

# The physical and mental health status and health practices of physicians in British Columbia

There is a strong and consistent relationship between physicians' health choices and the recommendations they make to their patients, so improving the already relatively good health of BC physicians can make a significant impact on patients.

## **ABSTRACT:**

**Background:** Our purpose was to describe the physical and mental health status and health practices of BC physicians, and to compare these with the health and practices of physicians in other Canadian provinces as well as with the health habits of nonphysician Canadians.

**Methods:** A questionnaire was used to conduct a cross-sectional survey between November 2007 and May 2008. Respondents included 582 BC physicians and 2631 Canadian physicians from other provinces.

**Results:** BC physicians were like other Canadian physicians regarding many characteristics, including their weight; their use of tobacco, alcohol, and caffeine; their vitamin/mineral consumption; their personal

screening habits, personal and professional attitudes, and levels of professional burnout. However, BC physicians were more likely to be family practitioners and to be male, middle-aged, and born outside of Canada. BC physicians ate fewer fruits and vegetables than did other Canadian physicians, and while they exercised more, there was still considerable room for improvement, as 42% of BC physicians did not meet Centers for Disease Control and Prevention physical activity guidelines. **Conclusions:** While BC's physicians, like other physicians in Canada, have many healthy habits, an intervention to improve their diets and exercise habits would be timely and likely useful for both the physicians and their patients, who are known to be affected by physician role modeling.

## **Background**

While we have recently documented the relatively good health and personal health practices of Canadian physicians collectively, no one has considered data on the physical and mental health or personal health practices of physicians in BC. Such an investigation is worthwhile because physicians' personal health habits strongly and consistently affect patients' health habits.<sup>1</sup>

## **Methods**

Described previously in more detail,<sup>2</sup> a national study was conducted from

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**Table 1. Demographic characteristics of 3213 Canadian physicians surveyed in 2007–2008.**

|  | %* in BC | % in Canada |
|--|----------|-------------|
| <b>Female</b> ( $P = .03$ ) <sup>†</sup>                                       | 31       | 37          |
| <b>Born in Canada</b> ( $P = .0006$ )  | 61       | 67          |
| <b>Age, years</b> ( $P < .0001$ )  |          |             |
| < 45   | 29       | 31          |
| 45–64  | 61       | 57          |
| 65+  | 10       | 12          |
| <b>MD degree from</b> ( $P = .2$ )   |          |             |
| Canadian medical school  | 76       | 79          |
| US medical school  | 1        | 1           |
| Medical school in another country  | 23       | 20          |
| <b>Specialty</b>   |          |             |
| Anesthesiology ( $P = .4$ )  | 7        | 6           |
| Community medicine ( $P = .99$ )   | 2        | 2           |
| Family medicine ( $P = .06$ )  | 49       | 45          |
| Internal medicine ( $P = .9$ )   | 7        | 7           |
| Obstetrics and gynecology ( $P = .2$ )   | 5        | 4           |
| Pathology/laboratory medicine ( $P = .6$ )                                     | 3        | 2           |
| Pediatrics ( $P = .6$ )  | 5        | 5           |
| Psychiatry ( $P = .4$ )  | 7        | 8           |
| Radiology ( $P = .3$ )   | 2        | 3           |
| Surgical specialties ( $P = .07$ )   | 11       | 9           |
| Others ( $P = .2$ )  | 18       | 20          |
| <b>Main practice setting</b> ( $P = .04$ )                                     |          |             |
| Inner city   | 15       | 19          |
| Urban/suburban   | 65       | 60          |
| Rural/small town/remote  | 20       | 21          |
| <b>Work setting</b>  |          |             |
| Private office/clinic (excluding freestanding walk-in clinics) ( $P < .0001$ ) | 66       | 55          |
| Community clinic/community health centre ( $P = .99$ )                         | 11       | 11          |
| Freestanding walk-in clinic ( $P < .0001$ )                                    | 13       | 7           |
| Academic health sciences centre ( $P = .02$ )                                  | 23       | 27          |
| Community hospital ( $P < .0001$ )   | 45       | 36          |
| Emergency department (community hospital or academic centre) ( $P = .6$ )      | 17       | 15          |
| Nursing home/home for the aged ( $P = .003$ )                                  | 16       | 12          |
| Administrative office ( $P = .4$ )   | 6        | 6           |
| Research unit ( $P = .4$ )   | 2        | 3           |
| Freestanding lab/diagnostic clinic ( $P = .9$ )                                | 2        | 2           |
| Other ( $P = .99$ )  | 7        | 7           |
| <b>Primary professional income source</b> ( $P < .0001$ )                      |          |             |
| Fee-for-service (insured/uninsured)  | 76       | 70          |
| Salary   | 7        | 13          |
| Capitation   | 0        | 3           |
| Sessional/per diem/hourly  | 4        | 5           |
| Service contracts  | 11       | 5           |
| Other  | 1        | 3           |

