

Canada's doctors — who they are and what they do: Lessons from the CMA's 1986 manpower survey

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The CMA's inventory of Canada's physicians and their professional activities — the physician resource databank (PRDB) — is being refined and updated continually. Two activities have been going on simultaneously since 1986: the documentation of functions being carried out by every physician practising in Canada and the updating of data obtained in the CMA's Canada-wide 1982¹ and 1986 surveys.

The findings of the 1986 survey confirm trends pinpointed in the original one — that most physicians practising full time are aged 44 or younger, that the proportion of women is growing steadily, and that physicians as a group are working fewer hours.

The reduction in hours worked partly reflects the growing number of women physicians. However, provincial variations suggest that other forces are at play. For example, doctors practising full time in Quebec report the shortest work week, but the greatest amount of time per week in teaching, research and administration. There is a need to study how these findings

relate to income caps and the proportion of salaried physicians in Quebec. The CMA survey also revealed that Canada may be facing personnel shortages in general surgery, anesthesia, obstetrics and gynecology, radiology and psychiatry in the next decade and that about one-third of foreign graduates practising here are in rural areas and constitute up to 60% of the rural practitioners in some provinces.

Methods

The PRDB provided names and addresses, and 50 103 doctors were sent a 21-item, self-administered questionnaire that was a modified version of that used in 1982. Attempts were made to eliminate ambiguity and to make responding easier.

The first mailing, in December 1986, used Dillman's total design method², as in 1982. Two follow-up mailings were done in February and August 1987. The closing date for responses was November 1987.

Physicians who had indicated a preference received a questionnaire in the official language of their choice; others were encouraged to call the CMA collect

if they wanted a questionnaire in the other language.

Coding the responses

Physicians were asked to indicate the level that best described their current professional activities — full time, part time, temporarily not practising, semi-retired or retired. Physicians "temporarily not practising" were asked to explain why. Semi-retired and retired doctors were asked to state the age at which they had entered those categories.

Respondents were also asked to indicate the number of hours per week they usually spent on patient care, research, administration, classroom instruction and other activities. They were to exclude on-call time. Patient care was defined as all direct and indirect professional services provided. Subcategories were:

- Direct patient care regardless of setting;
- Hospital committees;
- Managing your practice.

Other questions sought to determine patterns of continuing medical education, practice structure and salaried provision of patient care.

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Most of Canada's full-time doctors are 44 or younger, the proportion of women is growing steadily, and physicians as a group are working fewer hours.

There appears to have been no change in the proportion of Canadian physicians who graduated from foreign medical schools. Saskatchewan and Newfoundland in particular continue to rely heavily on foreign graduates.

Table I — Overall response from physicians with Canadian addresses, Nov. 1987

Province of residence	Questionnaires (and response rate)			
	All respondents		Eligible respondents*	
	Mailed	Returned (% of total)	Mailed	Returned (% of total)
Newfoundland	967	689 (71.3)	934	656 (70.2)
Prince Edward Island	193	159 (82.4)	192	158 (82.3)
Nova Scotia	1 804	1 490 (82.6)	1 752	1 438 (82.1)
New Brunswick	1 013	843 (83.2)	1 002	832 (83.0)
Quebec	12 745	9 188 (72.1)	12 605	9 048 (71.8)
Ontario	18 865	15 170 (80.4)	18 421	14 726 (79.9)
Manitoba	2 208	1 644 (74.5)	2 110	1 546 (73.3)
Saskatchewan	1 555	1 207 (77.6)	1 547	1 199 (77.5)
Alberta	3 991	3 131 (78.5)	3 919	3 059 (78.1)
British Columbia	6 700	5 714 (85.3)	6 581	5 595 (85.0)
Northwest Territories/ Yukon	62	51 (82.3)	62	51 (82.3)
Canada	50 103	39 286 (78.4)	49 125	38 308 (78.0)

*Excludes physicians who reported they were in postgraduate training.

The demographic section of the questionnaire provided pre-printed data obtained in the last survey and through updating. Physicians were asked to correct errors and to provide missing information.

Respondents listing a specialty and year of certification by the Royal College of Physicians and Surgeons of Canada (RCPSC) or Corporation professionnelle des médecins du Québec (CPMQ) were categorized as specialists. Others were listed as general/family practitioners, clearly a catchall because it includes specialists in family medicine as well as those practising other specialties but not indicating certification.

Statistics Canada designates all areas with a population of fewer than 10 000 residents as rural, and Canada Post assigns the number 0 as the second char-

acter in their postal codes. Using this information, CMA staff categorized physicians as rural or urban practitioners.

