Maternity care and maternal serum screening

Do male and female family physicians care for women differently?

Christel A. Woodward, PHD June C. Carroll, MD, CCFP Greg Ryan, MB, FRCSC Anthony J. Reid, MD, MSC
Joanne A. Permaul-Woods, BSC Stella Arbitman, MD, CCFP Sharon B. Domb, MD, CCFP
Barbara Fallis, BSC, MD, FRCSC Jane Kilthei, RM

ABSTRACT

OBJECTIVE To examine whether male and female family physicians practise maternity care differently, particularly regarding the maternal serum screening (MSS) program.

DESIGN Mailed survey fielded between October 1994 and March 1995.

SETTING Ontario family practices.

PARTICIPANTS Random sample of 2000 members of the College of Family Physicians of Canada who care for pregnant women. More than 90% of eligible physicians responded.

MAIN OUTCOME MEASURES Attitudes toward, knowledge about, and behaviour toward MSS.

RESULTS Women physicians were more likely than men to practise part time, in groups, and in larger communities. Men physicians were more likely to perform deliveries; women were more likely to do shared care. Despite a shorter work week, on average, female physicians cared for more pregnant women than male physicians did. Among those providing intrapartum care, women performed more deliveries, on average, than men. Women physicians were more likely than men to offer MSS to all pregnant patients. Although average time spent discussing MSS before the test was similar, women physicians had better knowledge of when best to do the test and its true-positive rate. All differences reported were statistically significant ($P \leq 0.001$).

CONCLUSIONS Among family physicians caring for pregnant women, women physicians cared for more pregnant women than men did. Both spent similar time discussing MSS with their patients before offering screening, but more women physicians offered MSS to *all* their patients and were more knowledgeable about MSS than men physicians.

RÉSUMÉ

OBJECTIF Examiner dans quelle mesure les hommes et les femmes médecins de famille ont des pratiques différentes dans le domaine des soins de maternité, particulièrement en ce qui concerne le programme de dépistage maternel sérique (DMS).

CONCEPTION Sondage postal réalisé entre octobre 1994 et mars 1995.

CONTEXTE Pratiques familiales de l'Ontario.

PARTICIPANTS Échantillon aléatoire de 2000 membres du Collège des médecins de famille du Canada qui suivent des femmes enceintes. Plus de 90 % des médecins admissibles ont répondu au questionnaire.

PRINCIPALES MESURES DES RÉSULTATS Connaissances, attitudes et comportement face au DMS.

RÉSULTATS Comparativement aux médecins de sexe masculin, les femmes médecins étaient plus susceptibles d'exercer à temps partiel, en groupes et dans des communautés plus populeuses. Les hommes étaient plus susceptibles de faire davantage d'accouchements et les femmes de s'impliquer dans les soins partagés. Malgré une semaine moyenne comportant moins d'heures de travail, les femmes médecins suivaient plus de femmes enceintes que leurs confrères masculins. Quant à celles qui s'impliquaient dans les accouchements, leur nombre d'accouchements était en moyenne plus élevé que celui des hommes. Les femmes médecins étaient plus susceptibles d'offrir le DMS à toutes les femmes enceintes. Par contre, le temps consacré à la discussion avant de procéder au test fut semblable mais les femmes médecins connaissaient mieux le moment idéal pour procéder au test et son taux de résultats vrais positifs. Toutes les différences rapportées furent statistiquement significatives ($p \leq 0{,}001$).

CONCLUSIONS Chez les médecins de famille impliqués dans les soins aux femmes enceintes, les femmes médecins ont suivi un plus grand nombre de femmes enceintes que leurs confrères masculins. Les deux sexes ont consacré le même temps à discuter le DMS avec leurs patientes avant d'offrir le dépistage mais plus de femmes médecins ont offert le DMS à toutes leurs patientes et elles connaissaient mieux le DMS que leurs confrères de sexe masculin.

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In Ontario, as in other Canadian provinces, the proportion of female physicians has grown markedly in the past 20 years.[1-4] This is particularly true in primary care, an area of medicine that appears to attract women.[4,5] The effects of this increase are just beginning to emerge.

Women's tendency to spend less time on professional activities or to work part time, especially while raising young families, has long been noted.[1-3,5] Until recently, it was thought that sex did not affect the type and mix of services provided by physicians practising in the same medical field, but in the past 10 years, differences have been reported in the age and sex structure of practices and in the service mix they provide.[6-9] The extent to which the former explains the latter is not fully understood.[10]

A recent study[11] reports that, even when controlling for patient sex and health status, some differences between male and female physicians' practice remain. During new patient visits, female physicians devoted much more time to preventive health services and to discussing family information than male physicians. Male physicians devoted more time to history taking. However, visit times were similar in length.