\*Sums of percentages do not total 100 in cases where respondents were allowed to choose more than one response; <sup>†</sup> $P$ -values for BC vs Canadian physicians included.

November 2007 to May 2008 using a random sample of 3213 Canadian physicians. The protocol was piloted and then approved by the UBC Behavioural Research Ethics Board. The questionnaire included questions about physician demographic characteristics, general health, and health practices. Many of the questions about health habits were taken verbatim from the Canadian Community Health Survey ([www.statcan.gc.ca/cgi-bin/imdb/p2SV.pl?Function=getSurvey&SDDS=3226&lang=en&db=imdb&adm=8&dis=2](http://www.statcan.gc.ca/cgi-bin/imdb/p2SV.pl?Function=getSurvey&SDDS=3226&lang=en&db=imdb&adm=8&dis=2)), the National Study on the Work and Health of Nurses ([www.statcan.gc.ca/cgi-bin/imdb/p2SV.pl?Function=getSurvey&SDDS=5080&lang=en&db=imdb&adm=8&dis=2](http://www.statcan.gc.ca/cgi-bin/imdb/p2SV.pl?Function=getSurvey&SDDS=5080&lang=en&db=imdb&adm=8&dis=2)), and the CDC's Behavioral Risk Factor Surveillance System ([www.cdc.gov/BRFss/questionnaires/english.htm](http://www.cdc.gov/BRFss/questionnaires/english.htm)).

We sent the questionnaire and cover letter to 8100 randomly selected physicians, excluding residents and retired physicians. Mailings began in November 2007, with follow-ups to nonresponders in December 2007 and January 2008. Responses were accepted until April 2008, and a fourth mailing went to BC physicians in order to boost response rates. Responses were eventually received from 582 BC physicians and 2631 physicians from other provinces, for a response rate of 41%.<sup>3</sup>

We weighted data for nonresponse using the raking ratio method to match physicians' demographic characteristics known to the Canadian Medical Association: province by type of physician (family/general versus other specialist) and sex by age group (20–39, 40–49, 50–59, 60–69, 70+). The analysis was run in SAS and R<sup>3</sup> environments using weighted data. The analysis was run using unweighted data as well, and we did not find significant differences, suggesting the absence of a nonresponder bias.

## Results

As shown in **Table 1**, BC physicians were slightly more likely to be male, middle-aged, and born outside of Canada than were other Canadian physicians. They were more likely to be family physicians and to practise in community hospitals and in settings that were urban/suburban rather than inner city. They were also more likely to practise in a private office/clinic, freestanding clinic, or nursing home, and less likely to practise in academe. Their primary professional income sources were more likely to be fee-for-service or service contracts, and BC physicians were less likely to be salaried or capitated.

**Table 2** demonstrates that BC physicians' physical and mental health and their disability status were extremely similar to those of all Canadian physicians, though they were slightly more likely to have disability insurance.

BC physicians and all Canadian physicians had similar BMI readings, with a BMI of 25 or less reported by 57% of physicians in BC and 55% of physicians in other provinces. Regarding personal health habits (**Table 3**), BC physicians resembled all Canadian physicians in their use of tobacco, alcohol, and supplementary calcium and other vitamins/minerals. Some differences in health habits were found, including BC physicians' fruit and vegetable intake (**Table 4**), which was less than that of all Canadian physicians. While BC physicians exercised considerably more than other Canadian physicians, 42% of them did not meet Centers for Disease Control and Prevention (CDC) physical activity guidelines;<sup>4</sup> this is true for 39% of BC physicians who trained in Canada, 19% of BC physicians who trained in the US, and 52% of those trained in another country ( $P = .02$ ; data not shown).