Results

Of the 50 103 physicians who were sent the questionnaire, 78.4% responded. Approximately 4.3% were taking postgraduate training and since they were not practising, they were considered ineligible. Thus, 49 125 questionnaires had been mailed to eligible doctors, of whom 38 308 (78%) responded (Table I).

The response rate varied from a low of 70.2% in Newfoundland to a high of 85% in British Columbia. Men and women had comparable response rates, 77.9% and 78.4%, respectively.

Activity levels (Table II)

Activity levels were reported by 37 945 physicians: 30 165 (78.7%) reported full-time practice, while 2121 (5.6%) said part time; 1420 (3.7%) reported being semiretired, 2826 (7.4%) retired and 1413 (3.7%) temporarily out of practice (Table II).

Although the investigation of activity levels according to age yielded expected results, they proved interesting. Most (53.9%) full-time physicians were 44 or younger. The middle-aged categories, 45 to 54 and 55 to 59, accounted for 23.4% and 10.4% of full-time doctors, respectively. More than 11.3% of full-time physicians are 60 years or older; just under 1% (280 doctors) reported full-time practice but did not indicate age.

Of full-time physicians 34 and younger, 27.5% were women. When only those 30 and under were considered, women accounted for 34.8% of the total. In contrast, women made up 14.1% of the 35-to-44 age category, 9.6% of the 45-to-54 group, 7.3% of the 55-to-59 group and 5.8% of full-time physicians 60 or older.

The age and sex of doctors in the part-time category were markedly different from the results for full-time doctors. Of physicians younger than 35 who practised part time, 83.1% were women; the percentage was similar (82.4) for part-timers aged 35 to 44. In the 45-to-54 category, 56.7% were women.

A total of 1413 physicians indicated they were temporarily not in practice — 3.7% of respondents. Women were more than twice as likely to be temporarily

out of practice (7.2% as opposed to 3.0% of men). Explanations were provided by 495 (35%) physicians in this category — by 30.6% of the men and 44% of the women. About half of the women cited maternity leave, while 11% listed disability or ill-

ness, family responsibilities, or leave of absence, and 7% indicated sabbatical leave.

Of the men who provided an explanation, 35.2% cited disability or illness, 32.8% were working outside medicine, 10.3% were on a leave of absence and 9.3%,

sabbatical leave. Other reasons listed by men and women included nonmedical education, relocation of practice and temporary ineligibility. Eleven respondents listed unemployment as the reason!

The 2826 physicians who in-

Table II — Level of activity as reported* by 38 308 physicians, categorized by age, Nov. 1987

Level-of-activity category and sex	Completed years of age						No birthdate given	Total
	<35	35-44	45-54	55-59	60-64	65≥		
Full-time								
Men	4 242	8 945	6 393	2 904	2 179	1 037	224	25 924
Women	1 613	1 468	678	227	156	43	56	4 241
Total	5 855	10 413	7 071	3 131	2 335	1 080	280	30 165
Part-time								
Men	99	111	114	70	141	257	23	815
Women	488	520	149	55	50	28	16	1 306
Total	587	631	263	125	191	285	39	2 121
Semiretired								
Men	0	4	20	69	220	992	15	1 320
Women	0	1	7	10	33	48	1	100
Total	0	5	27	79	253	1 040	16	1 420
Retired								
Men	2	7	31	65	264	1 994	145	2 508
Women	2	6	20	25	52	199	14	318
Total	4	13	51	90	316	2 193	159	2 826
Temporarily not practising								
Men	264	144	142	102	96	128	71	947
Women	233	115	34	11	14	15	44	466
Total	497	259	176	113	110	143	115	1 413
Not reported								
Men	29	60	81	45	37	43	12	307
Women	13	12	9	1	9	7	5	56
Total	42	72	90	46	46	50	17	363
Total								
Men	4 636	9 271	6 781	3 255	2 937	4 451	490	31 821
Women	2 349	2 122	897	329	314	340	136	6 487
Total	6 985	11 393	7 678	3 584	3 251	4 791	626	38 308

*Unadjusted for hours/week and weeks/year reported.

Table III — Practising licensed physicians in Canada, Nov. 1987

Level-of-activity category	Practising licensed physicians											
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta	BC	NWT/Yukon	Canada
Full-time												
Men	476	109	965	597	6 161	9 919	1 037	883	2 141	3 605	31	25 924
Women	89	14	148	76	1 185	1 634	156	101	328	501	9	4 241
Total	565	123	1 113	673	7 346	11 553	1 193	984	2 469	4 106	40	30 165
Part-time												
Men	8	8	29	8	220	304	35	16	53	132	2	815
Women	15	4	48	21	248	524	55	38	118	231	4	1 306
Total	23	12	77	29	468	828	90	54	171	363	6	2 121
Semiretired												
Men	14	12	53	33	293	508	68	35	92	212	0	1 320
Women	2	0	3	0	13	50	6	2	6	17	1	100
Total	16	12	56	33	306	558	74	37	98	229	1	1 420
Total												
Men	604	147	1 246	735	8 120	12 939	1 357	1 075	2 738	4 698	47	33 706

