

# Women in Medicine: Practice Patterns and Attitudes

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Please Cite:

Williams, A. P., Domnick-Pierre, K., Vayda, E., Stevenson, H. M., & Burke, M. (1990). Women in medicine: Practice patterns and attitudes. *CMAJ: Canadian Medical Association journal*, 143(3), 194–201.

## Women in medicine: practice patterns and attitudes

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Increasing numbers of women are entering medicine in Canada. In 1959 women accounted for 6% of the medical school graduates, but by 1989 they accounted for 44%. Although there has been little systematic investigation of the impact of this increase on Canada's health care system, there are grounds for believing that female physicians bring with them distinctive values and interests, which may be reflected in the way they conduct their professional practices. We used data from a recent national survey of 2398 Canadian physicians to examine differences between women and men in their practices and their attitudes toward health care issues. Significant differences were found in the organization and management of the practices. Women preferred group over solo practice and were overrepresented in community health centres, health service organizations and centres locaux de services communautaires in Quebec. One-third of the women, as compared with half of the men, were in specialties. Even after adjusting for differences in workloads the incomes of the women were significantly lower than those of the men. Only minor differences were observed in the assessment of the health care system and alternative modes of organizing health care services. We believe that the differences were due to the double workload of women as professionals and family caregivers and the powerful socialization effects of medical education. As women overcome their minority status in the medical profession, differences between the sexes may become more apparent. Thus, the extent and effects of the progressive increase in the number of women in Canadian medicine should be assessed on an ongoing basis.

De plus en plus de femmes entrent dans la profession médicale au Canada. Alors qu'en 1959 elles comptaient pour 6% des diplômés, en 1989 le chiffre est de 44%. Si on a peu étudié systématiquement l'incidence de cette augmentation sur les soins de santé, il y a des raisons de croire que les femmes médecins apportent à leur exercice des valeurs particulières et des soucis qui leur sont propres. À partir d'un relevé récent effectué dans tout le Canada sur 2398 médecins, nous examinons les différences entre les hommes et les femmes dans leur style d'exercice et leurs attitudes devant les questions concernant les services de santé. Parmi les différences significatives, notons que les femmes préfèrent exercer en groupe plutôt que seules; elles sont relativement plus nombreuses que les hommes au sein des centres de santé communautaire, des organisations de services de santé et, au Québec, des centres locaux de services communautaires. Seul le tiers des femmes, contre la moitié des hommes, est en spécialité. Même si on tient compte de la somme de travail, les femmes ont un revenu moyen moindre que celui des hommes. D'autre part, il y a peu de différences dans leurs opinions sur l'organisation des services de santé et les méthodes de remplacement pour les assurer. Nous attribuons

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les différences observées à la double responsabilité professionnelle et familiale des femmes et à la forte influence socialisatrice des études de médecine. Au fur et à mesure que les femmes cesseront de constituer une minorité dans la profession, il se peut que les différences liées au sexe s'accroissent. C'est une question qu'il faudra continuer d'examiner.

Canadian medicine is being transformed by the increasing numbers of women entering the profession. In 1959 women accounted for 6% of Canadian medical school graduates, in 1981 for more than 33% and in 1989 for 44%.<sup>1</sup> In 1986-87 in Quebec more than half of the first-year medical students were women.<sup>2</sup> A similar, though less marked, shift has occurred in the United States.<sup>3</sup> In Ontario in 1986 just over 17% of registered physicians were women; of these, 21% were family physicians and 14% specialists.<sup>4</sup>