**Table 2. General health and disability status of physicians surveyed.**

|  | %* in BC | % in Canada |
|--|----------|-------------|
| <b>General health status (<math>P = .3</math>)<sup>†</sup></b>   |          |             |
| Excellent  | 27       | 24          |
| Very good  | 42       | 42          |
| Good   | 23       | 25          |
| Fair   | 7        | 7           |
| Poor   | 1        | 1           |
| <b>Physical health made it difficult to work in past month (<math>P = .7</math>)</b>                   |          |             |
| None of the time   | 77       | 76          |
| Some of the time   | 19       | 19          |
| Half of the time   | 2        | 2           |
| Most of the time   | 1        | 1           |
| All of the time  | 1        | 1           |
| <b>Mental health status<sup>‡</sup></b>  |          |             |
| Ever $\geq 2$ weeks of anhedonia? ( $P = .99$ )  | 21       | 21          |
| Ever depressed $\geq 2$ weeks? ( $P = .1$ )  | 27       | 23          |
| During those $\geq 2$ weeks, did you think a lot about death? ( $P = .7$ )                             | 34       | 36          |
| <b>Mental health made it difficult for me to work in the past month (<math>P = .8</math>)</b>          |          |             |
| None of the time   | 73       | 73          |
| Some of the time   | 22       | 22          |
| Half of the time   | 3        | 2           |
| Most of the time   | 2        | 2           |
| All of the time  | 0        | 1           |
| <b>Disability status</b>   |          |             |
| <b>Does a long-term health condition reduce your work activity? (<math>P = .99</math>)<sup>§</sup></b> |          |             |
| Never  | 76       | 76          |
| Sometimes  | 20       | 20          |
| Often  | 4        | 4           |
| <b>Have you modified your current work environment because of a disability? (<math>P = 1.0</math>)</b> |          |             |
| No   | 87       | 88          |
| Yes, practising with minor disability-related work modifications                                       | 7        | 7           |
| Yes, practising with major disability-related work modifications                                       | 6        | 6           |
| <b>It is important for me to have disability insurance (<math>P = .3</math>)</b>                       |          |             |
| Strongly agree   | 44       | 47          |
| Agree  | 43       | 39          |
| Neither agree nor disagree   | 9        | 9           |
| Disagree   | 3        | 4           |
| Strongly disagree  | 1        | 2           |
| <b>Do you have disability insurance? (<math>P = .03</math>)</b>  |          |             |
| Yes  | 89       | 86          |
| <b>I am satisfied with my disability insurance (<math>P = .5</math>)</b>                               |          |             |
| Strongly agree   | 22       | 24          |
| Agree  | 51       | 49          |
| Neither agree nor disagree   | 16       | 15          |
| Disagree   | 10       | 9           |
| Strongly disagree  | 1        | 2           |
| <b>Have you ever been denied disability insurance? (<math>P = .2</math>)</b>                           |          |             |
| Yes  | 12       | 10          |

\*Sums of percentages do not total 100 in cases where respondents were allowed to choose more than one response; <sup>†</sup> $P$ -values for BC vs Canadian physicians included; <sup>‡</sup>Questions used to gather data on this topic were taken verbatim from the Canadian Community Health Survey and the National Survey of Work and Health of Nurses; <sup>§</sup>Question used to gather data was taken verbatim from the Canadian Community Health Survey.

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**Table 3. Personal health habits of physicians surveyed.**

