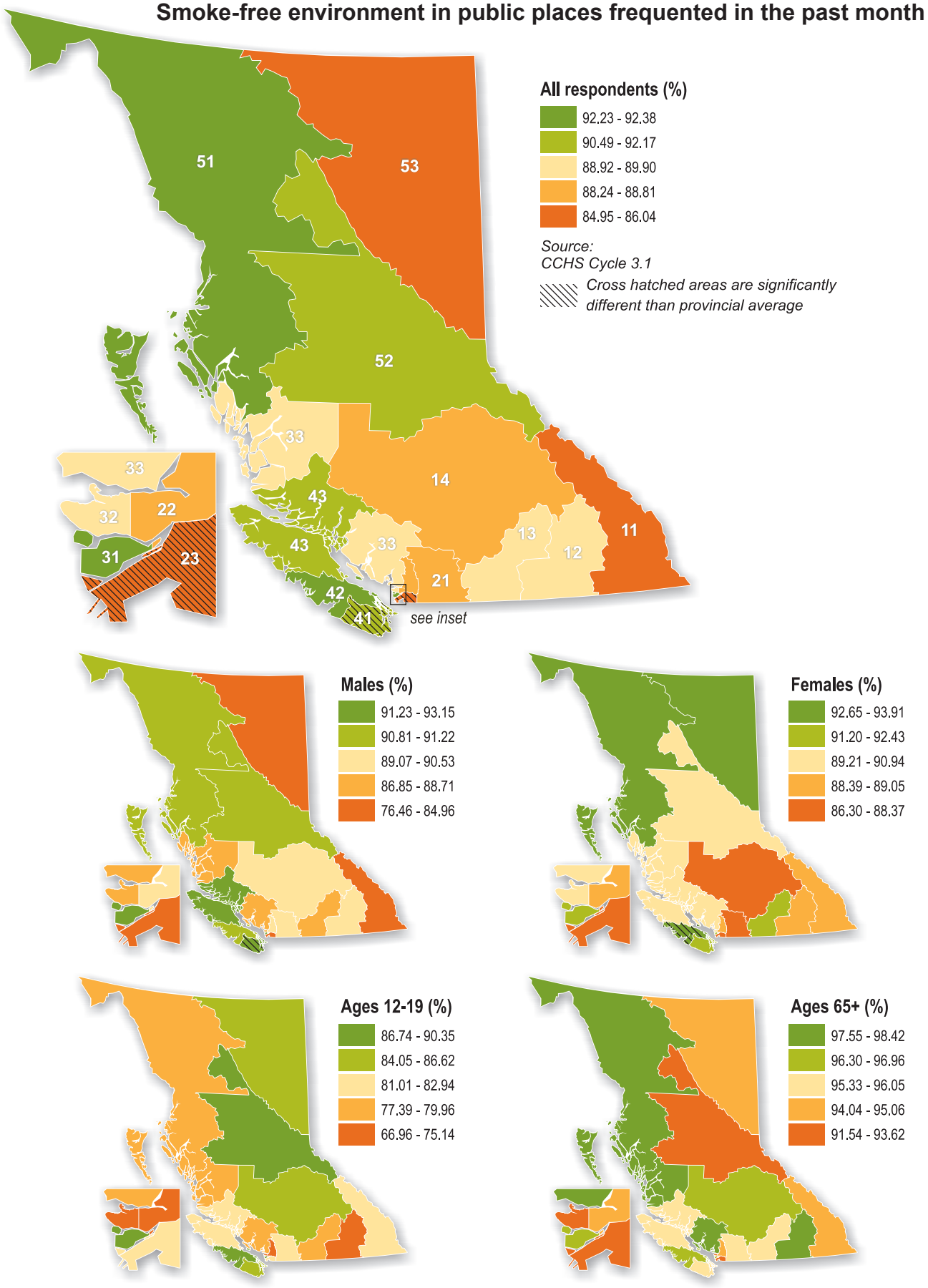
While the range in percentages for males, at 17 points, was large, no HSDA was significantly different from the provincial average for males. The large range was very much related to one area, Northeast, which had, relatively speaking, a very low percentage of 76.46%. Geographically, the pattern was very similar to that for the population as a whole.

For females, the geographical pattern was also similar, with one major exception: females in Northeast recorded one of the highest smoke-free public environments, while for both genders combined it had the lowest. The difference, while large, was not significant. The range among females by HSDA was much less than for males.

There were some significant differences in responses by age group. The 12 to 19 age cohort as a whole was statistically significantly lower (only four in every five frequented smoke-free public places in the past month) than for the 20 to 64 age group. Five HSDAs were also significantly lower for the 12 to 19 age group when compared to the middle age group. On the other hand, seniors were significantly more likely (19 out of 20) to frequent smoke-free public spaces than their younger counterparts. Three HSDAs (North Shore/Coast Garibaldi, Thompson Cariboo Shuswap, and Fraser East) had significantly higher values than the 20 to 64 age group in their areas.

Geographically, there were no significant differences among the seniors or the 12 to 19 age group by HSDA. The overall geographical patterns, however, were quite different among the separate age groups. For example, Kootenay Boundary, North Shore/Coast Garibaldi, and Vancouver HSDAs were lower for the 12- to 19-year-olds than for the other age groups.

Smoke-free environment in public places frequented in the past month



Smoke-free work environment

Working individuals, especially those in full time employment, spend a considerable amount of time at their work place. As such, having a work place completely free of environmental tobacco smoke is an important wellness asset. The CCHS asked the question "*At your place of work, what are the restrictions on smoking?*" For the province as a whole, fully two-thirds of the 7,264 respondents aged 15 to 74 who worked indicated that smoking was completely restricted in their work place. For Aboriginal respondents, the percentage was 50.19%, significantly lower statistically than for BC as a whole.