Changes in the female:male ratio could have an important impact on the health care system. Both similarities and differences in practice patterns and attitudes have been reported. In the United States women are more likely than men to enter general practice and to work in urban settings, in groups and on salary.<sup>5-8</sup> In Quebec female physicians work fewer hours on average than their male counterparts; this has influenced health care planners to forecast a shortfall of physicians' services.<sup>2</sup> There is also evidence that female physicians have different attitudes toward health care, which may change the "style" of medical practice as more women enter the profession. Female physicians have been described as being more "humanistic" and nurturing, more attuned to the psychosocial aspects of patient care, more likely to stress the desire to help people as a career motivation and less likely to accept the status quo in medicine and the technologic focus of the biomedical disease model than male physicians.<sup>9-14</sup> Because of their more humanistic orientation toward medical practice and their more marked inclination toward change in health care delivery female physicians may also be less concerned with the economic autonomy of the profession and defences of the fee-for-service system, with its inherent pressures to maximize workloads and incomes.<sup>15</sup>

However, there is also evidence that the orientation of female and male physicians is similar. Even if there are differences upon entry to medical school, they may be largely overcome by the powerful socialization effects of years of medical training.<sup>16</sup> Recent data from the United States have indicated that there are some differences in the sociopolitical attitudes between female and male freshman medical students but that these differences are less apparent among more advanced students.<sup>12</sup> Processes of self-selection to a historically male-dominated profession may also minimize initial differences between women and men choosing medical careers.<sup>11</sup> Ob-

served differences in the workloads and practice patterns may be due less to women having distinctive orientations toward medicine than to their remaining the childbearers and principal child care providers and thus having to organize their practices to facilitate workload management and scheduling.<sup>13</sup>

Studies in Canada have also suggested potentially important similarities and differences between women and men in professional practice.<sup>2,17-20</sup> We used data from a recent national survey of 2398 physicians to examine the workloads, practice patterns, incomes and attitudes toward health care of female and male physicians in Canada.

## Methods

A national survey of Canadian physicians was conducted at the Institute for Social Research, York University, Toronto, between November 1986 and March 1987. The survey was designed as a follow-up to one completed in 1982.<sup>19</sup> Self-administered questionnaires were mailed to the 2087 respondents from the 1982 survey and to an additional 2000 physicians selected randomly, within provinces, from the 1986 *Canadian Medical Directory*. Reminders by mail and telephone, a model adapted from the Dillman Total Design Method,<sup>21</sup> yielded 2398 usable questionnaires, an effective response rate of 68%.<sup>22</sup> This rate was adjusted for ineligible respondents (residents, interns and physicians no longer practising in Canada) and "dead addresses" (physicians who were deceased or no longer in the country, or whose correct address could not be determined after extensive searches of professional and telephone directories).

To test for bias from the inclusion of a panel component a series of statistical comparisons were made between physicians who completed questionnaires in 1982 and 1986 and those who responded only in 1982. These comparisons looked at demographic characteristics (e.g., sex, year of birth, country of origin and province), professional characteristics (e.g., practice type, specialty, hours worked, patient load and professional income), attitudes toward medicare and support for extra-billing, and levels of stress in practice. No significant differences were observed. Inclusion of the panel therefore did not introduce a measurable response-nonresponse bias into the 1986 results.<sup>22</sup>

Because the 1986 survey was not specifically designed to examine differences between the sexes

the data were insufficient to estimate the differential response rates for women and men. However, as indicated previously, there were no differences in response and nonresponse to the panel component of the survey. In addition, our estimate of the proportion of female physicians in Canada is similar, if not somewhat lower, than the corresponding estimate from a survey of 41 599 physicians completed by the CMA in late 1987 (12.4% v. 16.8%);<sup>23</sup> the difference was due in part to sampling error.<sup>22</sup> Also, the panel component of our survey was established in 1982, and the 1986 sample was chosen from a listing of physicians that, because of time lags in updating and publication, was an accurate representation of the profession a year or more earlier. This meant that no physician in the survey graduated from medical school later than 1984. Because of the rapid influx of women into medicine during this period our results should be interpreted as reflecting the proportion of women in the profession before the point at which the survey was conducted. Despite this qualification the patterns of differences observed in our survey are very similar to those reported elsewhere.<sup>5,6</sup>

To assess qualitatively and supplement the survey results as they related to differences between the sexes the female respondents to the 1986 survey who lived in the Toronto region were invited to partici-

pate in a follow-up focus group at the University of Toronto on June 1, 1988. Of the 25 women invited, 11 participated in a detailed discussion of their practice patterns, the influence of their role as childbearers on practice organization and their attitudes toward patient care and professional incomes. In addition, the differences between the female and male physicians were analysed on the basis of the results of this group discussion.