|   | %* in BC | % in Canada | % BC female | % Canada female | % BC male | % Canada male | P-value total BC vs Canada |
|---|----------|-------------|-------------|-----------------|-----------|---------------|----------------------------|
| <b>Tobacco use</b>  |          |             |             |                 |           |               |                            |
| <b>Among ever-smokers, do you now smoke cigarettes?</b>                         | 5.0      | 5.0         | 6           | 5               | 5         | 5             | .99                        |
| Occasionally  | 3.0      | 4.0         | 3           | 3               | 3         | 4             |                            |
| Not at all  | 91.0     | 91.0        | 91          | 92              | 91        | 91            |                            |
| <b>When did you stop smoking cigarettes? (ex-smokers only)</b>                  |          |             |             |                 |           |               | .5                         |
| < 1 year ago  | 1.0      | 2.0         | 0           | 1               | 1         | 3             |                            |
| 1 to 2 years ago  | 1.0      | 2.0         | 0           | 2               | 1         | 2             |                            |
| 3 to 5 years ago  | 3.0      | 4.0         | 0           | 3               | 4         | 4             |                            |
| > 5 years ago   | 95.0     | 92.0        | 100         | 94              | 93        | 91            |                            |
| <b>Have you smoked cigars in the past month?</b>                                |          |             |             |                 |           |               |                            |
| Yes   | 5.0      | 4.0         | 2           | 1               | 6         | 5             | .5                         |
| <b>Used chewing tobacco or snuff?</b>   |          |             |             |                 |           |               |                            |
| Yes   | 1.0      | 0.4         | 0.4         | 0.4             | 1         | 0.4           | .8                         |
| <b>Smoked a pipe?</b>   |          |             |             |                 |           |               |                            |
| Yes   | 2.0      | 1.0         | 1           | 0.4             | 1         | 1             | .7                         |
| <b>Smoked part or all of a cigarette?</b>                                       |          |             |             |                 |           |               |                            |
| Yes   | 3.0      | 4.0         | 3           | 3               | 4         | 4             | .7                         |
| <b>Alcohol</b>  |          |             |             |                 |           |               |                            |
| <b>How often do you drink alcohol?</b>  |          |             |             |                 |           |               | .3                         |
| < Once a month  | 20.0     | 20.0        | 28          | 26              | 16        | 17            |                            |
| Once a month  | 5.0      | 5.0         | 6           | 7               | 5         | 5             |                            |
| 2-3 times a month   | 10.0     | 11.0        | 11          | 14              | 9         | 10            |                            |
| Once a week   | 12.0     | 14.0        | 12          | 13              | 12        | 15            |                            |
| 2-3 times a week  | 28.0     | 23.0        | 25          | 24              | 29        | 23            |                            |
| 4-6 times a week  | 19.0     | 18.0        | 15          | 14              | 21        | 21            |                            |
| Every day   | 6.0      | 7.0         | 3           | 3               | 7         | 9             |                            |
| <b>You average how many drinks, when you drink?</b>                             |          |             |             |                 |           |               | .4                         |
| 1 drink   | 51.0     | 49.0        | 63          | 58              | 46        | 44            |                            |
| 2 drinks  | 38.0     | 38.0        | 33          | 35              | 40        | 39            |                            |
| 3 drinks  | 9.0      | 10.0        | 3           | 5               | 12        | 13            |                            |
| 4 drinks  | 2.0      | 3.0         | 1           | 1               | 2         | 3             |                            |
| 5 drinks  | 0.2      | 0.5         | 0           | 0.3             | 0.2       | 1             |                            |
| 6+ drinks   | 0.0      | 0.5         | 0           | 0.4             | 0         | 1             |                            |
| <b>How often in the past 12 months have you had ≥ 5 drinks on one occasion?</b> |          |             |             |                 |           |               | .6                         |
| Never   | 70.0     | 71.0        | 80          | 81              | 66        | 65            |                            |
| < Once a month  | 22.0     | 20.0        | 16          | 15              | 25        | 23            |                            |
| Once a month  | 4.0      | 5.0         | 2           | 2               | 5         | 6             |                            |
| 2-3 times a month   | 3.0      | 3.0         | 1           | 1               | 3         | 3             |                            |
| Once a week   | 1.0      | 1.0         | 0.4         | 0.3             | 1         | 1             |                            |
| > Once a week   | 0.2      | 1.0         | 0           | 0.4             | 0.2       | 1             |                            |
| <b>Supplements</b>  |          |             |             |                 |           |               |                            |
| <b>Do you consume multivitamins/minerals?</b>                                   |          |             |             |                 |           |               | .1                         |
| Daily   | 84.0     | 87.0        | 80          | 86              | 86        | 88            |                            |
| Weekly  | 12.0     | 10.0        | 17          | 11              | 11        | 9             |                            |
| <b>Do you consume calcium?</b>  |          |             |             |                 |           |               | .3                         |
| Daily   | 89.0     | 91.0        | 83          | 86              | 93        | 95            |                            |
| Weekly  | 9.0      | 7.0         | 15          | 11              | 6         | 4             |                            |
| <b>Do you consume other vitamin/mineral supplements?</b>                        |          |             |             |                 |           |               | .4                         |
| Daily   | 91.0     | 93.0        | 90          | 91              | 92        | 94            |                            |
| Weekly  | 7.0      | 6.0         | 8           | 7               | 6         | 5             |                            |

\*Sums of percentages do not total 100 in cases where respondents were allowed to choose more than one response.