Health Service Delivery Area	All respondents (%)	Males (%)	Females (%)	Ages 15-19 (%)	Ages 20-64 (%)	Ages 55-74 (%)
032 Vancouver	76.92	73.06	81.18	F	77.89	80.37
031 Richmond	75.72	70.25	81.93	F	76.51	79.71
041 South Vancouver Island	73.14	65.64†	81.21†	F	73.45	84.97‡
033 North Shore/Coast Garibaldi	72.24	65.01†	81.09†	F	72.39	84.79
022 Fraser North	68.82	64.40	73.88	F	68.79	70.75
023 Fraser South	65.65	59.09†	74.25†	56.55	66.21	79.87‡
043 North Vancouver Island	65.54	50.80†	80.78†	F	65.97	78.35
051 Northwest	65.38	56.98	76.15	F	65.73	80.35
012 Kootenay Boundary	61.96	47.85†	77.55†	F	61.57	F
013 Okanagan	61.25	53.47†	69.98†	41.72	63.32	68.38
021 Fraser East	58.82	53.76	65.59	F	60.33	69.77
014 Thompson Cariboo Shuswap	58.01	45.56†	72.47†	F	57.82	64.76
052 Northern Interior	57.78	42.28†	77.10†	F	56.80	52.47
042 Central Vancouver Island	55.25	41.16†	71.10†	F	56.62	64.70
053 Northeast	54.03	44.61†	66.68	F	53.75	44.80
011 East Kootenay	49.22	38.71E	63.10	F	49.89	64.17
999 Province	**66.64**	**59.01†**	**75.62†**	**56.02‡**	**67.42**	**74.19‡**

‡ Age group differs significantly from 20-64 group.
† Males differ significantly from females.
E Interpret data with caution (16.77< coefficient of variation <33.3).
F Data suppressed due to Statistics Canada sampling rules.

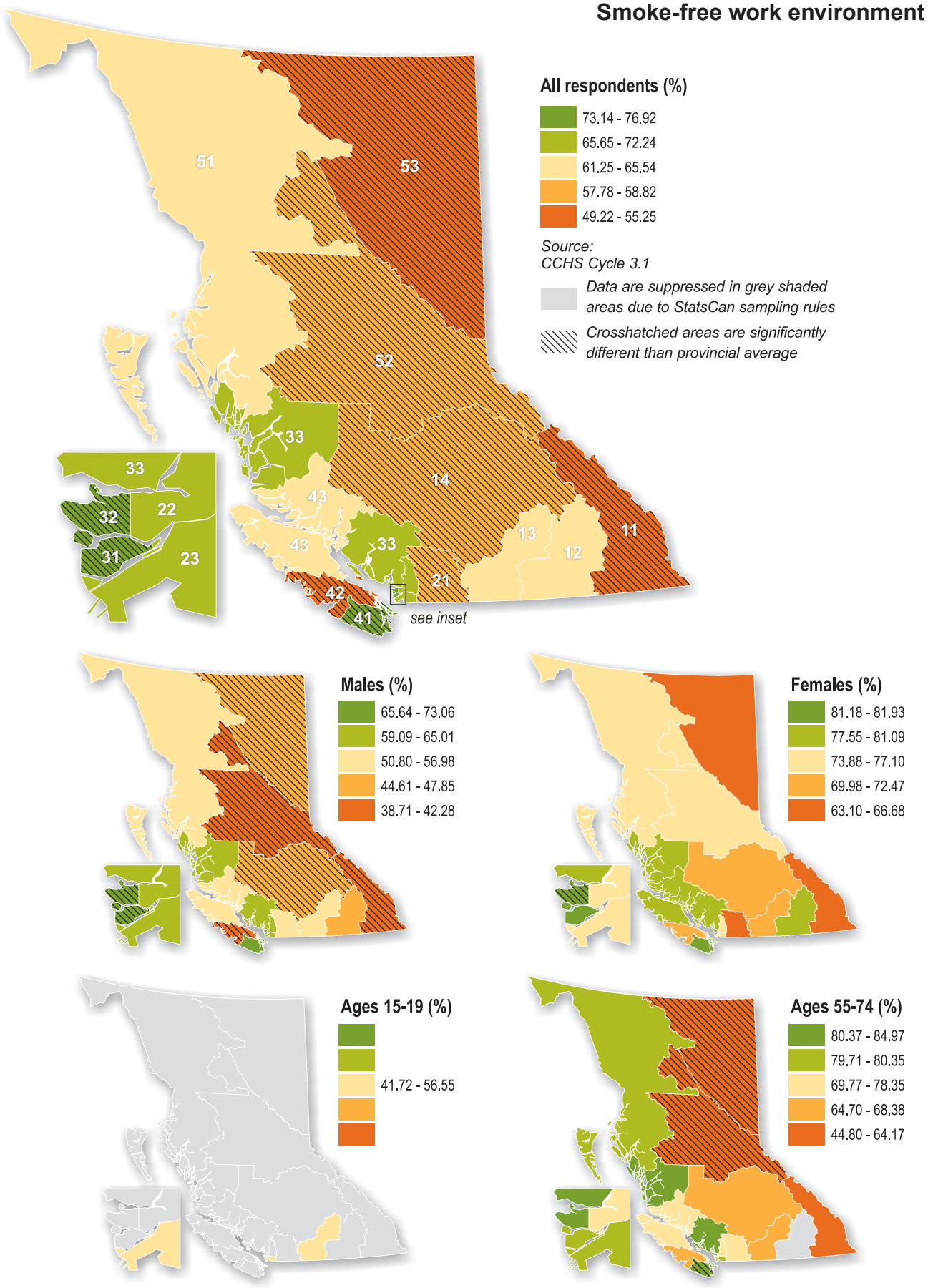
Within the province, however, as the table above and maps opposite show, there is considerable variation in smoking restrictions in the work place by region. The urbanized lower mainland and southern part of Vancouver Island were much more likely to have work place smoking restrictions than the average for the province, especially Vancouver, Richmond, and South Vancouver Island (statistically significant), while much of the central and extreme northeast and southeast parts of the province, as well as Central Vancouver Island, had statistically significantly lower percentages than average.