Cross-tabulations and variable means were used in the analysis to describe differences in the practice patterns and attitudes toward health care. Multiple regression analysis was used to determine whether observed differences could be attributed to sex or to other factors.

## Results

### *Professional practice*

The data in Table 1 confirm women's minority status in the Canadian medical profession. Of the 2398 respondents only 297 (12.4%) were women. However, these data also reflect the rapid increase in the number of women entering medicine in Canada in recent years: 41% of the female physicians, as compared with 14% of the male physicians, graduat-

Table 1: Practice characteristics of 297 female and 2101 male physicians who participated in 1986 survey

Characteristic	Sex; no. (and %) of physicians			Chi-squared value
	Female	Male	Total	
Year graduated				146.2*
1926-55	33 (11.1)	546 (26.0)	579 (24.1)	
1956-65	43 (14.5)	571 (27.2)	614 (25.6)	
1966-75	99 (33.3)	688 (32.7)	787 (32.8)	
1976-84	122 (41.1)	296 (14.1)	418 (17.4)	
Practice type				38.9*
Solo	53 (17.8)	614 (29.2)	667 (27.8)	
Associate	54 (18.2)	296 (14.1)	350 (14.6)	
Group	69 (23.2)	355 (16.9)	424 (17.7)	
Hospital	43 (14.5)	354 (16.8)	397 (16.6)	
Community health centre or centre local de services communautaires	18 (6.1)	43 (2.0)	61 (2.5)	
Mixed	60 (20.2)	439 (20.9)	499 (20.8)	
Specialty				32.5*
General practitioner	200 (67.3)	1040 (49.5)	1240 (51.7)	
Other	97 (32.7)	1061 (50.5)	1158 (48.3)	
Practice location				8.7*
Census metropolitan area	206 (69.4)	1267 (60.3)	1473 (61.4)	
Other	91 (30.6)	834 (39.7)	925 (38.6)	
Fee-for-service earnings, % of total earnings				3.9
≤ 33	50 (16.8)	267 (12.7)	317 (13.2)	
34-65	16 (5.4)	137 (6.5)	153 (6.4)	
66-100	231 (77.8)	1697 (80.8)	1928 (80.4)	

\*p = 0.01.

ed from medical school after 1975. Also, although women constituted only 6% of the physicians in the sample who graduated between 1926 and 1955, they accounted for 29% of those who graduated between 1976 and 1984. Consequently, the female physicians were significantly younger than the male physicians.

The data identified both differences and similarities in the professional practices. Table 1 reveals the tendency reported elsewhere for women to prefer group over traditional solo practice. Only 17.8% of the female physicians were in solo practice, as compared with 29.2% of the male physicians; conversely, 23.2% of the women were in group practice, as compared with 16.9% of the men. However, these differences were observed primarily in private practice; the proportions of women and men who worked in hospitals and other medical institutions were roughly equal (14.5 and 16.8). Although proportionately more women than men reportedly practised in community health centres, health service organizations or centres locaux de services communautaires in Quebec the percentages were small (6.1% and 2.0%). The women and the men were equally reliant on a fee-for-service system; about 80% derived more than two-thirds of their income in this way.

Consistent with the results of earlier research,<sup>5,6,20</sup> the survey revealed that the women were significantly more likely than the men to enter general as opposed to specialty practice (67.3% v. 49.5%) and to work in urban areas (census metropolitan areas) (69.4% v. 60.3%). Although there were too few cases in the sample to calculate stable population estimates, most of the female specialists were in psychiatry, anesthesia, internal medicine and

pediatrics, and few were in surgery or surgical subspecialties.