BC physicians' personal screening practices were generally similar to all Canadian physicians' (Table 5), although BC female physicians were somewhat more likely to have had a Pap smear in the past year than were all Canadian female physicians (55% vs 47%,  $P = .05$ ), and BC male physicians were somewhat less likely ( $P = .05$ , data not shown) to have had a testicular exam by a clinician. BC physicians who have been trained in a Canadian medical school are more likely to have had a Pap test in the last year than those trained in the US or another country (56% vs 44%, or 44%, data not shown); for all Canadian women physicians, those trained in Canada (48%) and the US (49%) were more likely than those trained elsewhere to have had a Pap test (39%).

BC physicians' personal and professional attitudes were also very similar to those of all Canadian physicians, as was their knowledge of available mental and physical health resources (Table 6, online only at [www.bcmj.org/physical-and-mental-health-status-and-health-practices-physicians-british-columbia](http://www.bcmj.org/physical-and-mental-health-status-and-health-practices-physicians-british-columbia)).

While BC and other Canadian physicians have generally similar levels of professional burnout, other Canadian physicians say they are less likely to ever feel cynical, and more frequently feel exhilarated by their work than BC physicians do (Table 7, online only at [www.bcmj.org/physical-and-mental-health-status-and-health-practices-physicians-british-columbia](http://www.bcmj.org/physical-and-mental-health-status-and-health-practices-physicians-british-columbia)).

## Conclusions

Most personal and professional characteristics of BC physicians are positive and are similar to those of other Canadian physicians. However, there are some differences and some areas worth targeting for health promotion.

Although the demographics and work environments of BC physicians

**Table 4. Exercise habits and diet of physicians surveyed.**

|  | BC  | Canada | BC female | Canada female | BC male | Canada male | P-value total |
|--|-----|--------|-----------|---------------|---------|-------------|---------------|
| <b>Mean minutes/week of exercise</b>               |     |        |           |               |         |             |               |
| Total  | 335 | 291    | 324       | 268           | 341     | 304         | .0001         |
| Mild   | 135 | 128    | 138       | 117           | 132     | 133         | .3            |
| Moderate   | 95  | 83     | 94        | 78            | 96      | 86          | .02           |
| Vigorous   | 112 | 85     | 98        | 76            | 119     | 91          | < .0001       |
| <b>Mean times/day eating fruits and vegetables</b> |     |        |           |               |         |             |               |
|  | 4.3 | 4.7    | 4.9       | 5.2           | 4.1     | 4.4         | < .0001       |
| <b>Mean caffeine servings/day</b>                  |     |        |           |               |         |             |               |
|  | 1.8 | 1.8    | 1.7       | 1.6           | 1.9     | 1.9         | .2            |

differed from other Canadian physicians in only a few ways, these differences may be significant. For instance, the fact that BC physicians were less likely to practise in inner city settings or in academe, plus the fact that BC has a higher percentage of physicians born outside Canada, suggests that there may be insufficient medical faculty to train physicians to meet the future health care workforce needs of the province. While policymakers should expect to see this situation improved by the expansion of UBC's Faculty of Medicine, this should be monitored.

BC physicians' physical and mental health and their disability status were extremely similar to those of all Canadian physicians, though BC physicians were slightly more likely to have disability insurance. Nonsalaried physicians working in BC are eligible to apply for disability insurance under an agreement between the BCMA and the Ministry of Health Services,<sup>5</sup> while physicians in other provinces must self-fund 100% of their disability insurance (oral communication with Sandie Braid, director, Insurance Department, BCMA, 1 February 2010). Given this situation, it is somewhat surprising that the differential rate of disability insurance is not larger.

