

## Women in pediatrics: the experience in Quebec

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**Objectives:** To compare the practice patterns of female pediatricians in Quebec with those of their male counterparts and to identify specific factors influencing these practice patterns.

**Design:** Matched cohort questionnaire survey.

**Setting:** Primary, secondary and tertiary care pediatric practices in Quebec.

**Participants:** All 146 female pediatricians and 133 of the 298 male pediatricians, matched for age as well as type and site of practice; 119 (82%) of the female and 115 (86%) of the male pediatricians responded.

**Main outcome measures:** Demographic and family data as well as detailed information about the practice profile.

**Results:** The two groups were comparable regarding demographic data, professional work and patient care. Compared with the male respondents, the female pediatricians were younger and saw more outpatients. The mean number of hours worked per week, excluding on-call duty, was 40.5 (standard deviation [SD] 12.4) for the women and 48.9 (SD 12.0) for the men ( $p < 0.001$ ). The female pediatricians were more likely than their male counterparts to have spouses who were also physicians (40%) or in another profession (45%). The female pediatricians without children worked significantly fewer hours than the male pediatricians with or without children ( $p < 0.001$ ). Children ( $p = 0.006$ ), but not the number of children ( $p = 0.452$ ), had a significant effect on the number of hours worked by the female pediatricians.

**Conclusion:** The duality of the role of female physicians as mothers and professional caregivers must be considered during workload evaluations. If the same style of practice and the increase in the proportion of female pediatricians continue, about 20% more pediatricians will be needed in 10 years to accomplish the same workload.

**Objectifs :** Comparer les types de pratique des femmes pédiatres du Québec à ceux des hommes et identifier des facteurs spécifiques influençant ces types de pratique.

**Méthode :** Sondage par questionnaire, groupe apparié.

**Contexte :** Pratique pédiatrique primaire, secondaire et tertiaire dans la province de Québec.

**Participants :** Toutes les 146 femmes pédiatres du Québec et 133 des 298 hommes pédiatres, appariés pour l'âge et le type et le site de pratique; 119 (82%) des femmes et 115 (86%) des hommes pédiatres ont répondu.

**Mesures principales des résultats :** Données démographiques et familiales en plus d'informations détaillées sur le profil de pratique.

**Résultats :** Les deux groupes sont comparables sur les données démographiques, le

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travail professionnel et les soins aux patients. Comparativement aux hommes, les femmes pédiatres sont plus jeunes et semblent voir plus de patients externes. Les femmes travaillent en moyenne 40,5 (écart-type [E-T] 12,4) heures par semaine et les hommes 48,9 (E-T 12,0) heures par semaine, excluant les heures de garde ( $p < 0,001$ ). Il est plus probable que les femmes pédiatres ont des conjoints médecins (40%) ou dans d'autre profession (45%). Les femmes pédiatres sans enfant travaillent significativement moins d'heures que les hommes pédiatres avec ou sans enfant ( $p < 0,001$ ). Le fait d'avoir des enfants ( $p = 0,006$ ), mais non le nombre d'enfants ( $p = 0,452$ ), a une influence significative sur le nombre d'heures travaillées par les femmes pédiatres.

**Conclusion :** Lors d'évaluations de charge de travail, il importe de tenir compte du double rôle des femmes médecins, à savoir, celui de mère de famille et de professionnelle des soins de santé. Assumant que le même style de pratique soit conservé et que l'augmentation de la proportion de femmes pédiatres se maintienne, environ 20% plus de pédiatres seront nécessaire d'ici 10 ans pour accomplir la même charge de travail.

Over the last 10 years provincial governments have been reducing the number of postgraduate training positions because of concerns over health care costs and a perceived oversupply of physicians.<sup>1,2</sup> In 1986-87 the total number of pediatric training positions in Quebec was reduced from 119 to 79.<sup>3</sup> As well, the number of female pediatricians in Quebec substantially increased. In 1984, 87 (22%) of the 391 pediatricians were women.<sup>3</sup> In 1990, 146 (33%) of the 444 pediatricians and 70 (62%) of the 113 pediatric residents were women. A similar increase in the proportion of female physicians has been noted in the rest of Canada<sup>1,2</sup> and in the United States.<sup>4,5</sup> In the entire Quebec pediatric work force 33% of pediatricians are women; however, of those under 45 years of age about 50% are women. These new trends in age and sex distribution are expected to have a great impact on pediatric practice and physician resources in Quebec.