Female workers were significantly more likely than males to indicate they work in smoke-free environments. Not only did this difference hold at the provincial level, but geographically all regions had higher values for females than for males, and this difference was significant for 10 of the 16 HSDAs individually.

Geographically, the patterns evident for males and for females separately were quite similar to that of the population as a whole. The range in values for males, however, was much greater than for females. Among males, Vancouver and Richmond were significantly better than the average for males, while Thompson Cariboo Shuswap, Northern Interior, Central Vancouver Island, Northeast, and East Kootenay had significantly lower values than the male average. Only Vancouver was statistically significantly different from the provincial value for females.

Provincially, the 15- to19-year-old youths who work were significantly less likely to work in a smoke-free environment than workers in the 20 to 64 age cohort, while those workers aged 55 to 74 were significantly more likely to do so. Because of small numbers, it is not possible to map the 15 to 19 age group, but for the highest age cohort the pattern was very similar to that for the province as a whole. The range in values for the 55 to 74 age group was much greater than for the 20 to 64 age cohort. South Vancouver Island and Fraser South seniors had significantly higher values than their 20- to 64-year-old counterparts. Geographically, Northeast and Northern Interior had significantly lower values than the provincial average for seniors, while South Vancouver Island and Vancouver had significantly higher ones.

Smoke-free work environment



Smoke-free vehicle environment

Health Service Delivery Area	All respondents (%)	Males (%)	Females (%)	Ages 12-19 (%)	Ages 20-64 (%)	Ages 65+ (%)
031 Richmond	97.08	96.13	97.89	92.88	97.18	99.51
033 North Shore/Coast Garibaldi	96.60	96.81	96.42	88.75‡	97.04	100.00‡
041 South Vancouver Island	96.38	97.11	95.73	86.26‡	97.57	98.44
032 Vancouver	95.30	94.98	95.58	90.43	95.43	97.64
022 Fraser North	95.27	94.94	95.58	88.35	95.71	99.14
042 Central Vancouver Island	94.24	92.72	95.69	85.53	94.26	98.95‡
023 Fraser South	93.65	92.63	94.63	90.00	93.41	98.51‡
012 Kootenay Boundary	93.64	94.82	92.41	83.29	95.04	96.64
013 Okanagan	93.38	92.07	94.59	79.59‡	94.60	97.86
014 Thompson Cariboo Shuswap	92.66	92.30	93.00	83.98	93.70	95.16
011 East Kootenay	91.59	88.24	95.05	87.47	91.30	96.36
051 Northwest	91.02	87.54	94.73	94.78	88.67	100.00‡
021 Fraser East	90.71	89.33	91.95	81.93	91.38	96.29
052 Northern Interior	90.05	88.12	92.04	88.37	90.19	91.95
043 North Vancouver Island	88.41	85.01	92.04	90.55	85.58	97.01‡
053 Northeast	84.67	83.45	85.77	64.87‡	88.07	98.23
999 Province	**94.03**	**93.20†**	**94.80†**	**86.96‡**	**94.39**	**98.00‡**

‡ Age group differs significantly from 20-64 group.
† Males differ significantly from females.

Many Canadians commute by car and use a vehicle to undertake errands and other activities, particularly in the suburbs or in communities that have little mixed land use. The environment of a vehicle is very confined and so a smoke-free vehicle environment is an asset that can maintain present and future wellness. When asked, as part of the CCHS, the question "*In the past month were you exposed to second-hand smoke every day or almost every day in a car or private vehicle?*" nearly 19 out of 20 respondents (94.03%) in BC answered in the negative, a statistically significantly higher percentage than for Canada as a whole (91.76%).

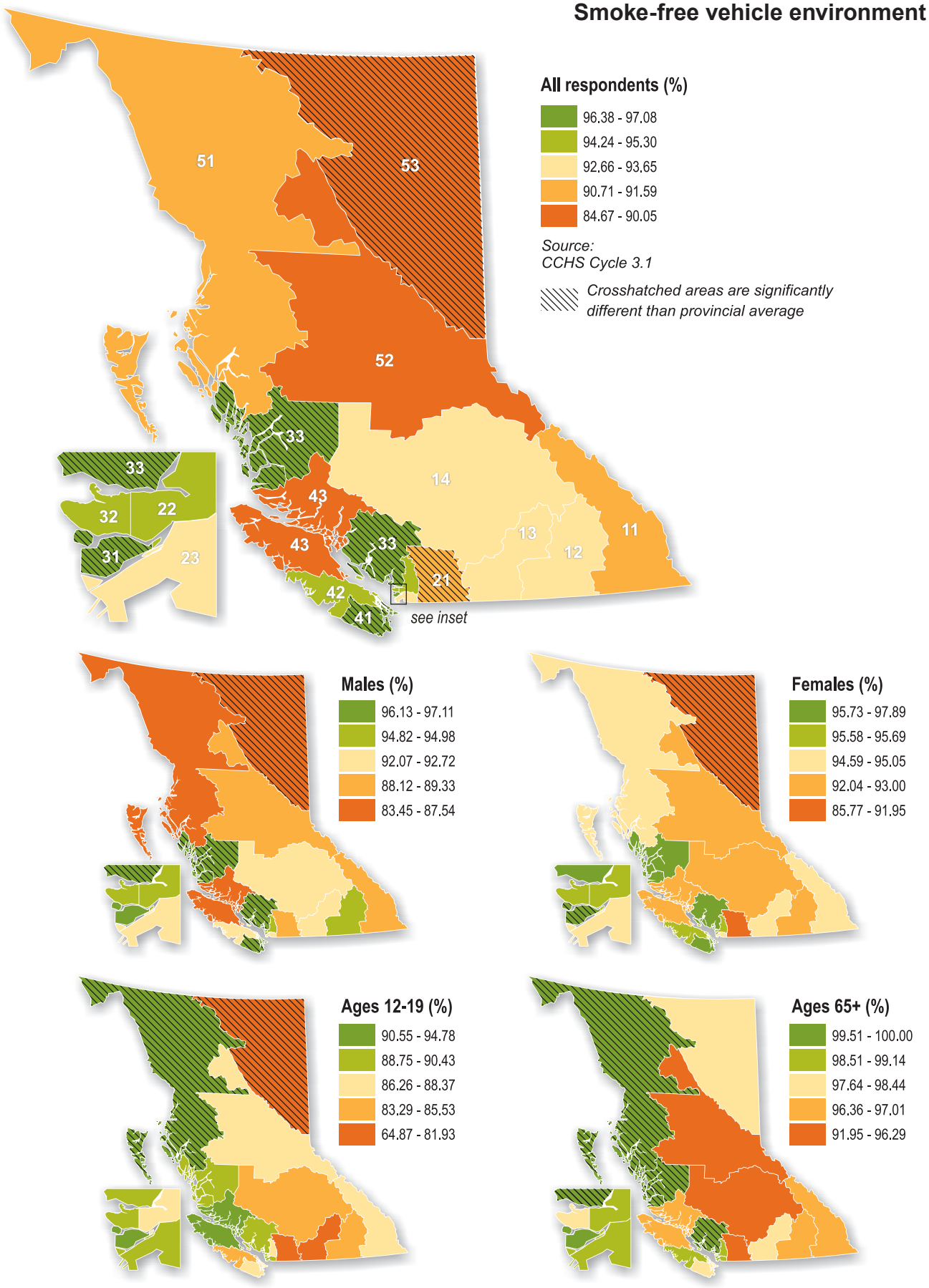
For the total population aged 12 and over, the range in values was more than 12 percentage points, and the values were highest in the urbanized lower mainland (with the exception of Fraser South) and South Vancouver Island, and lowest in the north (Northern Interior and Northeast) and North Vancouver Island. Richmond, North Shore/Coast Garibaldi, and South Vancouver Island were all significantly higher, while Northeast and Fraser East (in the southwest of the province) were significantly lower than the provincial average.