The female physicians worked significantly fewer hours per week, spent their working hours in different settings and saw fewer patients than their male counterparts did (Table 2). For instance, the women worked 38.1 hours per week on average, as compared with 45.0 hours per week on average for the men, in patient care and other professional activities, including staff meetings and continuing education. This difference, roughly equal to a standard working day, was largely due to the significantly shorter time the female physicians spent in hospitals (10.7 v. 17.0 hours). Although all of the physicians spent about 20 hours per week providing care in their offices, this number represented 52.5% of the total hours per week for the women but only 45.3% for the men. Thus, the women spent proportionately more time providing patient care in their offices and significantly less time in hospitals. Although there were no significant differences in the total patient loads, the women saw fewer patients than the men during their work weeks (90 v. 113). In addition, there were significant differences in the professional incomes; the mean annual net income before taxes was \$103 100 for the men and \$77 000 for the women.

### Attitudes

No substantive differences in attitudes toward health care were identified. Table 3 shows the mean scores, based on multiple-item attitude scales. The first five scales measured attitudes toward the health care system and issues of professional freedom, and

Table 2: Mean workloads per week and incomes of female and male physicians

Workload/income	Sex; mean			Eta*
	Female	Male	Total	
Workload				
Inpatient care, h	6.5	11.0	10.4	0.11
Outpatient care, h	4.2	6.0	5.8	0.07
In-office care, h	20.0	20.4	20.4	0.01
On call, h	17.4	20.9	20.4	0.04
Total,† h	38.1	45.0	44.2	0.13
No. of patients				
Per week	90	113	110	0.08
Total	880	1041	1022	0.04
Length of vacation, wk‡	4.6	4.5	4.5	0.02
Income, × \$1000§	77.0	103.1	99.8	0.20

\*Measurement of the statistical relation between interval dependent and nominal independent variables.<sup>24</sup> Extremes are 0 and 1, higher scores indicating stronger relations.

†Includes time spent on inpatient, outpatient and in-office care, medicare paperwork, committee work or compulsory staff meetings, and continuing medical education and reading.

‡During the previous 12 months.

§Net income for 1985 before taxes.

||p = 0.01.

the last three concerned alternative modes of providing health care services through increased emphasis on public health, community health centres and group practice.

There were no differences between the women and the men in the scores of the first five scales. For instance, on the first scale ("approve of medicare") both groups had an mean score of 2.8, just below the midpoint score of 3; this indicated a lukewarm response to the Canadian medicare system. Similarly, both groups had a mean score of 3.1 on the next scale ("satisfaction with medicare"); this reflected a slightly more positive assessment of medical practice under government health insurance. Both the women and the men supported the principles that physicians should have economic autonomy (3.5) and that patients should pay hospital user fees (3.3). However, most of the physicians did not support a return to private and commercial control of the Canadian health care system (2.8 for the women and 2.9 for the men).

Small but statistically significant differences were observed in the scores of the remaining three scales. The female physicians were slightly more approving of community health measures and incen-

tives to encourage forms of group medicine and less approving of institutional care than their male counterparts were; however, these differences were not substantive.

### Multivariate analysis

Our data suggested that the women and the men conducted their practices in different ways. To determine whether these differences were actually related to sex or whether they reflected the women's tendency to be younger general practitioners who spent fewer hours in practice than average we conducted multiple regression analyses, controlling the simultaneous and correlated effects of sex, specialty, year of graduation, practice type, number of patient visits and hours worked on a number of key, dependent variables. The results of four such analyses (total hours worked per week, number of patient visits per week, annual net income before taxes for 1985 and degree of approval of community-based health measures) are in Table 4. The figures are the dependent variable means for the respondents calculated before (unadjusted) and after (adjusted) other independent variables were controlled. For example,