Table IV — Proportion of physicians who are and are not RCPSC/CPMQ certificants practising in urban and rural locations, Nov. 1987

Province of practice	Non-certified		Certified	
	Urban (%)	Rural (%)	Urban (%)	Rural (%)
Newfoundland	48.8	51.2	94.7	5.3
Prince Edward Island	64.7	35.3	98.2	1.8
Nova Scotia	68.4	31.6	91.9	8.1
New Brunswick	64.3	35.7	93.6	6.4
Quebec	80.1	19.9	97.3	2.7
Ontario	87.7	12.3	98.1	1.9
Manitoba	75.8	24.2	96.1	3.9
Saskatchewan	66.8	33.2	95.5	4.5
Alberta	77.3	22.7	95.1	4.9
British Columbia	87.4	12.6	98.2	1.8
Northwest Territories/ Yukon	64.3	35.7	75.0	25.0
Canada	81.6	18.4	97.1	2.9
Total:	Rural - 10.2		Urban - 89.8	

indicated they were retired had a mean age of 70.8 years (SD = 7.8). More than half (51.7%) reported their age of retirement, the mean age being 65.8 years (SD = 8.1). This finding suggests that about 16.6% of the 1986 physician population will have retired by 1992, and a further 5.6% will be semiretired.

Geographic distribution

Excluding those temporarily out of practice, retired, or not reporting their activity level, 33 706 respondents are currently practising in Canada; 5647 (16.8%) of them are women (Table III).

Four provinces — Prince Edward Island, Nova Scotia, Manitoba and British Columbia — have smaller proportions of full-time physicians than the national average. In Newfoundland

93.5% of practising doctors worked full time and more than half of them were under 35. Similarly, in Nova Scotia, New Brunswick, Quebec and Alberta more than 50% of full-time doctors who responded were under 35. In contrast, 31.8% of full-time doctors responding from PEI and 25.3% from BC were aged 60 or more. Newfoundland had the smallest proportion aged 60 and older, 14.1%.

Of the full-time physicians responding, 11.4% practised in rural settings. In Newfoundland, almost 30% of the full-time doctors were engaged in rural practice. The percentages were somewhat lower for New Brunswick, PEI, Nova Scotia and Saskatchewan (21.4, 20.3, 19.6 and 19.5, respectively), with Ontario having the lowest percentage, 6.6. Only 7.5% of BC respondents were from rural areas, while the Manitoba and Alberta totals were

13% and 13.6%, respectively.

The urban and rural distribution of physicians who are and are not certified by the RCPSC and CPMQ is summarized in Table IV. Because the study is based on self-reported responses and not on the peer-validated database that defines physicians by function, the expertise that exists in rural areas is likely underestimated. Semiretired physicians are more likely to be practising in a rural setting than are full-time or part-time ones. However, rural doctors are, on average, younger — full-time rural physicians averaged 42.29 years, part-time ones 44.54 years, while urban doctors who practised full time averaged 45.04 years, part-time ones 45.67 years.

Full-time rural doctors without RCPSC or CPMQ certification had a mean age of 41.19 years, compared with 42.33 years for their urban counterparts. Rural full-time specialists were 1.5 years older than urban specialists.

Hours worked (Tables V and VI)

Practising physicians who did not report RCPSC or CPMQ certification worked an average of 46.9 hours per week (n = 15 700, SD = 17.79) (Table V); the figure was similar (49.3 h/wk) for specialists (n = 17 207, SD = 18.44) (Table VI).

Of physicians not reporting certification, men worked 49.13 h/wk, women 38.66. Among specialists, men reported they worked 50.10 h/wk, women 43.65.

As in the 1982 CMA survey, specialists reported spending

Why are doctors working fewer hours? This may be partly explained by the greater proportion of part-time and semiretired physicians found among practising physicians in the 1986 survey.

more time at work each week than did noncertificants, but they spent less of it caring for patients. As a group, specialists reported working 3.8 fewer hours per week than in 1982. Results were similar for nonspecialists — they reported working 4.7 fewer hours.

Those results are consistent with findings from the York University 1986 National Survey of

Canadian Physicians.⁵ It determined that general practitioners work 47 hours per week, specialists 50 hours.

Why are doctors working fewer hours? This may be partly explained by the greater proportion of part-time and semiretired physicians found among practising physicians in the 1986 CMA survey — 10.5% versus 9.2% in 1982. Consistent with this expla-

nation is the greater proportion of women, 16.8% versus 14.1%, in the practising-physician population in 1986. That trend was forecast in the 1982 survey.