At the provincial level, while the difference was quite small, females were significantly more likely than males to ride in smoke-free vehicles, but at the individual HSDA level there was no significant difference. For males only, South Vancouver Island and North Shore/Coast Garibaldi had significantly higher values than the provincial average for males, while Northeast had a significantly lower value. For females only, Richmond had a significantly higher value and Northeast a significantly lower value than the provincial female average.

Overall, the geographical patterns were very similar to the patterns for the population as a whole.

Ridership in smoke-free vehicles increased with age. The 12 to 19 age cohort was significantly lower than the 20 to 64 age group, while the 65 and over age group was significantly higher. Provincially, 98% of seniors rode in relatively smoke-free cars. There were some dramatic geographical differences. While Northwest overall had relatively low smoke-free ridership, the youngest age cohort was statistically significantly high. Young people in North Vancouver Island also had relatively high rates compared to the 20 to 64 age group in that HSDA, but not significantly so. For the seniors group, Northwest also had a statistically significantly high value, as did North Shore/Coast Garibaldi. In both cases, 100% of respondents rode in smoke-free vehicles.

Smoke-free vehicle environment



Smoke-free home environment

Individuals and families spend more than one-third of their time in their homes. Home environments can be either healthy or less so, depending on behaviours within the home. Because of relatively small spaces within the home, tobacco smoke-free home environments are important from a wellness perspective, for all inhabitants. As noted earlier, there is no risk-free level of exposure, and babies and younger children are particularly at risk to the ill effects of second-hand smoke in the home (Kendall and Morley, 2006).

Health Service Delivery Area	All respondents (%)	Males (%)	Females (%)	Ages 12-19 (%)	Ages 20-64 (%)	Ages 65+ (%)
032 Vancouver	95.20	96.23	94.22	85.75	95.96	96.85
041 South Vancouver Island	94.73	94.25	95.16	84.12‡	96.16	95.65
031 Richmond	93.22	93.98	92.51	92.56	93.54	92.01
022 Fraser North	92.22	91.58	92.85	82.11‡	93.21	95.57
023 Fraser South	91.99	91.56	92.41	87.10	92.27	95.48
013 Okanagan	91.47	91.63	91.31	87.93	90.73	95.91
042 Central Vancouver Island	90.96	90.08	91.80	81.06	91.14	96.56‡
033 North Shore/Coast Garibaldi	90.66	89.38	91.89	84.35	90.12	97.91‡
021 Fraser East	89.85	90.38	89.34	81.55	90.41	95.18
012 Kootenay Boundary	89.57	91.54	87.62	78.10	91.20	91.65
043 North Vancouver Island	88.53	90.68	86.40	77.08	89.70	93.65
014 Thompson Cariboo Shuswap	86.92	87.27	86.58	71.92	88.66	91.73
051 Northwest	86.60	84.68	88.62	84.19	85.96	95.28
011 East Kootenay	86.14	86.21	86.08	82.55	85.62	91.78
052 Northern Interior	85.25	84.02	86.57	81.63	86.15	84.01
053 Northeast	79.10	79.54	78.63	77.53	78.27	89.21
999 Province	**91.40**	**91.30**	**91.50**	**83.46‡**	**91.96**	**95.08‡**

‡ Age group differs significantly from 20-64 group.