Female physicians work fewer hours than men on average, even if they work full time. Family variables and children have had a negative impact on the number of hours worked by female physicians.<sup>6,7</sup> Also, social changes in Quebec since 1980 have resulted in a decrease in the average number of hours worked by male physicians. In 1976 male specialists allocated 43.9 hours per week on average to patient care. By 1988 this figure had declined to 39.8 hours.<sup>8</sup>

The purpose of our study was to determine the current types of practice and workload of female pediatricians in Quebec. Since concurrent social changes have led to a general reduction of the number of hours worked, there was a need to isolate the factors that specifically influence the female pediatric work force.

## Methods

A questionnaire with 65 items was developed. The demographic data to be collected were age, sex, citizenship, site of practice, year of graduation from medical school and year of receipt of pediatric

diploma. The professional data included type of practice (solo or group, outpatient or inpatient), hospital affiliation (community or university) and on-call schedule (level of participation). The types of care delivered were determined according to definitions previously used in similar studies.<sup>2,9</sup> "Primary care" applied to care delivered to unreferred patients. "Secondary care" included the care of more complex conditions as well as pediatric consultations provided to general practitioners. "Tertiary care" applied to subspecialty care. The areas of administrative and academic involvement were evaluated by questions on teaching positions, publications and role in pediatric associations. Data on productivity included the number of hours worked per week, patients seen per week, consultations per week, hours per month allocated to on-call and on-site duty, and weeks of vacation. We did not attempt to define a global index of productivity or to separate full-time and part-time work. Finally, numerous questions concerning family life, maternity leave, pregnancy, domestic work and number of children were included to define better a female pediatrician's dual role as mother and physician.

The questionnaire was reviewed by colleagues to identify any unclear questions. Subjects were selected from the membership list of the Association des pédiatres du Québec. All pediatricians practising in Quebec are members. A copy of the questionnaire was sent to all of the 146 female pediatricians. Since the male pediatricians constitute a larger and older group the questionnaire was sent simultaneously to 133 male pediatricians, matched with the help of a computerized list first by age and then by type and site of practice (102 [70%] of the female physicians were perfectly matched by site and type of practice and within 5 years by age, and 31 [21%] were not perfectly matched; 13 [9%] could not be matched at all). The questionnaire was mailed in November 1990. Two follow-up mailings, in January and February 1991, were issued for nonresponders.

Data were analysed by the Department of Statistics, University of Quebec, Montreal, with the use of

the Statistical Package for the Social Sciences (release 4.0, SPSS Inc., Chicago). Errors in data entry were corrected by means of a second computerized compilation. Illogical answers were excluded from the final analysis. Proportional data were analysed with the  $\chi^2$  test. Analysis of variance (ANOVA) was used for continuous variables. Multiple regression analysis was done on some dependent variables.

## Results

### *Demographic characteristics*

A total of 119 (82%) of the women and 115 (86%) of the men responded. All were Canadian citizens except one man. The demographic data were comparable between the two groups. The women were generally younger than the men and had younger children, particularly 5 to 10 years of age (Table 1).

### *Professional work and academic involvement*

In general the two groups had similar types of practice (Table 2). Virtually all were affiliated with a hospital. Regarding hospital practice, the women saw more outpatients than inpatients, whereas the men tended to provide more inpatient care. A larger proportion of the women than of the men were affiliated exclusively with a university hospital. A similar number of pediatricians in each group held teaching positions. The mean number of publications was significantly higher for the men. The proportion of articles in peer-reviewed journals was not determined.

### *Productivity and remuneration*

There were significant differences between the two groups in the mean number of hours worked per week ( $p < 0.001$ ) and the mean number of patients

seen per week ( $p < 0.001$ ) (Table 3). The mean time spent on site or on call per month was 15.3 hours for the women and 20.3 hours for the men ( $p = 0.112$ ); the difference was not significant, because of important individual variables among the pediatricians regarding the number of hours on call per week. The women took slightly more time off for vacations and expected to retire earlier than the men. Of the women 39% responded that they were planning a pregnancy in the course of the next 5 years. The length of leave per pregnancy differed markedly: the women reported having taken an average of 140.0 days off and the men 4.9 days. The gross annual incomes were significantly higher for the men than for the women (Fig. 1).