Full time: The mean hours worked reported by physicians engaged in full-time practice was 50.75 h/wk (SD = 16.49) for all activities. Specialists had a mean of 51.73 h/wk; all other physicians had 49.64 h/wk. Full-time

Table V — Total mean hours worked per week by physicians* other than RCPSC or CPMQ certificants, Nov. 87

Province of residence	Engaged in patient care			Engaged in teaching, research, administration			Total activities		
	MDs not reporting		SD	MDs not reporting		SD	MDs not reporting		SD
	RCPSC/CPMQ certification	Time (h/wk)		RCPSC/CPMQ certification	Time (h/wk)		RCPSC/CPMQ certification	Time (h/wk)	
Newfoundland	329	47.30	19.93	127	9.72	13.93	334	50.70	19.19
Prince Edward Island	77	44.99	20.50	19	10.16	14.80	78	47.09	19.71
Nova Scotia	582	46.04	18.30	163	8.83	13.27	594	48.10	17.59
New Brunswick	363	49.22	19.37	100	7.88	12.60	367	51.10	19.00
Quebec	3 418	40.80	5.59	1 084	11.28	15.33	3 519	43.78	15.39
Ontario	5 742	44.79	17.88	1 610	10.43	14.38	5 862	47.24	17.56
Manitoba	588	45.89	24.72	219	9.53	15.13	601	48.86	24.18
Saskatchewan	540	49.12	24.26	182	6.72	9.85	549	50.86	24.20
Alberta	1 318	45.70	17.25	410	8.28	13.32	1 336	47.98	16.69
British Columbia	2 391	45.47	17.73	727	7.11	11.38	2 426	47.29	17.54
Northwest Territories/ Yukon	33	45.15	18.03	10	8.00	14.94	34	46.38	18.28
Canada	15 381	44.49	18.15	4 651	9.60	13.96	15 700	46.92	17.79

*Total includes the activity of full-time, part-time and semiretired physicians; 240 of the respondents in this category — which comprises family physicians with and without certification from the College of Family Physicians of Canada and doctors practising a specialty but not holding RCPSC or CPMQ certification — did not report.

SD = standard deviation

Table VI — Total* mean hours worked per week by RCPSC or CPMQ certificants, Nov. 1987

Province of residence	Engaged in patient care			Engaged in teaching, research, administration			Total activities		
	Number of specialists	Time (h/wk)	SD	Number of specialists	Time (h/wk)	SD	Number of specialists	Time (h/wk)	SD
Newfoundland	250	41.67	20.53	167	9.74	11.74	259	47.17	19.98
Prince Edward Island	63	40.81	21.70	25	8.96	13.92	66	42.83	20.48
Nova Scotia	610	41.81	18.84	406	12.17	13.41	620	50.25	19.29
New Brunswick	340	45.71	20.06	160	6.33	8.66	343	48.73	19.31
Quebec	4 237	40.71	17.01	2 602	12.79	14.72	4 356	48.34	16.30
Ontario	6 618	42.92	19.44	4 039	12.44	14.13	6 827	49.97	19.14
Manitoba	711	41.23	19.93	456	13.50	14.57	727	49.70	19.17
Saskatchewan	487	44.26	21.95	321	10.54	13.36	498	50.97	22.43
Alberta	1 325	43.30	18.88	853	12.45	14.60	1 345	51.37	18.02
British Columbia	2 103	41.99	18.62	1 198	10.41	12.83	2 154	47.47	18.24
Northwest Territories/ Yukon	11	45.00	26.76	3	17.33	28.29	12	45.75	25.23
Canada	16 755	42.23	18.85	10 230	12.12	14.09	17 207	49.28	18.44

*Total includes the activity of full-time, part-time and semiretired physicians; 244 RCPSC or CPMQ certificants did not report activities.

SD = standard deviation

The results of the 1982 CMA survey suggested that several specialties faced potential shortage in the next decade. This trend was also evident in the 1986 results.

doctors in Saskatchewan worked the longest hours — 53.13 h/wk — while those in Quebec reported the shortest work week, 48.27 h/wk.

Physicians in New Brunswick reported being engaged in patient care activities longer (49.9 h/wk) than their full-time colleagues in other provinces. Quebec physicians reported spending 42.5 h/wk on patient-care activities.

Physicians in Quebec and Manitoba reported spending the most time on research, administration and classroom instruction, 12.40 h/wk.

For full-time, noncertified physicians, the gap separating men and women for all activities was 6.26 h/wk — 50.70 hours for men, 44.44 hours for women. The gap between men and women specialists practising full time is only 4.67 h/wk.

