Women Physicians and Family Medicine Monograph/Literature Review

2008

Originally prepared for the Wonca Working Party on Women and Family Medicine Pre-conference Strategic Planning Workshop 17th Wonca Triennial 2004, Orlando, Florida

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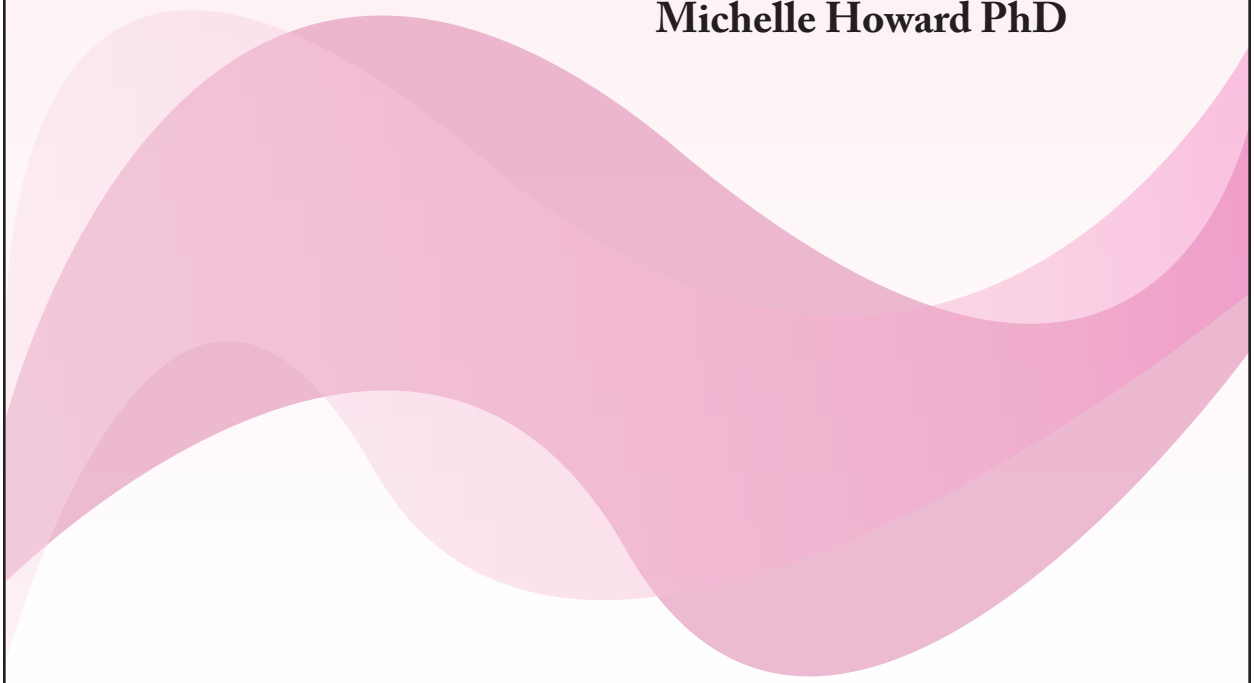

Preface To The Monograph/ Literature Review

This Women Physicians and Family Medicine Monograph/Literature Review (Monograph) was originally prepared for the Wonca Working Party on Women and Family Medicine to help guide strategic planning at the pre-conference Strategic Planning Workshop, WONCA Triennial 2004, Orlando, Florida. Most of the literature review and first draft were completed in 2004.

In February 2002, three of the authors, Cheryl Levitt, Lucy Candib and Barbara Lent, met at Langdon Hall, Ontario, Canada, to discuss the approach to the Monograph/Literature Review as proposed at the WONCA triennial conference in Durban in 2001. We developed a framework based on our knowledge of the issues. This framework set the stage for the chapter subjects (women physicians in training; women physicians in academia; women physicians in practice; women physicians in organizational medicine; women physicians caring for themselves and their families; and women physicians and the doctor-patient relationship). We also developed itemized lists of the issues we hypothesized would be found in articles and research reports in the literature. This group of topics formed the bases of the executive summaries. Search strategies were developed for indexed and grey literature with key words specific to the objectives. Searches took place from June 2002 to June 2004. Bibliographies and reference lists of relevant articles were also searched.