BC physicians' average fruit and vegetable intake was less than

that of Canadian physicians overall ( $P < .0001$ ), and 42% do not meet CDC physical activity guidelines. However, BC physicians' exercise habits are still considerably better than those of other Canadian physicians: BC physicians averaged 207 minutes per week of exercise, meeting the Canadian Task Force on Preventive Health Care's<sup>6</sup> recommended requirement of 30-plus minutes most days of the week. This echoes trends in the BC general population, the most active of all the provinces: 55% of British Columbians over age 20 are moderately physically active.<sup>7</sup>

This finding suggests that a number of factors may encourage physical activity in BC, including the natural and built environment, the provincial culture, and the types of people who choose to live in BC. If such factors were identified for physicians (and others), they could be promoted to further increase physical activity here and elsewhere in Canada among physicians and their patients. Importantly, physicians could then serve as even better role models for the general population: physicians who have healthy personal habits are more likely to counsel their patients on related prevention issues,<sup>1</sup> and those who disclose their own healthy habits (including exercise and diet) are perceived as more believable and motivating than others.<sup>8</sup>

**Table 5. Health screening practices of physicians surveyed.**

| Practices                                       | %* in BC | % in Canada | % BC female | % Canada female | % BC male | % Canada male | P-value total BC vs Canada |
|---|----------|-------------|-------------|-----------------|-----------|---------------|----------------------------|
| <b>Physical checkup</b>                         |          |             |             |                 |           |               | .2                         |
| < 1 year  | 43.0     | 41          | 51          | 48              | 39        | 36            |                            |
| 1 to < 2 years                                  | 22.0     | 22          | 27          | 25              | 20        | 21            |                            |
| 2 to < 3 years                                  | 8.0      | 9           | 7           | 9               | 8         | 9             |                            |
| 3 to < 4 years                                  | 5.0      | 4           | 3           | 3               | 6         | 4             |                            |
| 4 to < 5 years                                  | 4.0      | 3           | 3           | 2               | 4         | 4             |                            |
| ≥ 5 years                                       | 11.0     | 15          | 6           | 9               | 14        | 18            |                            |
| <b>Blood pressure check</b>                     |          |             |             |                 |           |               | .6                         |
| < 1 year  | 66.0     | 68          | 70          | 70              | 64        | 67            |                            |
| 1 to < 2 years                                  | 18.0     | 17          | 19          | 18              | 18        | 16            |                            |
| 2 to < 3 years                                  | 5.0      | 6           | 4           | 6               | 6         | 6             |                            |
| 3 to < 4 years                                  | 4.0      | 3           | 4           | 2               | 4         | 3             |                            |
| 4 to < 5 years                                  | 1.0      | 1           | 1           | 1               | 1         | 2             |                            |
| ≥ 5 years                                       | 5.0      | 4           | 3           | 2               | 6         | 5             |                            |
| Never   | 1.0      | 1           | 0           | 1               | 1         | 1             |                            |
| <b>Breast or testicular exam (by clinician)</b> |          |             |             |                 |           |               | .3                         |
| < 1 year  | 35.0     | 32          | 56          | 50              | 25        | 21            |                            |
| 1 to < 2 years                                  | 21.0     | 18          | 27          | 25              | 18        | 15            |                            |
| 2 to < 3 years                                  | 7.0      | 7           | 6           | 9               | 7         | 7             |                            |
| 3 to < 4 years                                  | 4.0      | 4           | 4           | 4               | 4         | 4             |                            |
| 4 to < 5 years                                  | 3.0      | 3           | 0.4         | 2               | 4         | 3             |                            |
| ≥ 5 years                                       | 11.0     | 13          | 4           | 6               | 15        | 17            |                            |
| Never   | 19.0     | 23          | 3           | 4               | 27        | 33            |                            |
| <b>Flu vaccine</b>                              |          |             |             |                 |           |               | .7                         |
| < 1 year  | 78.0     | 75          | 80          | 76              | 77        | 75            |                            |
| 1 to < 2 years                                  | 8.0      | 10          | 8           | 11              | 8         | 9             |                            |
| 2 to < 3 years                                  | 3.0      | 3           | 3           | 3               | 2         | 3             |                            |
| 3 to < 4 years                                  | 1.0      | 1           | 0           | 1               | 1         | 1             |                            |
| 4 to < 5 years                                  | 0.2      | 1           | 0           | 0.2             | 0.4       | 1             |                            |
| ≥ 5 years                                       | 1.0      | 2           | 3           | 2               | 1         | 2             |                            |
| Never   | 9.0      | 8           | 7           | 7               | 10        | 9             |                            |
| <b>Cholesterol measurement</b>                  |          |             |             |                 |           |               | .4                         |
| < 1 year  | 41.0     | 45          | 30          | 35              | 46        | 50            |                            |
| 1 to < 2 years                                  | 20.0     | 21          | 20          | 23              | 20        | 19            |                            |
| 2 to < 3 years                                  | 13.0     | 11          | 15          | 12              | 11        | 10            |                            |
| 3 to < 4 years                                  | 6.0      | 5           | 11          | 6               | 4         | 4             |                            |
| 4 to < 5 years                                  | 3.0      | 3           | 2           | 2               | 4         | 3             |                            |
| ≥ 5 years                                       | 7.0      | 7           | 5           | 7               | 7         | 7             |                            |
| Never   | 11.0     | 10          | 17          | 15              | 8         | 7             |                            |
| <b>Mammography</b>                              |          |             |             |                 |           |               | .3                         |
| < 1 year  |          |             | 38          | 29              |           |               |                            |
| 1 to < 2 years                                  |          |             | 17          | 17              |           |               |                            |
| 2 to < 3 years                                  |          |             | 4           | 5               |           |               |                            |
| 3 to < 4 years                                  |          |             | 1           | 2               |           |               |                            |
| 4 to < 5 years                                  |          |             | 1           | 2               |           |               |                            |
| ≥ 5 years                                       |          |             | 4           | 4               |           |               |                            |
| Never   |          |             | 35          | 42              |           |               |                            |
| <b>Pap smear</b>                                |          |             |             |                 |           |               | .05                        |
| < 1 year  |          |             | 55          | 47              |           |               |                            |
| 1 to < 2 years                                  |          |             | 30          | 29              |           |               |                            |
| 2 to < 3 years                                  |          |             | 7           | 11              |           |               |                            |
| 3 to < 4 years                                  |          |             | 2           | 4               |           |               |                            |
| 4 to < 5 years                                  |          |             | 3           | 2               |           |               |                            |
| ≥ 5 years                                       |          |             | 1           | 6               |           |               |                            |
| Never   |          |             | 2           | 1               |           |               |                            |