Female primary care physicians find a sizable proportion of their practices consist of women, particularly women in their childbearing and child-rearing years.[6-8] Concern has been expressed that the unpredictable hours of work make it more difficult for female physicians to include obstetrics in their practices, even if this service is requested by their patients.[12] Yet, recent Ontario data suggest that women physicians neither chose shared care (transfer of pregnancy care to another physician for delivery) nor opted out of antenatal care more than men.[13] Only 39% of male and female family physicians were practising obstetrics 3 to 5 years after certification. However, men were more likely *not* to participate in antenatal care (27%) than women (18%). The satisfaction that female physicians report in working with pregnant women could partly explain their high participation rate in obstetrics despite its interference with lifestyle.[14]

On July 1, 1993, the Ontario Ministry of Health introduced maternal serum screening (MSS), as a provincewide pilot project to be offered to *all* pregnant women. The MSS is a blood test that measures three maternal serum markers: α-fetoprotein, human chorionic gonadotropin, and unconjugated estriol.[15] Using the woman's age, an individual risk score is calculated for the fetus having Down syndrome, trisomy 18 syndrome, or an open neural tube defect.[16] The screening protocol for MSS required that women be counseled about the program and told about possible outcomes, further testing, and risks.[15] Test results are most accurate when the test is done between the 16th and 18th week of pregnancy.

Family physicians in Ontario were surveyed on their attitudes, knowledge, and behaviour regarding MSS. Results allowed for secondary data analysis to examine whether male and female family physicians practise maternity care differently as to average numbers of pregnant women served, deliveries performed, and attitudes, knowledge, and practice style regarding MSS.

METHODS

Survey

No accessible sampling frame provided information on which family physicians looked after pregnant women. Thus, a random sample of 2000 Ontario family physicians was selected from the membership list of the College of Family Physicians of Canada (CFPC). This group was oversampled in recognition that many physicians did not provide antenatal or intrapartum care and would be ineligible for the study.

The survey questionnaire sought information on physician and practice characteristics, how physicians had implemented MSS in their practices, their knowledge of the MSS protocol, and their attitudes toward the MSS program. The questionnaire used a

Dr Woodward *is a Professor in the Department of Clinical Epidemiology and Biostatistics at McMaster University in Hamilton, Ont.* **Dr Carroll** *is an Assistant Professor in the Department of Family and Community Medicine at the University of Toronto.* **Dr Ryan** *is an obstetrician at Mount Sinai Hospital in Toronto and is an Assistant Professor in the Department of Obstetrics and Gynaecology at the University of Toronto.* **Dr Reid** *is Assistant Professor in the Department of Family and Community Medicine at the University of Toronto.* **Ms Permaul-Woods** *is a Research Associate at Mount Sinai Hospital in Toronto.* **Dr Arbitman** *is a community family physician in Toronto.* **Dr Domb** *is a lecturer in the Department of Family and Community Medicine at the University of Toronto and is a family physician at Sunnybrook Health Science Centre.* **Dr Fallis** *is an obstetrician in Orillia, Ont.* **Ms Kilthei** *is Co-Registrar of the College of Midwives of Ontario.*

combination of multiple-choice and short-answer questions. It was developed from previous questionnaires, was pretested, and was discussed with two focus groups of family physicians, midwives, and obstetricians before fielding.[17]

Family physicians were surveyed between November 1994 and March 1995. The first mailing included a cover letter from the President of the Ontario College of Family Physicians endorsing the survey. All physicians who were sent the survey received a thank you or reminder postcard 3 weeks later. After 5 weeks, nonrespondents were sent a second mailing. Finally, a random sample of 25% of the remaining nonrespondents received telephone calls.

Data analysis

Survey data were entered and analyzed using the SAS program. We chose to look for potential differences in practices in areas where the literature suggested some differences based on sex of physician might occur and focused on knowledge, attitudes, and behaviour. The major questions asked in the survey were included in this analysis. Differences

Table 1. Practice profiles of family physicians who care for pregnant women

PRACTICE CHARACTERISTICS	MALE PHYSICIANS N (%)	FEMALE PHYSICIANS N (%)	TOTAL N (%)
COMMUNITY SIZE			
More than 50 000	255 (62.5)	272 (76.0*)	527 (68.8)
50 000 or less	153 (37.5)	86 (24.0)	239 (31.2)
PRACTICE TYPE			
Group	261 (66.4)	281 (81.7*)	542 (73.5)
Solo	132 (33.6)	63 (18.3)	195 (26.5)
PRACTICE STATUS			
Full time	388 (95.8)	190 (52.9*)	578 (75.6)
Part time	17 (4.2)	169 (47.1)	186 (24.4)
PRACTICE REGION			
Southwest	74 (18.0)	42 (11.6*)	116 (15.0)
Central west	100 (24.4)	69 (19.0*)	169 (21.9)
Central east	146 (35.6)	134 (36.9*)	280 (36.2)
East	50 (12.2)	89 (24.5*)	139 (18.0)
North	40 (9.8)	29 (8.0*)	69 (8.9)
MAINLY FEE FOR SERVICE			
Yes	360 (88.0)	318 (88.3)	678 (88.2)
No	49 (12.0)	42 (11.7)	91 (11.8)
INVOLVED IN MEDICAL EDUCATION			
No	262 (64.7)	235 (65.6)	497 (65.1)
Part time	123 (30.4)	104 (29.0)	227 (29.8)
Full time	20 (4.9)	19 (5.3)	39 (5.1)