### *Family and social variables*

Most of the pediatricians were married (Table 1). Significant differences arose between the two groups when the occupations, salaries and workloads of the spouses were compared (Table 4). The female pediatricians were more likely than their male counterparts to have spouses who were professionals and who worked long hours. Most (87%) of the spouses of the male physicians earned less than \$50 000 per year. A higher proportion of the female pediatricians than of the male pediatricians did domestic chores (45% v. 23%).

Children had a major impact on the practice patterns of the female pediatricians. The women had younger children, mainly 5 to 10 years of age, than the men. Of the female pediatricians 36% reported that they stay home to look after their sick children, and 12% reported that their spouses do so. The respective figures for the men and their spouses were 8% and 68%.

Two-way ANOVA was used to assess the effect of the age of the children on the number of hours worked per week. The children's age did not affect the productivity of the male pediatricians. The

Table 1: Demographic characteristics of pediatricians in Quebec

Characteristic	Female pediatricians (n = 119)	Male pediatricians (n = 115)	p value
Mean age, yr	39.0	41.4	0.053
Mean year of finishing medical school	1976	1974	0.051
Mean year of finishing pediatric specialty training	1981	1979	0.060
No. (and %) married	75 (63)	89 (77)	0.134
No. (and %) with children	69 (58)	89 (77)	0.001
Age of children, yr, mean no. of children	(n = 69)	(n = 89)	
≤ 5 yr	0.80	0.61	0.141
5-10 yr	0.77	0.48	0.05
11-18 yr	0.32	0.90	< 0.001

women with children 10 years of age or less worked significantly fewer hours per week than those with older children ( $p < 0.001$ ) and significantly fewer hours than the men ( $p = 0.004$ ). Women with children over 10 years of age still worked fewer hours per week than the men, but the difference was smaller (mean 45.4 v. 49.7 hours).

Two-way ANOVA was also used to assess the

impact of the number of children on the number of hours worked per week (Fig. 2). The female pediatricians without children worked significantly fewer hours than their male counterparts with or without children ( $p < 0.01$ ). Children ( $p = 0.006$ ), but not the number of children ( $p = 0.452$ ), had a significant effect on the number of hours worked by female pediatricians.

Table 2: Professional work and academic involvement

Variable	Female pediatricians	Male pediatricians	<i>p</i> value
No. (and %) who spent more than 50% of their time providing outpatient care	38 (32) (n = 117)	23 (21) (n = 111)	0.043
No. (and %) not involved with inpatient care	34 (29) (n = 119)	16 (14) (n = 113)	0.748
No. (and %) affiliated with university hospital only	83 (70) (n = 118)	67 (59) (n = 114)	0.511
Type of care delivered, % of time	(n = 117)	(n = 114)	
Primary	53	56	0.503
Secondary	23	21	0.402
Tertiary	24	23	0.901
No. (and %) with full-time academic position	16 (14) (n = 117)	21 (19) (n = 113)	0.377
No. (and %) with part-time academic position	37 (32) (n = 117)	25 (22) (n = 113)	0.377
No. (and %) who published at least one article	58 (55) (n = 106)	71 (70) (n = 102)	—
Mean no. of articles published per person	4.3 (n = 106)	10.0 (n = 102)	0.003
No. (and %) involved in community activities related to pediatrics	47 (40) (n = 118)	64 (58) (n = 111)	0.007
No. (and %) with active role in pediatric associations	54 (45) (n = 119)	61 (54) (n = 114)	0.131

Table 3: Characteristics of productivity

Characteristic	Sex; mean (and standard deviation)		<i>p</i> value
	Female	Male	
No. of hours worked per week excluding on-call duty	40.5 (12.4) (n = 117)	48.9 (12.0) (n = 108)	< 0.001
No. of patients seen per week	74.1 (37.5) (n = 104)	97.9 (55.6) (n = 104)	< 0.001
No. of patients seen per hour	2.1 (1.3) (n = 102)	2.1 (1.2) (n = 99)	—
No. of consultations per week	8.1 (n = 99)	9.8 (n = 103)	0.141
No. of hours on site or on call per month	15.3 (20.1) (n = 102)	20.3 (25.3) (n = 106)	0.112
No. of weeks' vacation per year	5.1 (n = 118)	4.4 (n = 113)	0.002
Expected age at semiretirement, yr	54.9 (n = 90)	57.3 (n = 99)	0.005
Expected age at retirement, yr	61.9 (n = 95)	63.5 (n = 94)	0.023
Length of maternity or paternity leave, d	140.0 (n = 69)	4.9 (n = 89)	—