\*Sums of percentages do not total 100 in cases where respondents were allowed to choose more than one response.

Population obesity rates are also significantly lower in BC than other provinces.<sup>9</sup> While BC physicians trend toward lower BMI readings when compared with other Canadian physicians, the difference is not statistically significant. This reinforces the importance of targeting physicians for health promotion interventions, especially for physical activity, and fruit and vegetable consumption.

BC physicians' cigarette and alcohol consumption habits were similar to those of other Canadian physicians. As in the US (where about 4% of physicians smoke cigarettes),<sup>10,11</sup> only 3.3% of Canadian physicians smoke, compared with 18% of Canadian women and 15% of Canadian men in the general population.<sup>12</sup> Most (75% of female physicians and 83% of male physicians) consume alcohol at least monthly, almost identical to the 77% of Canadian women and 82% of Canadian men who report drinking alcohol in the past year.<sup>13</sup> But (as reported among US female physicians),<sup>10</sup> both BC and other Canadian physicians were much less likely to report heavy drinking (5 or more drinks on one occasion once a month or more often in the past 12 months) than was the general population: 3.4% of BC female physicians (vs 3.7% of Canadian female physicians and 9.6% of Canadian women) and 9.2% of BC male physicians (vs 11% of Canadian male physicians and 24% of Canadian men).<sup>13</sup> The majority of BC physicians report never binge drinking (80% for females, 66% for males).

Regarding professional burnout, BC physicians report similar levels reported by other Canadian physicians. On the positive side, BC physicians more strongly endorsed indicators of value congruence, such as sharing health system values and feeling that personal career goals are supported, than did other Canadian physi-



cians. However, BC physicians were also more likely to feel strained by work and cynical about their contribution, and were less exhilarated by their work. Overall, these results indicate that when comparing the work experience of BC physicians with their counterparts across Canada, the similarities are more striking than the differences. However, there are a few indicators that BC physicians are both more idealistic (specifically their stronger endorsement of value congruence), and are experiencing more strain than their counterparts in other provinces.<sup>14</sup> The most effective burnout interventions develop qualities of the work environment through organizational development, the personal experiences of individuals through therapy,<sup>15</sup> and collegial relationships among health care providers.<sup>16</sup>

Our next steps with these data will involve formulating interventions to further improve the health of BC physicians. This will serve both BC doctors and their patients, as there is a strong and consistent relationship between physicians' personal health choices and the recommendations they make to their patients.<sup>1</sup> Interventions should reduce negative provincial disparities (such as lower fruit and vegetable consumption), and promote areas where physician role-modeling may be most influential (such as exercise).