We looked for articles as evidence to support statements we had proposed in the executive summaries. Where evidence was not found, we dropped the statements and developed additional statements summarizing the new evidence we found in our search. We wrote chapters to describe the evidence we found in the literature and developed an alphabetized list of cited literature and abstracts for each chapter. We reproduced abstracts that were present in the published article and prepared summaries where there were no abstracts present. In 2004, we produced a draft edition and following that, a series of feature articles based on the chapters for Wonca News. New references were cited in the feature articles although no further systematic search was undertaken after June 2004.

This 2008 edition of the Monograph includes the additional works we cited in our published feature articles in the Wonca News in 2006-2007.

These feature articles are listed below:

1. Working Party Seeks to Enhance Role of Women Family Doctors in Wonca and Health Systems. Wonca News, Volume 32; Number 3; June 2006, p4. http://www.womenandfamilymedicine.com/publications/news/wonca-news-pdf/WoncaNewsJune2006.pdf

2. Women in Organizational Medicine. Wonca News, Volume 32; Number 3; June 2006, p6 http://www.womenandfamilymedicine.com/publications/news/wonca-news-pdf/WoncaNewsJune2006.pdf

3. Women Doctors and the Doctor-Patient Relationship. Wonca News: An International Forum for Family Doctors, Volume 32; Number 5; October 2006, p13

http://www.womenandfamilymedicine.com/publications/news/wonca-news-pdf/WoncaNewsOct06.pdf

4. Women Physicians Caring for Themselves and their Families. Wonca News: An International Forum for Family Doctors, Volume 32; Number 4; August 2006, p5, this Monograph has been updated with current reviews. http://www.womenandfamilymedicine.com/publications/news/wonca-news-pdf/WoncaNewsAug06.pdf

5. Women Family Doctors in Practice. Wonca News: An International Forum for Family Doctors, Volume 32; Number 6; December 2006, p6. http://www.womenandfamilymedicine.com/publications/news/wonca-news-pdf/WoncaNewsDec2006.pdf

6. Women in Training. Wonca News: An International Forum for Family Doctors, Volume 32; Number 6; February 2007, p14 http://www.womenandfamilymedicine.com/publications/news/wonca-news-pdf/WoncaNewFeb07.pdf

7. Women in Academia. Wonca News: An International Forum for Family Doctors. Volume 32; Number 2; April 2007: p5-7. http://www.globalfamilydoctor.com/publications/woncanews/WN%20Apr%2007/index.htm

In the Monograph, each chapter contains an executive summary, a literature review on the topic area and an inventory of each of the research articles reviewed. The scope of the Monograph is limited by the authors' cultural backgrounds and by the geographic and language bias of the literature; in addition, some of the articles may be somewhat outdated. We will continue to add new material to this document from the international literature and the results of the ongoing research being undertaken by the Working Party on Women and Family Medicine.

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Chapter One

Women Physicians in Training

Executive Summary

A. Gender Bias in Medical Education and Research

- Medical curriculum is "gendered": reflects a perspective predominantly focused on the male patients. The bias has occurred in development and propagation of medical curricula and is in textbooks, research, etc.
- In general, there has been an absence in medical curricula of concepts of gender as a determinant of health, an issue which is particularly relevant to women's health and well-being
- However, there has been some encouraging progress in this area, for example the Medical Women's International Association publication, the "Manual for Gender Mainstreaming", the NAWHME publication "Women's Health in the Medical School Curriculum," and the publication by the Public Health Service Office on Women's Health (U.S.) "Women's Health in the Medical School Curriculum" are indicators of progress in this area and should be used to encourage further development