Table 3: Mean scores of ideologic variables for female and male physicians

Variable	Sex; mean score*			Eta
	Female	Male	Total	
Approve of medicare	2.8	2.8	2.8	0.04
Satisfied with medicare	3.1	3.1	3.1	0.02
Support economic autonomy	3.5	3.5	3.5	0.00
Approve of user fees	3.3	3.3	3.3	0.03
Approve of privatization	2.8	2.9	2.9	0.03
Approve of alternative organization	2.6	2.4	2.4	0.08†
Approve of community health	3.7	3.6	3.6	0.08†
Approve of group incentives	3.0	2.9	2.9	0.07†

\*Scores are from 1 to 5, higher scores indicating greater approval, support or satisfaction.  
†p = 0.01.

Table 4: Unadjusted and adjusted means for selected variables

Variable	Sex; mean				Total	r value
	Female		Male			
	Unadjusted	Adjusted	Unadjusted	Adjusted*		
Total workload, h	38.0†	39.4†‡	45.0	46.0‡	45.2	0.34†
No. of patients per week	90.6†	93.6†§	113.0	107.8§	106.0	0.43†
Income, × \$1000	77.0†	86.2†	103.1	100.2	98.4	0.44†
Approve of community health, score	3.7†	3.7	3.6	3.6	3.6	0.21†

\*Category used for comparison in regression analysis.

†p = 0.01.

‡Adjusted for specialty, year of graduation from medical school, type of practice and number of patients per week.

§Adjusted for specialty, year of graduation, type of practice and total workload.

||Adjusted for specialty, year of graduation, type of practice, number of patients per week and total workload.



the adjusted means for the total number of hours worked were estimated through a multiple regression analysis that included dummy variables for sex, specialty, year graduated, practice type and number of patient visits. Thus, the results statistically compare female and male physicians who had similar professional characteristics.

In three of the four analyses the differences observed earlier remained significant after other independent variables were controlled. For example, the unadjusted means for the first dependent variable were 38.0 among the women and 45.0 among the men; the corresponding adjusted means were 39.4 and 46.0 respectively. These findings indicate that the differences in the hours worked were due not simply to differences in the practices of specialists and general practitioners, younger and older physicians, physicians in different practice types and those with larger or smaller patient loads but, rather, to differences between men and women. The same was true for the number of patient visits; although the professional characteristics were similar the female physicians saw significantly fewer patients than the male physicians. The income differences reported earlier persisted even after we controlled for patient visits, hours worked, age and specialization; therefore, the significantly lower incomes of the women were not because more women than men were general practitioners working shorter hours and seeing fewer patients.

The adjusted differences in the fourth variable, which measured approval of community-based health measures, were not significant. Although not shown in Table 4, the small but statistically significant differences in attitudes toward alternative modes of health care organization and incentives for group practice became insignificant through multiple regression analysis. Thus, even the small attitudinal differences reported earlier could not be attributed to differences between the women and the men.

## Discussion

Our findings suggest that attitudes toward health care policy issues are essentially similar among female and male physicians, although there are significant differences in the way they organize and conduct their practices. These differences have important implications for health care planning but suggest no major or imminent challenge to the existing organization or operation of the Canadian health care system.

That women disproportionately entered general practice and worked in urban areas may portend physician shortfalls in specialties such as surgery, especially outside of major Canadian cities. That women worked significantly fewer hours and saw

fewer patients than their male colleagues may likewise signal a general decrease in the volume of medical services provided by physicians or a potential physician shortage. As noted earlier, in Quebec, which has a larger proportion of female physicians than any other province, planners are already estimating the extent of corrections in medical school enrolment necessary to maintain the present levels of service.<sup>2</sup>

Whether observed differences will effect fundamental changes in the way medicine is practised in Canada is a more difficult question to answer. A different style of medicine may be indicated, since the female physicians spent significantly less time in hospitals and more time providing patient care in their own offices than their male counterparts. In addition, the women were less likely to enter solo practice and saw fewer patients than the men; these differences were not simply a function of specialty, age or practice type and suggest that women spend more time with each patient. Especially interesting is the finding that the women earned significantly less than the men with similar levels of experience, practice types and patient loads. Although the reasons are unclear, such differences might be because female physicians provide fewer services per patient visit or a greater proportion of lower-priced services, or because those in salaried positions are paid less than their male counterparts. Similar findings have been reported in the United States;<sup>25,26</sup> female physicians were found to earn less even after the hours worked and the patient loads were controlled.