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#### Competing interests

Dr Clarke acknowledges that as the executive director of the Physician Health Program his interests may be affected by the publication of this article.

#### References

1. Frank E. Physician health and patient care. *JAMA* 2004;291:637.
2. Frank E, Segura C. Health practices of Canadian physicians. *Can Fam Physician* 2009;55:810-811.e1-7.
3. The R project for statistical computing. [www.r-project.org](http://www.r-project.org) (accessed 17 August 2009).
4. Centers for Disease Control and Prevention. How much physical activity do you need? [www.cdc.gov/physicalactivity/everyone/guidelines/index.html](http://www.cdc.gov/physicalactivity/everyone/guidelines/index.html) (accessed 12 August 2009).
5. Benefits Subsidiary Agreement, 1 November 2007. Schedule A—Physician Disability Insurance Program. [www.health.gov.bc.ca/msp/legislation/pdf/APPENDIX\\_E\\_Benefits\\_Subsubsidiary\\_Agreement.pdf](http://www.health.gov.bc.ca/msp/legislation/pdf/APPENDIX_E_Benefits_Subsubsidiary_Agreement.pdf) (accessed 8 February 2010).
6. Canadian Task Force on Preventive Health Care. Summary Table of Recommendations, Physical Activity Counselling. 1994. [www.canadiantaskforce.ca/\\_archive/index.html](http://www.canadiantaskforce.ca/_archive/index.html) (accessed 18 June 2010).
7. Canadian Fitness and Lifestyle Research Institute. 2008 Physical Activity and Sport Monitors. [www.cflri.ca/eng/statistics/surveys/2008PhysicalActivityMonitor.php](http://www.cflri.ca/eng/statistics/surveys/2008PhysicalActivityMonitor.php) (accessed 8 February 2010).
8. Frank E, Breyan J, Elon L. Physician disclosure of healthy personal behaviors improves credibility and ability to motivate. *Arch Fam Med* 2000;9:287-290.
9. Statistics Canada. Canadian Community

Health Survey: A first look. The Daily. 8 May 2002. [www.statcan.gc.ca/daily-quotidien/020508/dq020508a-eng.htm](http://www.statcan.gc.ca/daily-quotidien/020508/dq020508a-eng.htm) (accessed 8 February 2010).

10. Nelson DE, Giovino GA, Emont SL, et al. Trends in cigarette smoking among US physicians and nurses. *JAMA*. 1994;271:1273-1275.
11. Frank E, Brogan D, Mokdad AH, et al. Health-related behaviors of women physicians vs other women in the United States. *Arch Int Med* 1998;158:342-348.
12. Statistics Canada. National population health survey. Smoking status, by sex, household population aged 12 and over, Canada and provinces, 1994/95-1998/99. [www.statcan.gc.ca/pub/82-221-x/00502/t/th/4149280-eng.htm](http://www.statcan.gc.ca/pub/82-221-x/00502/t/th/4149280-eng.htm) (accessed 8 February 2010).
13. Statistics Canada. Heavy drinking, by age group and sex. [www40.statcan.ca/101/cst01/health79b-eng.htm](http://www40.statcan.ca/101/cst01/health79b-eng.htm) (accessed 8 February 2010).
14. Leiter M, Frank E, Matheson T. Demands, values, and burnout: Relevance for physicians. *Can Fam Physician* 2009;55:1224.
15. Maslach C, Schaufeli WB, Leiter MP. Job burnout. *Ann Rev Psychol* 2001;52:397-422.
16. Leiter MP, Laschinger HKS, Day A, et al. CREW: Civility, respect, and engagement at work. Presented at the 117th Annual Convention of the American Psychological Association, Toronto, ON, August 2009. **BCMJ**