B. Factors in Choosing Family Medicine

- Presence of role modeling- it is easier to make a career choice in family medicine where there is ample role modeling
- Stereotyping about family physicians/family medicine as a specialty (i.e. family medicine is regarded as less prestigious than other specialties) may interfere with choice and scope of practice considered by trainees and offered to them
- Potential ability to focus on maternal and child care and the underserved may attract women towards certain career choices
- Women are more influenced than men by family considerations, scope, and flexibility of practice in choosing a specialty, and are less influenced by income and prestige
- Difficulties of coverage and call may discourage women planning to have families from practicing primary care
- Relatively short training period may appeal to women
- There is potential for group practice in primary care, a practice style that appeals to women physicians for reasons of flexibility

C. Training for Rural Medicine

- Women physicians are greatly underrepresented in rural medicine, and are needed in this area

- Rural physicians perform a greater breadth of activities because of the lack of specialists in rural areas, therefore creating the need for specialized training
- Flexible training is required to ensure skills in a wide variety of areas can be acquired by rural physicians
- Important factors in deciding to practice in rural areas include spouse's career opportunities, child care and education opportunities

D. Harassment in training

- Harassment is present in family medicine as in all other training programs
- Women physicians are much more aware of the existence of sexual harassment in medical training than men
- Sexual orientation is a target for sexual harassment for both women and men

E. Marriage during training

- Women often marry during training, an intense clinical and academic time
- Women physicians married to physicians tend to practice fewer hours than their spouses and spend more hours on family and household work
- A benefit of dual-physician marriage is mutual understanding of professional life

F. Parenting during training

- Varying flexibility of schools to accommodate maternity/paternity leave, breast-feeding and child-care
- Varying flexibility for delaying training in some countries, varying medical insurance and maternity benefits, varying child care in undergraduate and postgraduate training programs
- Potential for shared training positions for parent trainees
- High degree of stress while pregnant during demanding rotations, faced with an unsupportive environment from peers and supervisors if unable to fulfill all usual training obligations
- Increased risk of obstetrical complications for the resident in countries with minimal flexibility in their medical training

G. Cultural and class issues

- Discrimination towards women of minority groups leads to increased pressure and stress for those women who are working in a predominantly white medical establishment
- In US, affirmative action policies have been implemented in order to enhance diversity. Suggestions of community education, targeting young women in math and science and implementing strategies for more open communication within medical schools are discussed

- Training requirements may not be compatible with cultural restrictions on women's mobility and activities, e.g. cultural restrictions may not support un-chaperoned exposure to male patients

Literature Review: Women Physicians in Training

Introduction

Historically, in some countries, women have overcome numerous barriers in order to gain entrance into the medical profession. Women were not allowed to attend medical school in the US or Canada until the mid and late 1800s respectively (Hacker, 2001). In 1972, the Education Amendments Act mandated that schools in the United States not deny any student admission on the basis of sex (Bickel, 2001). Today, after overcoming numerous institutional and societal barriers, women comprise approximately half of medical students worldwide (Wear, 1994; Fitzpatrick, 1995; Notzer, 1995; Xu, 1995; CMA, 1999; Bickel, 2001; Gjerberg, 2002; McMurray, 2002). Women thus appear to have obtained equality in their acceptance to medical school; however equal opportunity in all aspects of medicine has yet to be achieved.

In this section, the literature that describes some of the differences between men and women in training in medical school and residency/postgraduate education is explored. Studies, thoughtful reports and observations published in the medical literature describe the sexes as still divided with respect to specialty choice; non-clinical contributions; harassment experiences; marriage and parenting; and economic remuneration. These gender differences are modified by cultural and class issues as well. The literature focuses mainly on the challenges and barriers facing women, but often does a relatively poor job of highlighting the positive contributions of women.