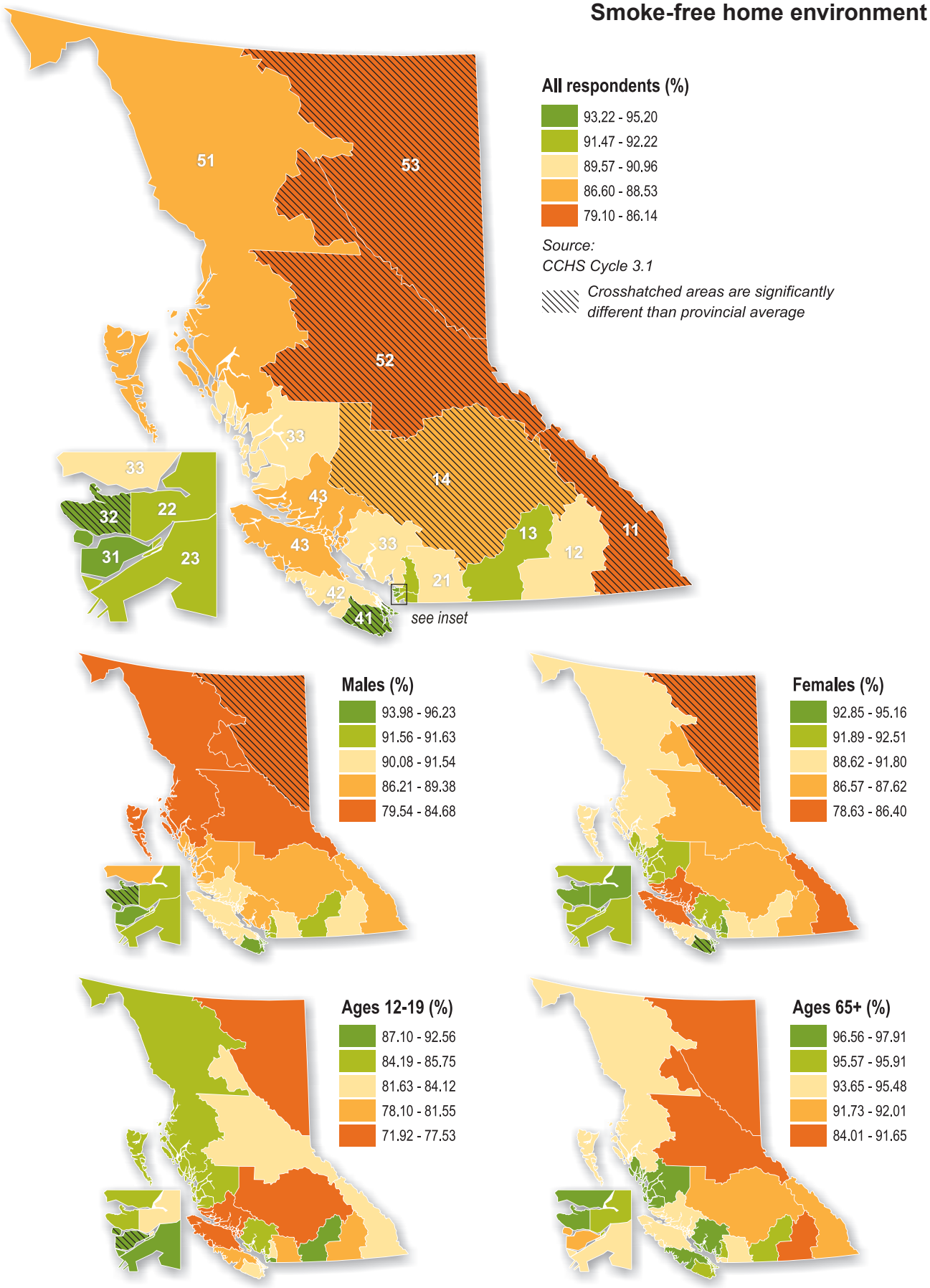
In answer to the CCHS question "*Including both household members and regular visitors, does anyone smoke inside your home every day or almost every day?*" 91.40% answered negatively. This is significantly higher than the Canadian average of 84.04%, indicating healthier tobacco smoke-free home environments for provincial residents.

The urbanized lower mainland and South Vancouver Island had the highest percentage of smoke-free home environments, while moving northward and eastward to the more rural parts of the province saw a reduction in smoke-free home environments. Both Vancouver and South Vancouver Island had statistically significantly higher percentages, while Northeast, Northern Interior, East Kootenay, and Thompson Cariboo Shuswap HSDAs had significantly lower smoke-free home environments when compared to the provincial average.

Vancouver had the greatest percentage of male respondents with smoke-free home environments (96.23%) and Northeast had the lowest (79.54%). Both of these percentages are statistically significantly different from the provincial value of 91.30% for males. Overall, the geographic pattern is similar to that for the population. For female respondents, South Vancouver Island had the highest percentage with a smoke-free home environment (95.16%), while Northeast again had the lowest (78.63%). Both of these HSDAs had values that were significantly different from the provincial average for females (91.50%). The overall geographic pattern of variation was similar to that of the population as a whole.

Comparisons among age groups indicate that seniors have a statistically significantly better smoke-free environment than those in the 20 to 64 age group, and Central Vancouver Island and North Shore/Coast Garibaldi were both individually significantly better than the younger age cohorts. The opposite was the case for the youngest age cohort (12 to 19), for which provincially a significantly lower percentage had a tobacco smoke-free home environment than the 20 to 64 age group, and two HSDAs, South Vancouver Island and Fraser North, both had significantly lower percentages. Among teens, Richmond was significantly higher than the provincial teen average.

Smoke-free home environment



Some restriction against smoking cigarettes in home

A previous CCHS question asked about smoke-free home environments. A second question asked: "*Are there any restrictions against smoking cigarettes in your home?*" Nearly four out of five (79.37%) respondents indicated that there were restrictions at home, significantly higher than the Canadian average of 69.75%, but the responses were considerably lower than to the previous question for both BC and Canadian respondents.