The differences suggest a greater attentiveness to patients and lower system costs as more women enter medicine; however, there are also important similarities. Although the women were more likely than the men to work in groups, most of them, like the men, continued in private, fee-for-service practice. As well, differences in attitudes toward health care issues were too small to be meaningful. Observed differences in attitudes toward alternative modes of health care organization lost significance after the characteristics other than sex were controlled.

The most important implications of the increasing numbers of women in Canadian medicine appear to be for physician manpower planning. Although women seem to organize and manage their practices in distinctive ways, they may be less likely than men to change how the profession perceives its role or how medical services are provided. This is consistent with a model that attributes organizational differences in women's practices primarily to the imperatives of family life, in which women continue to play a key role as childbearers and child caregivers. The lack of differences in the orientations of the female and the male physicians toward health care issues

may be attributed to the powerful socialization effects of medical school. Self-selection among female applicants to medical schools may also tend to limit heterogeneity in the attitudes of physicians.

There are, of course, alternative explanations of our data. Observed differences in practice organization could have been because female physicians value greater variety and autonomy in life and therefore put less emphasis on their professional work and because they have a greater sensitivity to the personal lives of others and therefore spend more time with their patients. More detailed study is needed to test such competing accounts. Our interpretation, nevertheless, emphasizes the double workload of women and the socialization effects of medical training. Alternative explanations would have been more convincing if there had been more marked differences in the attitudes toward health care issues. If, as some studies have suggested,<sup>7,9,11,12</sup> women are less motivated by financial gain and more concerned with the "caring" aspects of medicine, we might have expected to see less support for the economic autonomy of the profession and more support for alternatives to the dominant, institutionally based "sick care" system. In addition, our explanation of a double workload reflects the results of the focus group session, in which female physicians identified their responsibilities as childbearers and family caregivers as a primary influence on the organization and conduct of their practices.

The possibility of more fundamental change in the Canadian health care system because of the increasing numbers of women entering medicine should not, however, be ruled out. Although, as a minority group in a male-dominated profession women may tend to articulate prevailing values and interests as strongly as, or more strongly than, their male counterparts, they may begin to take more distinctive positions that would reflect possible differences in underlying values as their numbers become more substantial.<sup>27</sup>

## Conclusions

Although it seems certain that the number of women entering medical practice in Canada will continue to increase, the general implications for the health care system remain unclear. To the extent that change is occurring because of the growing number of female physicians, the implications would be strongest for physician manpower planning. However, as women overcome their minority status within the profession there is also the possibility of more fundamental change. Therefore, the extent and effects of the progressive increase in the number of women in Canadian medicine should be documented and assessed on an ongoing basis.

This survey was financed by grants 410-86-0483 and 456-86-2822 from the Social Sciences and Humanities Research Council of Canada.