Gender Bias in Medical Education and Research

Empirical information and published reports hardly do justice to the more complex and entrenched problem of the male world view inherent in the medical model as it has been taught, researched and practiced in many countries (Candib, 1995, Phillips 1995). The bias in medical thought goes beyond textbooks to the very principles that underlie how we think about individual growth and development, the family, the nature of parenthood, the use of power within the family and the conduct of the doctor-patient relationship. Gender bias is also apparent in medical textbooks, as men are over-represented and shown to depict the norm or standard of health (Mendelsohn, 1994). Phillips has noted that stereotypes in medical education persist even when newer methods of learning are applied, such as problem-based small group learning; that male examples are generally used for health problems that are not sex-specific, and that there is more emphasis given to social or mental issues in the context of women's health issues (Phillips, 1997). These stereotypes in teaching influence medical students' attitudes towards women patients (Phillips. 1999). In research studies, women have historically been excluded from sampling and therefore under-represented in clinical trials, and until the last decade, findings of studies based on men were incorrectly assumed to be universally applicable to women (Schiebinger, 2003). While gender bias in research is now being addressed, mainly as a result of women's activism, the underlying bias against women in all aspects of medical education, training, practice and investigation must be remedied for the overall climate to change (Phillips, 2002). Educators recommend that changing bias would include ensuring equal representation of men and women in education material, ensuring men are not portrayed as the "norm", using inclusive language, and ensuring that women's health is not limited to reproductive aspects (Zelek, 1997).

However, there has been some encouraging progress in this area, as demonstrated by several educational projects undertaken by American and International organizations (Medical Women's International Association publication "Manual for Gender Mainstreaming" (2002); the National Academy of Women's Health Medical Education "Women's Health in the Medical School Curriculum" (1996); Public Health Service Office on Women's Health (U.S.) "Women's Health in the Medical School Curriculum" and the efforts in Nordic countries to integrate gender in medical research and education (Hammarstrom, 2003).

Factors in Choosing Family Medicine

Studies show an uneven distribution of men and women physicians across disciplines. Women are more likely to choose primary care specialties, particularly pediatrics and family medicine (Bickel, 1995; Xu, 1995; CMA, 1999; Bickel, 2001; Howe, 2001; McMurray, 2002), whereas men are more frequently drawn to surgery (Bickel, 1995; CMA, 1999; Howe, 2001, Neumayer, 2002) and internal medicine (Bickel, 2001; Gjerberg, 2002). Interestingly, women often do not start out with these intentions. In a study conducted in Norway by Gjerberg (2002), physicians of both sexes were just as likely to begin their career in surgery or internal medicine, although men were far more likely than women to complete their specialist training. In a U.S. study by Bickel and Ruffin (1995), only 8% of women students expressed interest in pediatrics at the beginning of their medical training, yet a third entered a pediatric residency. This suggests that it is may not be for lack of interest that women are under-represented in certain areas and over-represented in others, but rather that circumstances throughout their training result in this segregation of the sexes.

Several hypotheses have been put forth to account for gender differences within various specialties. Xu et al. (1995) and Bickel & Ruffin (1995) both studied U.S. medical school graduates to determine what influenced their career decisions. Men were influenced by income, role models prior to medical school and beliefs that medicine is a noble and prestigious profession with many opportunities for personal and professional advancement. Alternatively, women were influenced by personal considerations such as children, spouse and other familial obligations, personal and social values and opportunities for clinical experience with the community and the underserved. In addition, a study in the U.K. found that women were more strongly influenced by community medicine training settings than were men, and that career choice was unstable in the early years and could be influenced by the presence or absence of strong role models (Howe, 2001).

These value differences between the genders lead men and women physicians to different specialties. Numerous articles have indicated that many physicians cite a lack of prestige as a reason for not pursuing primary care, or more specifically, family practice (Bowman, 1996; Lynch, 1998; Schafer, 2000). In accordance with the aforementioned values, this lack of prestige may explain why men are more likely to enter highly specialized disciplines. Women, on the other hand, may be drawn to fields where interpersonal and social strengths are emphasized over technical qualities. Therefore, women may be more likely to enter primary care and family practice, as this specialty allows for personal flexibility (type of practice, limited work hours etc), direct interactions with the community, and in some countries a relatively short residency program, all of which women value highly. These factors appear to outweigh the apparent lack

of prestige for women residents. Nevertheless, the lower income associated with family medicine may be of concern to students, as many graduate with significant loans that push them to seek higher income specialties.