To get a clearer picture of how the practice patterns of women will affect the number of physicians needed in Canada in the future, it must be recognized that the difference in hours worked by men and women is not large if only full-time physicians are considered. Those determining how many doctors Canada will need in the future should not forget this.

Part time: Of the 2121 physicians reporting part-time practice, 96% indicated that, excluding on-call time, they spent an average of 27.21 h/wk on patient care, research, administration, classroom instruction and related activities. Women reported an average of 25.08 h/wk, men 30.69 hours.

When only patient care is

considered, the average for all part-time physicians was 24.3 h/wk. Provincial means varied from a low of 19.73 h/wk in PEI to a high of 27.04 h/wk in Nova Scotia.

Physicians who reported part-time practice and involvement in research, administration and classroom instruction (527) spent an average of 9.9 h/wk on these activities.

Specialists practising part time reported working 3.2 hours per week more than other part-time doctors. There is very little difference, however, in hours per week spent on patient care, 24.6 for specialists compared with 24.2 for other physicians. The difference is evident in time spent on research, administration and classroom instruction, 11.2 h/wk for specialists versus 8.46 for others.

While male specialists averaged 3.2 h/wk more in their total activities than other male physicians in part-time practice, female specialists average only 45 minutes more than other part-time female physicians.

Semiretired: Semiretired physicians worked an average of 19.75 h/wk, with men working 2 h/wk more than women. Unlike physicians practising full time or part time, semiretired specialists worked slightly less (34 min) than did other semiretired doctors.

Salaried provision of patient care

Doctors were asked to indicate if they provide patient care for which they receive a salary. Of 24 292 respondents, 6068 in-

dicated they were practising full time and receiving a salary. A majority, 3956, were working in a hospital or clinic and averaged 31.1 h/wk.

Only 619 physicians reported providing salaried patient care in private industry, an average of 13.3 h/wk, while 306 of the full-time physicians were federal government employees who reported spending an average of 24.7 h/wk on patient care. Slightly higher average hours per week, 25.6, were reported by 836 physicians working for provincial governments.

As a group, salaried full-time physicians were younger than nonsalaried ones. Approximately 59.7% of the former group were under age 45 and 9.4% were 60 or older. Comparable figures for the nonsalaried group were 56.6% and 10.5%.

Of full-time physicians receiving a salary, 52.3% were specialists. Less than half the salaried specialists, 49.7%, were younger than 45, compared with 70.9% for other physicians. As well, physicians aged 60 or older accounted for almost an eighth of salaried specialists but for only 6.7% of other salaried physicians.

Location of training

Since the 1982 CMA survey, there appears to have been no change in the proportion of Canada's physicians who graduated from foreign medical schools (Table VII). Saskatchewan and Newfoundland in particular continue to rely heavily on doctors educated outside the country.

Of the 10 726 (28.8%) re-

Table VII — Respondents' province of residence in November 1987 compared with location of medical school attended

Province of residence	Location of school granting medical degree (as a % of total number of physicians in the province)			
	Province of residence	Other province	Foreign	Total*
Newfoundland	148 (22.6)	168 (25.6)	339 (51.8)	655
Prince Edward Island	0 (0.0)	123 (77.8)	35 (22.2)	158
Nova Scotia	798 (55.5)	224 (15.6)	415 (28.9)	1 437
New Brunswick	0 (0.0)	616 (74.0)	216 (26.0)	832
Quebec	7 243 (80.1)	502 (5.6)	1 300 (14.4)	9 045
Ontario	8 368 (57.0)	1 981 (13.5)	4 328 (29.5)	14 677
Manitoba	831 (54.0)	174 (11.3)	534 (34.7)	1 539
Saskatchewan	323 (26.9)	280 (23.4)	596 (49.7)	1 199
Alberta	1 334 (43.6)	666 (21.8)	1 058 (34.6)	3 058
British Columbia	1 078 (19.3)	2 660 (47.6)	1 852 (33.1)	5 590
Northwest Territories/ Yukon	0 (0.0)	36 (70.6)	15 (29.4)	51
Canada	20 123 (52.6)	7 430 (19.4)	10 688 (27.9)	38 241

*67 physicians did not report where they received their degree.

spondents who reported being foreign trained, 1051 (9.8%) lived in rural areas. About 60% of doctors in rural practice in Newfoundland and in Saskatchewan are foreign graduates, as are more than 40% in Manitoba and Alberta.

All provinces except Quebec averaged between 20% and 30%; in Quebec, only 3.0% of rural physicians received their medical education outside Canada. Overall, Quebec has the lowest proportion of foreign medical graduates.