## References

1. Ryten E: The output of Canadian medical schools in 1989. *Forum* 1989; 22: 7-9
2. Contandriopoulos AP, Fournier MA: *Les effectifs médicaux au Québec. Situation de 1972 à 1986 et projection pour 1990*, Corporation professionnelle des médecins du Québec, 1987: 107
3. AMA Advisory Panel on Women Physicians: The new woman physician: her growing numbers are not yet represented in organized medicine. *Conn Med* 1987; 51: 533-534
4. *Physician Manpower in Ontario, 1988*, Ontario Physician Manpower Data Centre, Toronto, 1989: 23
5. Bobula JD: Work patterns, practice characteristics and incomes of male and female physicians. *J Med Educ* 1980; 55: 826-833
6. Weisman CS, Levine DM, Steinwachs DM et al: Male and female physician career patterns: specialty choices and graduate training. *Ibid*: 813-825
7. Adams EK, Bazzoli GJ: Career plans of women and minority physicians: implications for health manpower policy. *J Am Med Assoc* 1986; 41 (1): 17-20
8. Bowman M, Gross ML: Overview of research on women in medicine — issues for public policy makers. *Public Health Rep* 1986; 5: 513-521
9. Burkett GL, Kurz DEA: A comparison of the professional values and career orientations of male and female medical students: some unintended consequences of U.S. public policy. *Health Policy Educ* 1981; 2: 33-45
10. Cohen ED, Korper SP: Women in medicine: a survey of professional activities, career interruptions and conflict resolutions, trends in career patterns. *Conn Med* 1976; 40: 195-200
11. Eisenberg C: Women as physicians. *J Med Educ* 1983; 58: 534-541
12. Maheux B, Dufort F, Beland F: Professional and sociopolitical attitudes of medical students: gender differences reconsidered. *J Am Med Assoc* 1988; 43 (3): 73-76
13. Levinson W, Tolle SW, Lewis C: Women in academic medicine: combining career and family. *N Engl J Med* 1987; 321: 1511-1517
14. Hayes MD: The impact of women physicians on social change in medicine: the evolution of humane health care delivery systems. *J Am Med Assoc* 1981; 36 (1): 82-83
15. Stevenson HM, Williams AP, Vayda E: Medical politics and Canadian medicare: professional response to the Canada Health Act. *Milbank Q* 1988; 66 (1): 65-104
16. Haas J, Shaffir W: The professionalization of medical students: developing competence and a cloak of competence. In Coburn D, D'Arcy C, Torrance G et al (eds): *Health and Canadian Society: Sociological Perspectives*, Fitzhenry and Whiteside, Toronto, 1981: 201-220
17. Kruger M, Barer M: Factors influencing life cycle activity patterns of general practitioners in British Columbia. Presented at the 2nd Annual Association of Canadian Medical Colleges Physician Manpower Conference, Calgary, Oct 18, 1987
18. Ryten E: The changing demographics of physician supply in Canada: How did we get where we are and where are we going? Does it matter? Physician manpower in Canada. In Watanabe M (ed): *Proceedings of the First and Second Annual Association of Canadian Medical Colleges Physician Manpower Conferences*, U of Calgary Printing Services, Calgary, 1988: 113-139
19. Taylor MG, Stevenson HM, Williams AP: *Medical Perspectives*



- tives on Canadian Medicare, Institute for Social Research, York U, Toronto, 1984
20. Curry L: The effect of sex on physician work patterns. In *Research in Medical Education: Proceedings of the 22nd Annual Conference*, Association of American Medical Colleges, Washington, 1981: 144-150
  21. Dillman DA: *Mail and Telephone Surveys: the Total Design Method*, Wiley, New York, 1978
  22. Northrup D: *Sample and Field Report: 1986 National Survey of Canadian Physicians*, Institute for Social Research, York U, Toronto, 1988: 4-9
  23. Adams O: Canada's doctors — who they are and what they do: Lessons from the CMA's 1986 manpower survey. *Can Med Assoc J* 1989; 140: 212-221
  24. Anderson TR, Zelditch M Jr: *A Basic Course in Statistics*, 2nd ed, HR & W, New York, 1968: 158-159
  25. Silberger AB, Marder WD, Willke RJ: Practice characteristics of male and female physicians. *Health Aff* 1987; 6 (4): 104-109
  26. Ohsfeldt RJ, Culler SD: Differences in income between male and female physicians. *J Health Econ* 1986; 5: 335-346
  27. Kantner RM: *Men and Women of the Corporation*, Basic, New York, 1977: 206-242

## Conferences

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**Nov. 11-13, 1990:** Canadian Hospital Association National Conference on Waste Management for Health Care Facilities