## Discussion

Our study shows that the female pediatricians in Quebec work 20% fewer hours per week than their male counterparts. A large proportion of the female pediatricians are planning at least one pregnancy in the next 5 years. Since the average leave was 17.2 weeks per pregnancy, at least 782 weeks of work interruption is expected in the next 5 years. This is equivalent to the absence of three full-time pediatricians for 5 years. The proportion of female pediatricians will increase in the next 5 years, since 62% of the pediatric residents in 1990 were women. All of these factors are expected to have a measurable effect on future physician resources.

The female physicians, even those without children, worked fewer hours than the male physicians. One child significantly decreased the number of hours per week for the women but not for the men. The effect of maternity was not tied to the number of children. Other important factors that negatively affected the workload of the female pediatricians included low age of the children, the spouse's profes-

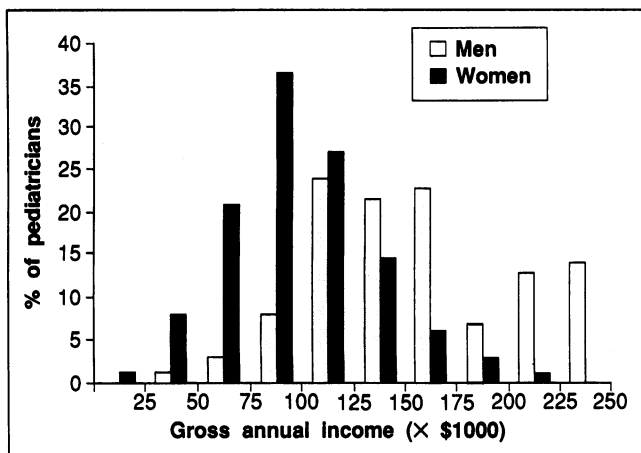


Fig. 1: Distribution of gross annual income of pediatricians in Quebec, by sex.

sion, involvement with activities related to the children and housework. Factors that had a positive effect on their workload included greater age of the children, hired help and spouse's involvement with child care.

Sex-specific factors other than the presence of children, such as way of life, interests other than medicine and marital status, influence the number of hours worked but were not identified in this study. It would be interesting to examine them in another study.

## Conclusion

The duality of the role of female pediatricians as mothers and physicians implies time allocation outside the medical practice. The quantitative differences in the work patterns between male and female pediatricians in Quebec will have to be considered

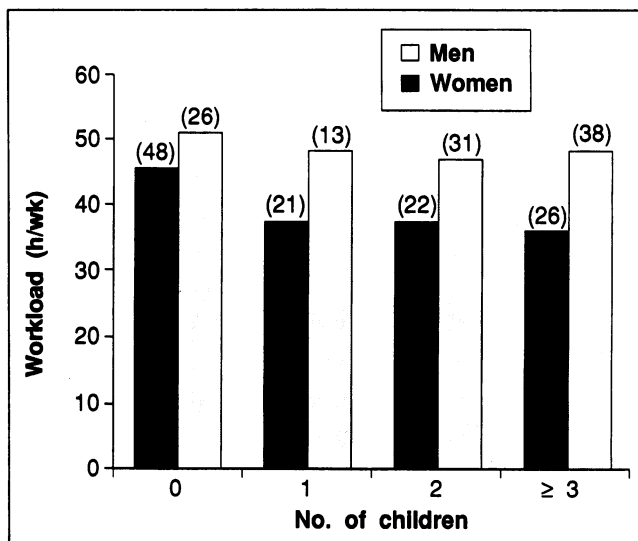


Fig. 2: Relation of workload of pediatricians to number of children, by sex. Numbers in parentheses above the bars represent the number of respondents.