Personal experience and social expectations also influence gender differences within medicine. Initial and/or intense exposure to any given career will influence the chances of staying/specializing in that field (Linzer, 1994; Gjerberg, 2002). Currently, in the U.S., there is a high demand for physicians in generalist practice, which includes family practice, general internal medicine, general obstetrics and gynecology and general pediatrics (Bowman, 1996; Lynch, 1998; Schafer, 2000) because of shortages in these fields. Faculty members play an important role in encouraging women to enter these specialties (Bickel, 2001). The segregation is exacerbated by the lack of women as role models in some specialties (Bickel, 1995; Xu, 1995; Neumayer, 2002). Linzer et al (1994) found that the availability of mentors is one of the most important factors influencing career selection, especially for women and minority students. It would appear that the high concentration of women role models in primary care has the potential to foster further intensification of women's presence in primary care, and specifically, family practice. One example of a successful initiative is the Ontario Medical Association Mentorship Program in which women medical students are paired with a woman physician with similar interests and career ambitions (www.oma.org/pcomm/omr/jul/03mentor.htm, accessed January 17, 2008).

Training for Rural Medicine

As indicated in Topic 2, there is a shortage of family physicians in many countries and physicians are especially lacking in rural areas and within the small number of doctors practicing rural medicine, women are underrepresented, and greatly needed (Johnston, 1998; Tolhurst, 2000; Wainer, 2000; Mitka, 2001). Those women who do practice rural medicine have been found to experience challenges distinct from men, and from their urban women colleagues. In a recent survey of 442 urban and rural family physicians in Ontario, Canada, Incitti et al. (2003) found that 84% of women physicians in rural areas worked more than 40 hours per week, compared to 53% of women physicians in urban areas. Women in rural areas were significantly less satisfied with their work hours and the balance between their personal and professional life and were also less satisfied with work opportunities for their spouses and educational opportunities for their children. Both rural men and women physicians are less satisfied with the professional backup available. Similar results have been found in Australia, with women rural GPs and specialists altering their practice to accommodate family responsibilities (Wainer 2004). All these factors create specific issues that need to be dealt with when training rural physicians, specifically women rural physicians.

Flexible training programs that are sensitive to the needs of those servicing rural areas are necessary, especially when trying to attract women physicians to rural areas (Wainer, 2004). Family physicians in rural areas experience a much broader scope of practice than their urban counterparts and are required to perform a greater breadth of activities, due to the lack of specialists. In rural hospitals in Canada, advanced maternity skills, including use of forceps, manual removal of the placenta, repair of lower genital tract lacerations, and cesarean sections are often performed by family physicians (CFPC, 2001). For women doctors, the enhanced training for working in these areas may present special challenges. Additional time, childcare

support, and time away from family may prevent women physicians from acquiring these skills. Several organizations, in Canada and Australia have suggested the need for flexible training of rural physicians (CFPC, 2001; Wainer, 2002), specifically with respect to providing professional support (locum programmes) and continuing medical education accessible to women in terms of cost, travel, child care availability and manageable hours of work (Wainer, 2002). The College of Family Physicians of Canada indicates that the continuation of high quality rural medical care depends on the availability of workable training programs that allow physicians to acquire a broad range of skills.

Harassment in Training

The numbers of men and women in medical school are comparable; however the experience of women in medical school remains different from that of men. Women report experiencing or witnessing inappropriate behavior such as sexual harassment, advances, and sexual slurs in medical school more frequently than their men colleagues (Wear, 1994; Bickel, 1995; Jacobs, 2000; Bickel, 2001; Larsson, 2003; Stratton, 2005).

In 1993, Komaromy reported in the New England Journal of Medicine on sexual harassment of internal medicine residents in a university training programme. Of the 82 residents surveyed, 74% of women and 22% of men reported that they had been sexually harassed at least once during their training (Komaromy, 1993). In Canada, Cook et al. (1996) studied residents at McMaster University and reported that residents in training programs commonly experienced discrimination on the basis of gender and sexual harassment. A most striking finding was that even more so than physicians, nurses treated residents differently on the basis of gender. In a U.S. study designed to diminish gender insensitivity and sexual harassment, 92% of women before the intervention and 71% after reported observing sexually harassing behavior, whereas only 53% and 41% of men in each respective period gave comparable reports, however perception of harassment and discrimination declined significantly after the intervention for both women and men (Jacobs, 2000). The discrepancy between men's and women's responses could stem from a lack of clarity in what constitutes sexual harassment. Jacobs et al. further noted that, although almost 50% of faculty reported having experienced at least one of six behaviors selected from the Equal Employment Opportunity Commission guidelines of what comprises sexual harassment, less than 25% answered yes when asked directly if they had experienced sexual harassment. Stratton et al (2005) have also found that gender discrimination and sexual harassment in medical school may affect choice of specialty during residency selection, with the most discrimination and harassment experienced by women choosing general surgery. Men students choosing obstetrics and gynecology also experienced the same issues.