**Male-female difference* $P \leq 0.001$.

Table 2. Maternity care activities of family physicians who see pregnant women

	MALE PHYSICIANS		FEMALE PHYSICIANS	
MATERNITY CARE	N	MEAN (SD)	N	MEAN (SD)
No. of pregnant women cared for yearly	405	27.6 (23.6)	357	38.1 (35.2)
No. of deliveries (of those doing intrapartum care)	189	32.8 (24.3)	139	48.8* (27.3)
No. of pregnant women ≥35 years at delivery	400	11.3 (10.3)	354	11.9 (9.2)

**Male-female difference* P = *0.001.*

between male and female family physicians were examined using the χ^2 statistic for categorical data and *t* test for continuous data. When *t* tests were used, Levene's test for differences in variances was also used to determine whether variance should be considered equal or unequal. Statistical significance was set at $P \leq 0.01$. Differences between $P < 0.05$ and $P > 0.01$ were identified as "interesting."

RESULTS

Response rate

Of the 2000 family physicians surveyed, 1128 returned questionnaires. Of these, 350 were ineligible (did not do antenatal or intrapartum care, were not currently practising, or had retired). Telephone calls to 225 nonrespondents (25% of nonrespondent sample) revealed that 206 (91.6%) were ineligible. Applying this ineligibility rate to the remainder of nonrespondents yielded an estimated response rate of 91% among eligible physicians. Altogether, 778 physicians responded: 363 (47%) women and 410 (53%) men. The responses of five who did not indicate their sex were omitted.

Description of participants

Almost one third of family physicians worked in communities of 50 000 or fewer people. Female physicians were significantly more likely to practise in larger communities (**Table 1**) and to be in group practices, but significantly less likely to practise full time (about 67% of the women who worked part time said they worked three quarters of the time). Regional differences in the sex of respondents were also noted: women were less likely to be in south or central western Ontario and more likely to be in eastern Ontario than men. Most respondents indicated they received fee-for-service payments; no sex difference was noted by payment method. The men and women studied were equally likely to be involved in postgraduate or undergraduate medical education.

Maternity care activities

Among the physicians studied, 56.6% provided only antenatal care while 43.4% also delivered babies. Female physicians (39.0%) were less likely to attend births than male physicians (47.3%), an interesting difference ($\chi^2 = 5.5$; $P = 0.019$). Despite the large number of women who described themselves as working three-quarter time or less, female physicians reported caring for significantly more pregnant women yearly than men (**Table 2**). Although fewer women provided obstetric care, those who did delivered significantly more babies yearly than their male colleagues.

Attitudes and behaviour regarding MSS

Overall, 96.0% of respondents indicated they offered MSS to pregnant women. Female physicians were significantly more likely to offer MSS to *all* their patients; men offered it selectively or not at all (**Table 3**). Men and women made similar recommendations about the MSS program. Three response alternatives were supplied for the question "What would you recommend to the Ministry of Health regarding the MSS test?": keep it as is, scrap it, or change it. Nearly 47% would keep the MSS program as it was, about 29% recommended changing it, and 24% recommended scrapping it. No sex difference was seen in time spent discussing MSS (mean time: women 10.4 minutes; men 10.5 minutes.)

Time male physicians spent with their patients, however, varied much more than that of female physicians. (Standard deviation for men was 7.5 minutes; for women 5.6 minutes. This difference in variability was significant by Levene's test: $F = 1.76$; $P \leq 0.01$). Almost all physicians told patients immediately when results were positive. Men physicians

were significantly more likely than women to communicate negative results immediately.

Knowledge of the MSS test

Although 79.4% of physicians knew that MSS is best done between the 16th and 18th week of pregnancy, women were significantly more knowledgeable about the test than men (**Table 3**). Women were significantly more likely than men to know that the initial positive rate for MSS is thought to be from 6% to 8% and that 1% to 4% of initial positive MSS tests are true positives.[15-18] Knowledge of the initial positive rate (19.0% correct) and understanding of the true-positive rate (18.4% correct) was low (**Table 3**).