Table 4: Characteristics of pediatricians' spouses

Characteristic of spouse	Female pediatricians*	Male pediatricians	p value
Occupation, no. (and %)	(n = 83)	(n = 79)	
of pediatricians			
Physician	33 (40)	13 (16)	0.0005
Professional, nonphysician	37 (45)	37 (47)	0.0005
Nonprofessional	13 (16)	29 (37)	0.0005
Annual income, no. (and %)			
of pediatricians			
< \$50 000	24 (30)	65 (87)	< 0.0001
\$50 000–\$100 000	28 (35)	7 (9)	< 0.0001
> \$100 000	29 (36)	3 (4)	< 0.0001
Mean no. of hours worked per wk	46.3 (n = 80)	33.1 (n = 73)	–

\*Includes eight in common-law relationship.

during the next assessment of physician resources.

If one assumes that the style of practice and the trend toward an increased proportion of female pediatricians will continue, at least 20% more pediatricians will be needed in 10 years to accomplish the same workload. The social trend would have been better evaluated if we had compared data for male pediatricians over 45 years of age.

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## Conferences

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**May 27-29, 1993:** Genetics and Society  
Montreal

Lynda O'Donnell, communications coordinator, Royal Society of Canada, PO Box 9734, Ottawa, ON K1G 5J4; tel (613) 991-9000

**Du 27 au 29 mai 1993:** Génétique et Société  
Montréal

Lynda O'Donnell, coordonnatrice des communications, Société royale du Canada, CP 9734, Ottawa, ON K1G 5J4; tél (613) 991-9000

**June 13-17, 1993:** Quality of Care in Family Medicine/General Practice — WONCA/SIMG Congress 1993 (organized by the Dutch College of General Practitioners)

The Hague, the Netherlands  
Scientific Secretariat, WONCA/SIMG 1993, PO Box 3231, Lomaniaan 103, 3502 GE Utrecht, The Netherlands; tel 011-31-30-881-700, fax 011-31-30-870-668

**June 16-18, 1993:** 7th Annual Forensic Conference — Working with the Dangerously Mentally Ill in a Post-Institutional Era  
Midland, Ont.

Margaret Milligan, conference coordinator, Mental Health Centre, PO Box 5000, Penetanguishene, ON L0K 1P0; tel (705) 549-3181, ext. 2204

**June 16-19, 1993:** 28th Meeting of the Canadian Congress of Neurological Sciences

Toronto  
Permanent Secretariat, Canadian Congress of Neurological Sciences, Ste. 810, 906-12 Ave. SW, Calgary, AB T2R 1K7; tel (403) 229-9544, tel (403) 229-1661

**June 24-26, 1993:** Pediatric Emergency Therapeutics (PET) and Pediatric Advanced Life Support (PALS) Course (followed by the Canadian Paediatric Society 70th Annual Meeting)

Vancouver  
Canadian Paediatric Society, 401 Smyth Rd., Ottawa, ON K1H 8L1; tel (613) 737-2728, fax (613) 737-2794

**June 25-27, 1993:** Lung Association 93rd Annual Meeting  
Halifax

Lung Association, National Office, 508-1900 City Park Dr., Blair Business Park, Gloucester, ON K1J 1A3; tel (613) 747-6776, fax (613) 747-7430

**June 26-30, 1993:** Canadian Paediatric Society 70th Annual Meeting (preceded by Pediatric Emergency Therapeutics [PET] and Pediatric Advanced Life Support [PALS] course)

Vancouver  
Canadian Paediatric Society, 401 Smyth Rd., Ottawa, ON K1H 8L1; tel (613) 737-2728, fax (613) 737-2794

**Oct. 20-22, 1993:** Hygiene and Health Management in the Working Environment — 3rd International Symposium  
Antwerp, Belgium

*Official language: English*

3rd International Symposium, "Hygiene and Health Management in the Working Environment," c/o Ms. Rita Peys, TI-K VIV, Desguinlei 214, B-2018 Antwerpen, Belgium; tel 011-32-3-216-09-96, fax 011-32-3-216-06-89

**Nov. 4-7, 1993:** Philosophic Foundations of Bioethics — International Perspectives

Washington

*Deadline for abstracts: Apr. 15, 1993*

Dr. Eric M. Meslin, Centre for Bioethics, University of Toronto, Tanz Neuroscience Bldg., 6 Queen's Park Cres. W, Toronto, ON M8V 1X4; tel (416) 978-2709, fax (416) 978-1911