Radisson Hotel, Ottawa

Conferences, Canadian Hospital Association, 100-17 York St., Ottawa, Ont. K1N 9J6; (613) 238-8005, FAX (613) 238-6924

**Nov. 22-23, 1990:** Dual Disorders Conference '90 — Substance Abuse and Mental Disorders: Hands-on Treatment Strategies (sponsored by the Ontario Ministry of Community and Social Services, Toronto area)

Queen Street Mental Health Centre, Toronto

Nancy MacKay, Addiction and Rehabilitation Department, Salvation Army, 496 Richmond St. W, Toronto, Ont. M5V 1Y2; (416) 366-6521

**Nov. 23-24, 1990:** Canadian Bioethics Society 2nd Annual Meeting — Autonomy, Donation and Sharing as Issues in Bioethics

Château Frontenac, Quebec City

Dr. Harry Grantham, Hôtel-Dieu de Québec, 11, côte du Palais, Quebec, PQ G1R 2J6; (418) 691-5075, FAX (418) 691-5331

**Dec. 1-2, 1990:** Society of Toxicology of Canada 23rd Annual Symposium

Holiday Inn Crowne Plaza, Montreal

Dr. Gordon Krip, executive director, Society of Toxicology of Canada, PO Box 517, Beaconsfield, PQ H9W 5V1

**Feb. 26-Mar. 2, 1991:** 7th International Hypoxia Symposium — High Altitude Physiology and Medicine (sponsored by McMaster University and the Arctic Institute of North America in conjunction with the International Society for Mountain Medicine)

Chateau Lake Louise, Lake Louise, Alta.

*Abstract deadline is Nov. 1, 1990.*

Ingrid Ellis, conference coordinator, Rm. 1M10, McMaster University, 1200 Main St. W, Hamilton, Ont. L8N 3Z5; (416) 525-9140, ext. 2182

**Apr. 21-24, 1991:** Canadian Organization for the Advancement of Computers in Health 16th Annual Conference

Sheraton Centre, Toronto

Steven A. Huesing, executive director, Canadian Organization for the Advancement of Computers in Health, 1200-10460 Mayfield Rd., Edmonton, Alta. T5P 4P4; (403) 489-4553, FAX (403) 489-3290

**May 13-14, 1991:** Canadian Life Insurance Medical Officers Association 46th Annual Meeting

Quebec  
Dr. J.L. Guy Tremblay, La Solidarité compagnie d'assurance sur la vie, 925, ch. St-Louis, Québec, PQ G1S 1C1; (418) 688-8710, ext. 273

**May 13-16, 1991:** 7th World Congress on Emergency and Disaster Medicine

Palais de Congrès, Montreal

Ms. Ursula Schwarz, Meeting Secretariat, Kush Medical Communications, 210-16 Four Seasons Place, Etobicoke, Ont. M9B 6E5; (416) 621-5663, FAX (416) 621-5352

**May 23-24, 1991:** 2nd Canadian Epidemiology Research Conference

Edmonton

Dr. Colin Soskolne, conference convenor, 13-103 Clinical Sciences Bldg., University of Alberta, Edmonton, Alta. T6G 2G3; (403) 492-6013, FAX (403) 492-0364

**May 26-29, 1991:** 5th Canadian Congress of Rehabilitation

Prince Edward Hotel, Charlottetown

Dr. A.S. Muzumdar, director and head, Department of Physical Medicine and Rehabilitation, Queen Elizabeth Hospital, PO Box 6600, Charlottetown, PEI C1A 8T5; (902) 566-6060

**May 30-June 1, 1991:** International Conference on Stroke Intercontinental Hotel, Geneva

*Abstract deadline is Jan. 15, 1991.*

Secretariat, International Conference on Stroke, c/o Kuoni Travel Ltd., 7 rue de Berne, CH-1211, Geneva 1, Switzerland; telephone 41-22-732-088, FAX 41-22-731-5078