Health Service Delivery Area	All respondents (%)	Males (%)	Females (%)	Ages 12-19 (%)	Ages 20-64 (%)	Ages 65+ (%)
043 North Vancouver Island	86.52	86.19	86.84	78.22	89.21	81.61
041 South Vancouver Island	84.23	83.99	84.45	75.89‡	86.90	78.89
021 Fraser East	83.34	80.51	86.10	80.82	83.81	83.56
042 Central Vancouver Island	82.89	79.46	86.19	78.92	84.62	79.52
013 Okanagan	82.48	82.43	82.52	79.36	82.86	83.04
033 North Shore/Coast Garibaldi	81.92	80.94	82.86	82.93	83.02	76.17
023 Fraser South	80.65	79.02	82.25	79.97	81.15	78.51
051 Northwest	79.87	77.60	82.31	82.33	79.41	79.42
014 Thompson Cariboo Shuswap	79.72	82.49	76.98	73.28	81.85	75.65
011 East Kootenay	79.05	76.34	81.82	79.35	81.35	68.23
031 Richmond	78.97	82.07	76.07	89.50	79.29	69.84
022 Fraser North	77.58	75.61	79.49	79.03	78.05	73.39
012 Kootenay Boundary	77.29	75.67	78.91	73.22	79.20	72.65
032 Vancouver	72.63	70.72	74.48	69.05	75.04	66.84
052 Northern Interior	72.47	68.21	76.95	75.79	74.68	51.81‡
053 Northeast	69.90	67.88	72.07	76.18	70.59	52.70
999 Province	**79.37**	**78.04†**	**80.67†**	**78.12**	**80.38**	**75.52‡**

‡ Age group differs significantly from 20-64 group.
† Males differ significantly from females.

Most restrictions on smoking in the home occurred on Vancouver Island, particularly in North and South Vancouver Island. The lower mainland, with the key exception of Fraser East, and to a lesser extent North Shore/Coast Garibaldi, had relatively low levels of restrictions, and Vancouver was significantly lower than the provincial average. Northern Interior and Northeast also had significantly lower levels of restrictions on smoking in the home.

For the province as a whole, female respondents had a statistically significantly higher percentage, indicating greater restrictions than males. However, there was no significant difference between the genders for any of the individual HSDAs.

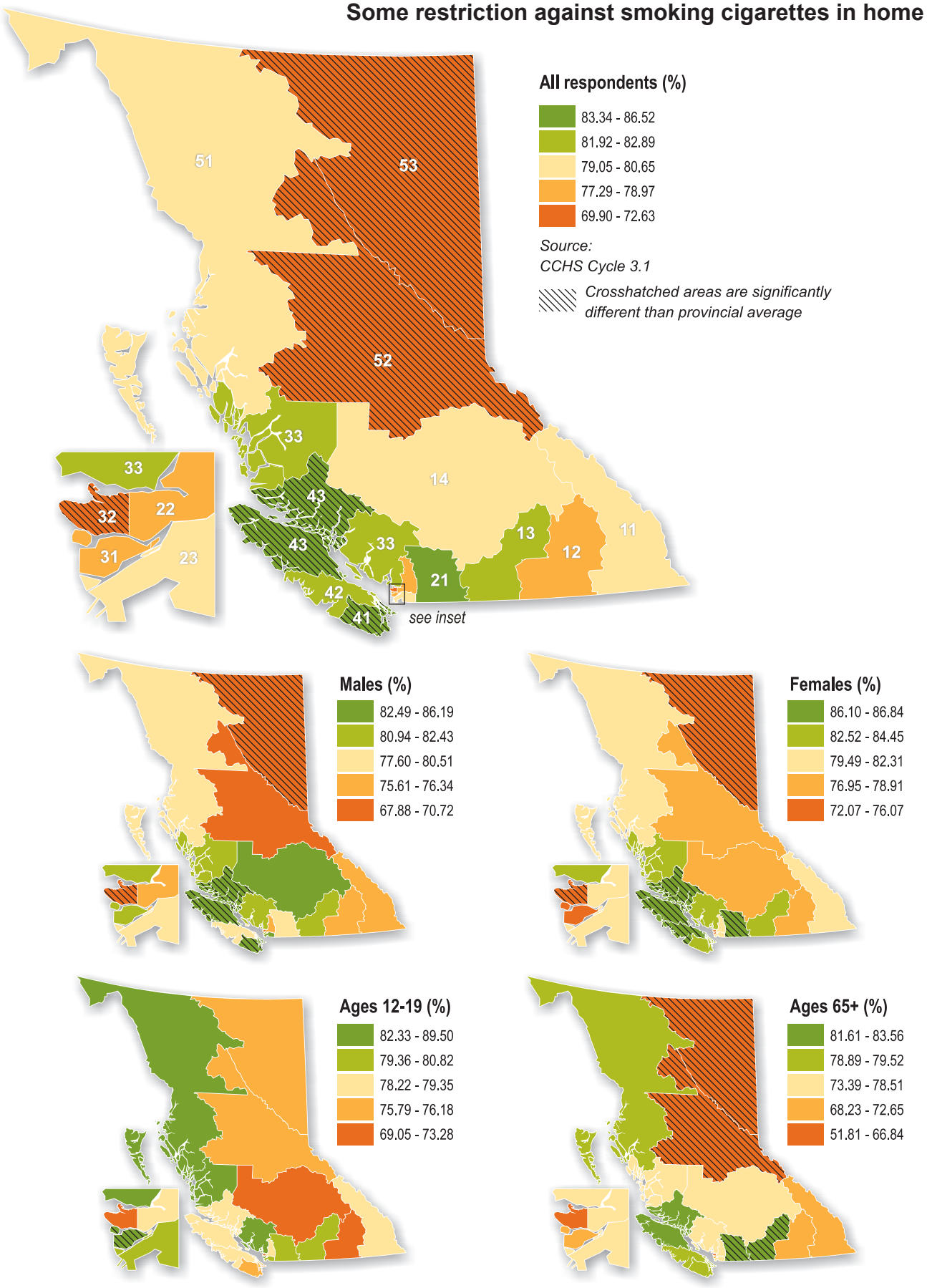
The geographical patterns for each gender were similar to that for the total population, although males in Thompson Cariboo Shuswap, and to a lesser extent Richmond, had higher, and Fraser East lower, restrictions than the population in their HSDAs as a whole. South and North Vancouver Island males also had significantly higher restrictions, while Vancouver and Northeast had significantly lower restrictions than the male population as a whole.