Age and specialty

Since 1982 the proportion of full-time specialists under age 45 has fallen slightly from 55.0% to 53.8% and the proportion among other physicians has fallen from 67.0% to 65.9%. As in 1982, more than half the full-time practitioners in five major specialties are 45 years or older.

An increasing number of women are specializing. In the 5 years between surveys, the proportion of women aged 34 or younger has increased significantly in surgery (7% in 1982, 20% in 1987), pediatrics, obstetrics and gynecology. Their participation has increased less dramatically in psychiatry and general or family practice.

These changes took place be-

cause not only more women chose to enter these fields but also the number of men attracted to them dropped.⁶

Discussion

Although the basic structure of health care delivery is the same across the country, there are major differences in the level and type of health care resources available in each province. All provincial governments are seeking ways to control the number and distribution of physicians. There are many incentive programs⁵ to encourage physicians to locate in nonurban areas.

An understanding of the distribution of practising physicians by province provides comparative data that are more sensitive than population ratios. As well, the data concerning sex, age and urban-rural distribution help qualify the number of physicians available to practise.

Productivity, a measurement of hours worked by men and women, has become an important element in a number of recent forecasts of physician requirements.⁶ Lomas and colleagues pointed out the danger of concluding that reduced work hours inevitably lead to a need for more physicians. They suggest that the number of hours worked and changes in them be

linked to health outcomes.⁷ Although the implications of shorter work weeks are not yet clear, the need for good data is. Questions of productivity must be interpreted in relation to each province's health care system and its regulations.

For example, Quebec's full-time physicians have the shortest work week. How this finding relates to income caps in the province and the number of physicians who work in predominantly salaried positions needs to be investigated as policies on physician requirements are developed.

The proportion of women practising medicine grew from 14.2% in 1982 to 16.8% in 1987, and women chose part-time practice more often than men. Full-time female specialists work 91% of the hours that men do, other female physicians 87.7%. Assumptions about full-time practice become very important in projections that use the productivity of women as a key variable.

The results of the 1982 CMA survey suggested that several specialties faced potential shortages in the next decade. The trends in these specialties — general surgery, anesthesia, obstetrics and gynecology, radiology and psychiatry — were also evident in the 1986 results. The numbers of trainees in these areas need to be examined and corrective action taken before Canada has to recruit foreign graduates to meet the requirements for these specialties.

Remuneration mechanisms and their impact on physician requirements, health care costs and quality of care have become paramount in discussions about health care delivery. Some of the CMA survey results add to the discussion. For example, about 20% of full-time practising physicians reported that they deliver some patient care for which they receive a salary. Furthermore, 65% of this group — 13.1% of all full-time physicians — were working in hospitals or clinics.

The perception that physicians receiving a salary are younger than fee-for-service ones is supported by the survey results.

This paper provides only a sampling of the information that can be obtained from further analysis of the CMA databank. It does not provide in-depth commentary on specialty-specific demographic or activity status because the validation that will be completed shortly promises to clarify what type of work physicians are actually doing. Although this paper makes a number of references to the 1982 CMA survey, a matched comparison has not been attempted.

Forthcoming studies include investigations of the movement of physicians and changes in patterns of practice by a cohort of physicians. In other words, this review is but a start. Its major lesson lies in the questions it raises.

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References

1. Woodward C, Adams O: Physician resource databank: numbers, distribution and activities of Canada's physicians. *Can Med Assoc J* 1985; 132: 1175-1188
2. Dillman DA: *Mail and telephone surveys, the total design method*. Washington State University Press, Pullman, Washington, 1978
3. Ryten E: *The changing demographics of physician supply in Canada: how did we get there and where are we going? Does it matter?* Paper prepared for the Second International Conference on Manpower, Association of Canadian Medical Colleges, Calgary, Oct. 18, 1987
4. Stevenson M, Vayda E, Williams P: *1986 national survey of Canadian physicians report to respondents*. York University, Toronto, 1987: 1-7
5. Dupont J, Flor L: *Measures to improve physician distribution in Canada: provincial initiatives*. Third International Symposium in Medical Geography — Proceedings. Queen's University, Kingston, August 1988: 21-28
6. Federal/Provincial and Territorial Advisory Committee on Health Manpower: *Physician manpower in Canada, 1980-2000*. Health and Welfare Canada, Ottawa, 1985: 3-10
7. Lomas J, Barer ML, Stoddart GL: *Physician manpower planning: lessons from the Macdonald Report*. Ontario Economic Council. Toronto, 1988: 56-61

Intermediate Prescribing Information

Anafranil[®]

(clomipramine hydrochloride)

Antidepressant

Indications and Clinical Uses

Depressive illness, including manic depressive psychosis, depressed phase, and involuntarily melancholia. ANAFRANIL appears to have a mild sedative effect which may be helpful in alleviating the anxiety component often accompanying depression. Also used as an adjunct in the management of manifestations of agitated depression which sometimes exacerbate obsessive-compulsive neurosis.