DISCUSSION

Differences noted between the practice profiles of male and female physicians who cared for pregnant women were similar to those reported in other studies of primary care physicians.[5-7]

Perhaps more interesting, from a medical human resource perspective, is the finding that, among physicians doing maternity care, the average female physician saw more pregnant women over a year than the average male physician, even though only 52.9% of women indicated they practised full time compared with nearly 96% of men. Although women were more likely to do shared care than men and less

Table 3. Behaviour and attitudes toward MSS program

PHYSICIAN RESPONSES	MALE PHYSICIANS N (%)	FEMALE PHYSICIANS N (%)	TOTAL N (%)
OFFER MSS			
Always	317 (77.9)	319 (89.1*)	636 (83.1)
Selectively	65 (16.0)	34 (9.5)	99 (12.9)
No	25 (6.1)	5 (1.4)	30 (3.9)
RECOMMENDATION TO MINISTRY OF HEALTH REGARDING MSS			
Keep it as is	161 (46.8)	141 (46.8)	302 (46.8)
Change it	98 (28.5)	90 (29.9)	188 (29.2)
Scrap it	85 (24.7)	70 (23.3)	155 (24.0)
COMMUNICATES POSITIVE TEST RESULTS IMMEDIATELY			
Yes	336 (93.1)	329 (95.1)	665 (94.1)
No	25 (6.9)	17 (4.9)	42 (5.9)
COMMUNICATES NEGATIVE TEST RESULTS IMMEDIATELY			
Yes	98 (26.1)	64 (18.1*)	162 (22.2)
No	277 (73.9)	289 (81.9)	566 (77.7)
KNOWS WHEN BEST TO SEND FOR MSS TEST			
Yes	305 (74.4)	309 (85.1*)	614 (79.4)
No	105 (25.6)	54 (14.9)	159 (20.6)
KNOWS MSS'S INITIAL POSITIVE RATE			
Yes	63 (15.4)	84 (23.1*)	147 (19.0)
No	347 (84.6)	279 (76.9)	626 (81.0)
KNOWS TRUE-POSITIVE RATE AMONG THOSE WITH INITIAL POSITIVE RESULTS			
Yes	55 (13.4)	87 (24.0*)	142 (18.4)
No	335 (86.6)	276 (76.0)	611 (81.6)

**Male-female difference* $P \leq 0.01$.

likely to attend births, those who did intrapartum care attended, on average, 16 more births yearly than men who did deliveries. Although lifestyle issues sometimes deter women from participating in intrapartum care,[19] those who do participate find such activities form a large part of their practices. This situation likely results from higher patient demand for those female physicians to deliver babies, given that their practices include many women in their childbearing years.[6,7]

Some differences in how men and women deliver the MSS program were also noted, although men and women made similar recommendations about the program to the Ontario Ministry of Health. Female physicians have been reported to take a greater interest in preventive care, particularly preventive care related to women's health, such as Pap smears and mammography.[20,21]

To the extent that MSS can be seen as an aspect of women's health, it is not surprising that female physicians are more likely to offer the service to all pregnant women or that their knowledge of the screening program is somewhat better than that of their male counterparts. No differences emerged in average counseling time for MSS, a finding that adds support to existing findings that women do not spend more time than men seeing patients with the same presenting issues.[11] However, because their patients and the problems they present often differ, men and women doctors spend different amounts of time with patients.[9]

Limitations

We surveyed only primary care physicians who were members of the CFPC, and we were unable to discern in advance whether physicians participated in caring for pregnant women. This latter problem caused difficulties in determining precisely how many of those eligible for inclusion in this study responded. Time and money constraints led to determination of eligibility in a randomly selected subset of nonrespondents rather than in the entire nonrespondent group. The procedure we used precluded determination of a sex difference in response rate among eligible physicians. It also did not allow us to determine whether female family physicians in Ontario were more or less likely to participate in antenatal care.

However, in another recent Ontario-based study, male family physicians were somewhat less likely than women to include these services in their practices.[13] Our data appeared to confirm this observation because 46.5% of respondents were female physicians while female physicians comprise about 39% of the membership of the CFPC (personal communication from Jackie Fernandes, CFPC's Membership Manager, 1995). The validity of answers is always somewhat suspect in self-report surveys, yet there is no reason to believe that men or women would be more likely to be biased in recall of their behaviour.

Conclusion

Among family physicians providing maternity care, female physicians care for more pregnant women and deliver more babies than male physicians do. More female physicians than male physicians offer MSS to all their patients, and female physicians are somewhat more knowledgeable about MSS.

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Correspondence to: *Dr C.A. Woodward, Room 3H4, Department of Clinical Epidemiology and Biostatistics and Centre of Health Economics and Policy Analysis, McMaster University, 1200 Main St W, Hamilton, ON L8N 3Z5; telephone (905) 525-9140, ext 22860, fax (905) 546-5211*

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