For females, North and Central Vancouver Island and Fraser East were significantly higher, while again Vancouver and Northeast were significantly lower than for the female population as a whole.

Overall, both the 12 to 19 and 65 and over age groups had lower restrictions than the 20 to 64 age group, but only seniors were statistically significant. Among seniors, Fraser East and Okanagan had significantly higher smoking restrictions, while Northeast and Northern Interior had significantly lower restrictions, with one out of every two respondents indicating relatively limited restrictions on smoking in the home. Northern Interior was also significantly lower than the 20 to 64 age population in its HSDA. Overall, the geographical pattern was quite similar to the pattern for the population as a whole.

There are some interesting differences between the 12 to 19 age group and the 20 to 64 age group. Richmond was statistically significantly high and also had the most restrictive home no smoking conditions for the youth group. At the other extreme, South Vancouver Island teens had significantly lower smoking restrictions than their 20 to 64 age counterparts. North and Central Vancouver Island also had lower percentages for youth when compared to the 20 to 64 age cohort, but not significantly so.

Some restriction against smoking cigarettes in home



Presently non-smoker

As indicated earlier, tobacco smoke and smoking is related to many major diseases. Being a non-smoker is an important asset for wellness. The CCHS shows that 82.24% of respondents in BC indicated they were presently a non-smoker, a significantly higher percentage than for Canada as a whole (78.21%). For Aboriginal CCHS respondents in BC, only 60.63% were presently non-smokers, statistically significantly lower than the provincial average.

Health Service Delivery Area	All respondents (%)	Males (%)	Females (%)	Ages 12-19 (%)	Ages 20-64 (%)	Ages 65+ (%)
031 Richmond	87.69	83.87	91.25	91.39	85.92	94.20‡
022 Fraser North	85.90	83.99	87.77	91.88	84.33	90.03
033 North Shore/Coast Garibaldi	84.12	80.55	87.54	86.57	81.55	94.19‡
041 South Vancouver Island	84.06	83.64	84.43	94.94‡	80.63	90.83‡
023 Fraser South	82.65	81.15	84.13	91.07‡	79.52	91.82‡
032 Vancouver	82.18	78.44†	85.81†	92.68‡	79.85	88.82‡
021 Fraser East	81.68	78.33	84.95	91.09‡	77.79	90.41‡
042 Central Vancouver Island	81.52	81.41	81.62	81.76	78.56	91.29‡
013 Okanagan	81.27	80.74	81.76	89.98‡	76.35	91.90‡
051 Northwest	79.83	79.42	80.26	94.43‡	75.72	87.97
011 East Kootenay	79.45	79.74	79.15	92.95‡	74.96	88.72‡
043 North Vancouver Island	79.21	82.16	76.28	85.48	75.05	92.44‡
012 Kootenay Boundary	78.70	80.37	77.02	92.98‡	73.75	88.10‡
014 Thompson Cariboo Shuswap	77.55	75.55	79.54	80.84	74.54	87.99‡
052 Northern Interior	75.92	75.25	76.64	92.67‡	72.39	77.61
053 Northeast	70.68	64.49	77.33	86.10‡	66.01	82.94
999 Province	**82.24**	**80.40†**	**84.03†**	**90.06‡**	**79.26**	**90.45‡**

‡ Age group differs significantly from 20-64 group.
† Males differ significantly from females.

Within the province, there was a 17 percentage point difference between the HSDA with the highest percentage and the one with the lowest. The highest non-smoking percentages occurred in the urban southwest of the province, with values decreasing as one moves east and north. Richmond and Fraser North had significantly higher percentages of non-smokers, while Northern Interior and Northeast had significantly lower values.

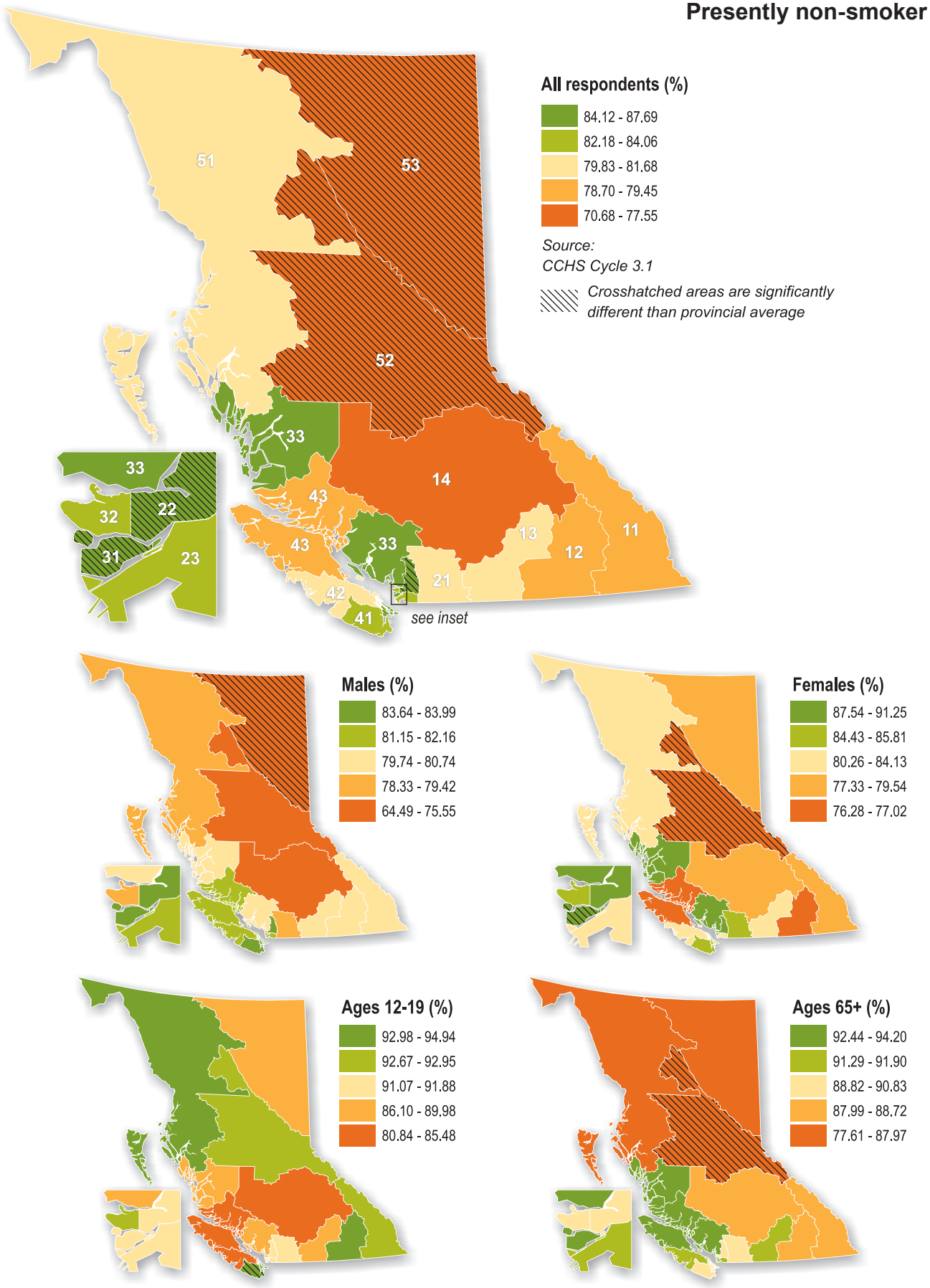
For the province as a whole, females had significantly higher rates of non-smoking behaviour than did males, although among HSDAs only Vancouver shows a significant difference between the two genders. In a couple of instances, some HSDAs, notably North Vancouver Island and Kootenay Boundary, had higher non-smoking rates for males than for females, but the difference was not statistically significant. For Aboriginal respondents, there was no significant difference between the genders.