Contraindications

Should not be given in conjunction with or within fourteen days of treatment with a monoamine oxidase inhibitor. Existing liver or kidney damage. History of blood dyscrasias. Hypersensitivity to the drug or known hypersensitivity to tricyclic antidepressants belonging to the dibenzazepine group. Glaucoma. Acute recovery phase following myocardial infarction and in the presence of acute congestive heart failure. *Use in Pregnancy and Lactation:* Not recommended in pregnancy as safety has not been established. Since ANAFRANIL passes into breast milk, nursing mothers receiving ANAFRANIL should not breast-feed their infants.

Warnings

Tricyclic antidepressants, particularly in high doses, have been reported to produce sinus tachycardia, changes in conduction time and arrhythmias. A few instances of unexpected death have been reported in patients with cardio-vascular disorders. Myocardial infarction and stroke have also been reported with drugs of this class. Therefore, administer ANAFRANIL with extreme caution to patients with a history of cardio-vascular disease, those with circulatory lability and elderly patients. ANAFRANIL also has a hypotensive action which may be detrimental in these circumstances. In such cases, initiate treatment at low doses with progressive increases only if required and tolerated, and the patients should be under close surveillance at all dosage levels. Tricyclic agents are known to lower the convulsive threshold, therefore use ANAFRANIL with extreme caution in patients with a history of convulsive disorders. Concurrent administration of ECT and ANAFRANIL may be hazardous and such treatment should be limited to patients for whom it is essential. Because of its anticholinergic properties, use with caution in patients with increased intraocular pressure or a history of urinary retention, particularly in presence of prostatic hypertrophy. Particularly in the elderly and in hospitalized patients the tricyclic antidepressants may give rise to paralytic ileus and, therefore, appropriate measures should be taken if constipation occurs. Keep in a safe place, well out of reach of children.

Precautions

In seriously depressed patients the possibility of suicide should be borne in mind and may persist until significant remission occurs. Therefore, supervise these patients carefully during treatment with ANAFRANIL (clomipramine hydrochloride), and hospitalization or concomitant electro-convulsive therapy may be required. This type of patient should not have easy access to large quantities of ANAFRANIL. Activation of latent schizophrenia or aggravation of existing psychotic manifestations in schizophrenic patients may occur; patients with manic-depressive tendencies may experience hypomanic or manic shifts; and hyperactive or agitated patients may become overstimulated. A reduction in dose or discontinuation of ANAFRANIL should be considered under these circumstances. Since ANAFRANIL may produce sedation, particularly during the initial phase of therapy, patients should be cautioned about the danger of engaging in activities requiring mental alertness, judgement and physical coordination. ANAFRANIL may potentiate the cardiovascular effects of sympathomimetic drugs, such as noradrenaline and adrenaline, as well as the activity of CNS-depressant drugs and anticholinergic agents. Since ANAFRANIL, like other psycho-active drugs, may diminish alcohol tolerance, advise patients to abstain from alcohol while under treatment. Observe caution in prescribing ANAFRANIL in hyperthyroid patients or in patients receiving thyroid medication conjointly. Transient cardiac arrhythmias have occurred in rare instances in patients who have been receiving other tricyclic compounds concomitantly with thyroid medication. It should be borne in mind that ANAFRANIL may block the pharmacological effects of hypotensive drugs, such as guanethidine and similar agents. Exercise caution if ANAFRANIL is administered together with cimetidine since cimetidine inhibits tricyclic antidepressant metabolism and clinically significant increases in plasma levels of ANAFRANIL may occur. Obstructive jaundice and bone marrow depression with agranulocytosis have been reported. Periodic blood cell counts and liver function tests are recommended in patients receiving treatment with ANAFRANIL over prolonged periods, especially if the patient develops fever, an influenza infection, or sore throat. In the event of an allergic skin reaction, ANAFRANIL should be withdrawn. Prior to elective surgery, discontinue ANAFRANIL for as long as clinically feasible, since little is known about the interaction between ANAFRANIL and general anesthetics. As with certain other psychotherapeutic drugs, ANAFRANIL elevates prolactin levels. Tissue culture experiments indicate that approximately one-third of human breast cancers are prolactin dependent in vitro, a factor of potential importance if the prescription of ANAFRANIL is contemplated in a patient with a previously detected breast

cancer. Although disturbances such as galactorrhea, amenorrhea, gynecomastia, and impotence have been reported, the clinical significance of elevated serum prolactin levels is unknown for most patients. An increase in mammary neoplasms has been found in rodents after chronic administration of neuroleptic drugs. Neither clinical studies nor epidemiologic studies conducted to date, however, have shown an association between chronic administration of these drugs and mammary tumorigenesis: the available evidence is considered too limited to be conclusive at this time.