The pattern for males generally reflected the geographical pattern for the population as a whole, with the exception of Vancouver which, as previously noted, had a significantly lower non-smoking percentage. Only Northeast was significantly different than the others, and was nearly 30 percentage points lower than the highest HSDAs. For females, the geographical pattern is also similar to that for the population as a whole, although only Northern Interior was significantly different from the provincial average for females.

Among the three major age cohorts, both the 12 to 19 age group and seniors aged 65 and over had statistically significantly higher percentages of no smoking behaviours than the 20 to 64 age group. The youngest age group showed significantly higher values for 10 of the 16 HSDAs individually, while 12 HSDAs had significantly higher no smoking behaviour for seniors than the middle 20 to 64 age group.

The geographical pattern for seniors was quite similar to that for the population as a whole, although North Vancouver Island seniors had a much higher percentage of non-smokers than that HSDA's population as a whole. The pattern for the 12 to 19 age group varied quite substantially from that for the population as a whole, with the highest no smoking rates occurring outside of the urban southwest of the province, with the exception of South Vancouver Island, and to a lesser extent, Vancouver.

Presently non-smoker



Summary

While BC residents continue to do significantly better than their Canadian counterparts on many of the indicators presented here, there are major variations or inequities within the province indicating that wellness in terms of no smoking is far from being shared equally. For most of the indicators, smoke-free environments are substantially more common in the urbanized southwest part of the province—the lower mainland and South Vancouver Island—while there is a fall-off in wellness assets as one moves geographically away from this area into the more rural and less densely populated central, eastern, and northern parts of the province. Wellness on this dimension is least developed in the extreme northeast of the province. These variations suggest that there are substantial opportunities for improvements, and it may be useful to consider targeting specific segments of the population in specific regions, as well as universal healthy public policy strategies.

School districts can positively influence children and youth by implementing more restrictive no smoking policies and enforcing existing policies. Schools can play a significant role in deterring early initiation of smoking behaviour among children and youth (Kendall, 2003). Avoiding early onset of smoking behaviour will go a very long way to improving the wellness of not only children, but also future adults. While the Premier of BC committed to a ban on smoking on all school property in every public and private school across BC by September 2007, appropriate enforcement will be required as this has not been a strong point of past school district smoking-related policies (McBride, 2005). More than 90% of youth are non-smokers, but many are still exposed to second-hand smoke as indicated by the data from the CCHS. For example, youth travelling in vehicles are less likely than the rest of the population to travel in a smoke-free environment. This also holds true for the home and work environments.

Municipalities can also set a broad, community-wide example by restricting smoking in public places. While many local governments have implemented various types of no smoking bylaws, only about one-half of the population is covered by the Gold, Silver, or Bronze standards devised by the Non-Smokers' Rights Association. In the neighbouring province of Alberta, approximately 70% of the population live, work, play, and learn in municipalities that have implemented bylaws that meet the standards developed by the Non-Smokers' Rights Association, and the great majority of the population (approximately 65%) have the Gold Standard protection (NSRA, 2006). Most other provinces have implemented legislation that ensures their populations live, work, play, and learn in smoke-free public environments. As indicated earlier, a commitment to phase out smoking in all indoor public spaces by 2008 was made by the Premier of BC in the fall of 2006. It was noted nearly 15 years ago that it will be a challenging task to get smaller, more rural municipalities to adopt no smoking bylaws (Hollander et al., 1992). Time will tell whether all municipalities will actively embrace and enforce the initiative announced by the Premier.

Finally, health authorities in the province are responsible for developing their own Tobacco Control Strategy and have performance agreements with the Ministry of Health to achieve reductions in the smoking rates. Careful monitoring and utilization of the data presented here can result in targeting programs to help improve wellness.

While, overall, BC fares better than Canada as a whole on many indicators, there is still some way to go, especially with respect to restricting outdoor smoking, and smoking in vehicles when small children and youth are present. Some jurisdictions in North America have already adopted such measures.