Adverse Reactions

The following adverse reactions have been reported with ANAFRANIL (clomipramine hydrochloride) or other tricyclic antidepressants: *Neurological:* Dizziness, extrapyramidal effects such as tremor and ataxia, headache, convulsions, numbness, tingling, paresthesias of the extremities and peripheral neuropathy. *Behavioural:* Drowsiness, fatigue, insomnia, nightmares, restlessness, agitation, excitement, hypomania or manic episodes, activation of latent psychosis, confusion, disturbed concentration, disorientation, delusions, visual hallucinations, impaired memory, anxiety. *Autonomic:* Dry mouth, blurred vision, difficulty with accommodation, mydriasis, slurred speech, constipation, paralytic ileus, urinary retention, disturbances of micturition, excessive sweating, hyperpyrexia. *Cardiovascular:* Hypotension, particularly orthostatic hypotension with associated vertigo, hypertension, tachycardia, palpitations, syncope, arrhythmia. A quinidine-like effect and other reversible EKG changes (such as flattening or inversion of T-waves, bundle branch block, depressed S-T segments, prolonged conduction time and asystole), arrhythmias, heart block, fibrillation, myocardial infarction, stroke and unexpected death in patients with cardiovascular disorders have been reported with tricyclic antidepressants. *Gastrointestinal:* Nausea, vomiting, disturbances of appetite, abdominal pain, diarrhea. *Endocrine:* Changes in libido, weight gain or loss, impotence, testicular swelling, menstrual irregularity, breast enlargement and galactorrhea in the female, gynecomastia in the male, changes in blood sugar levels, increase in prolactin levels. *Allergic or Toxic:* Allergic skin reactions, photosensitization, edema, drug fever, bone marrow depression, including agranulocytosis, eosinophilia, purpura and thrombocytopenia, obstructive jaundice and disorders of hepatic function. *Withdrawal Symptoms:* Abrupt cessation of treatment with tricyclic antidepressants after prolonged administration may produce nausea, headache and malaise. These symptoms are not indicative of addiction.

Dosage and Administration

Individualize dosage according to the requirements of each patient. Initiate treatment at the lowest recommended dose and increase gradually, noting carefully the clinical response and any evidence of intolerance. It should be kept in mind that a lag in therapeutic response usually occurs at the onset of therapy, lasting from several days to a few weeks. Increasing the dosage does not normally shorten this latent period and may increase the incidence of side effects. *Initial Dosage: Adults:* 25 mg three times daily; increase up to 150 mg daily, or more, as required and tolerated. Doses in excess of 200 mg daily are not recommended for outpatients. Occasionally, in more severely depressed hospitalized patients, dosages up to 300 mg daily may be required. *Elderly and Debilitated Patients:* In general, lower dosages are recommended for these patients. Initially, 20 to 30 mg daily in divided doses is suggested, with very gradual increments, depending on tolerance and response. Check blood pressure and cardiac rhythm frequently, particularly in patients who have unstable cardiovascular function. *Maintenance Dosage:* Dosage during maintenance therapy should be kept at the lowest effective level. Continue medication for the expected duration of the depressive episode in order to minimize the possibility of relapse following clinical improvement.

Dosage Forms

ANAFRANIL (clomipramine hydrochloride) is available as a:

1. Sugar-coated 10 mg cream colored triangular tablet with GEIGY printed on one side and identification code DK on the other side.
2. Sugar-coated 25 mg cream colored round tablet with GEIGY printed on one side and identification code FH on the other side.
3. Film-coated 50 mg white, round, slightly biconvex, bevelled-edged tablet, with GEIGY printed on one side and identification code LP on the other side.

Availability

10 mg, 25 mg and 50 mg tablets in bottles of 100 and 500. Protect from heat and moisture. Product monograph supplied on request.

1. Werneke LB. The use of intravenous clomipramine in the treatment of obsessive compulsive disorder. *Can J Psychiatry* 1984;29:135-141.
2. Singh AN, Saxena B, Gent M. Clomipramine (Anafranil) in depressive patients with obsessive neurosis. *J Int Med Res* 1977;5(Suppl 5):25.
3. McCure DJ, Low GL, Gent M. Clomipramine HCl - a double-blind study of a new antidepressant drug. *Can Psychiatr Assoc J* 1973;18:37-42.
4. Foa EB, Steketee GS. Obsessive-Compulsives: Conceptual issues and treatment interventions. *Prog Behav Modif* 1979;5:10.

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