Although specific policies have been created to address the problem, they have yet to break down the barriers that exist for women (Wear, 1994). Cook and her colleagues (1996) recommended a variety of educational, behavioral and structural initiatives to help prevent the perpetuation of these attitudes and behaviors for future generations of residents. Jacobs et al. (2000) also suggest the need to educate the community, the students and the faculty in a flexible, multifaceted way that will facilitate behavioral changes, in order to begin to diminish the incidence of sexual harassment in medical training.

Harassment regarding sexual orientation is also a concern for medical students. In a study of gays and lesbians in the medical profession, conducted in Canada in Vancouver, Toronto and Hamilton, the majority feared discrimination in the medical community because of their sexual orientation (Risdon, 2000). They also reported fearing that their sexual orientation would be disadvantageous to their residency applications.

A hostile training environment can have serious consequences for medicine. A study by Hinze (2004) of residents in the southern U.S. in various specialties of one institution found that women are reluctant to speak out against sexual harassment, and tended to minimize its impact for fear of being labeled overly 'sensitive'. Trainees who feel harassed may be distracted from their education, and patient care may suffer; they may feel alienated by the educational process and decide against further training; in extreme cases, they may even be influenced to leave the field (Grant, 1988). In a study in Sweden of undergraduate and graduate students in the Faculty of Medicine, respondents, particularly women, self-reported health and educational impacts of experiencing sexual harassment (Larsson, 2003). In a study of general harassment and belittlement perceptions in 16 U.S. medical schools, by senior year, 42% and 84% of students reported having ever been harassed or belittled by faculty, students, residents, fellows, or patients (Frank, 2006). While there were no differences between men and women, there were significant associations between these experiences and mental health problems, stress, alcohol consumption, and confidence in career choice.

Marriage during training

The majority of respondents, in a U.S. survey of women physician members of the Minnesota Medical Association were married during their medical training (Smith et al., 2002). Harari (1998) hypothesized that during medical training these relationships provide stability, reassurance and comfort during a time of extreme stress and hardship, but that once medical school is over many couples realize that they do not have much in common after all. The divorce rate for dual physician marriages in the U.S. is not much higher than the national average (11.4% vs. 9.8%), although many who marry during medical school or residency and later divorce, warn about marrying during those times, as "decision making is sometimes poor in medical school and/or residency years due to the intensity of training and academics" (Smith, 2002).

As the number of women physicians increases, so do the number of dual physician marriages. Studies from both North America and Australia have predicted that soon half of all physicians will be married to other physicians (Tesch, 1992; Harari, 1998; Sobecks, 1999; Smith, 2002).

Women physicians married to men physicians have more domestic responsibility and work fewer hours than women physicians married to non-physician professionals (Woodward, 1996). Overall, Smith et al. (2002) found that the advantages outweighed the disadvantages of being in a dual physician marriage, with the greatest advantage being mutual understanding of professional responsibilities. However, respondents did note that the greatest disadvantage of being in a dual physician marriage was the lack of personal and family time.

Parenting during Training

Secondary data compiled from the annual reports on undergraduate education in the U.S. indicate that women consistently drop out at a higher rate than men (Fitzpatrick, 1995). The high stress environment of medical school and residency training can be further exacerbated by pregnancy and childbirth especially for women. Several North American studies have estimated that approximately half of all women residents will give birth during their training (Philibert, 1995; Davis, 2001). Taking time off for children during residency interrupts the academic schedule and also increases stress for other residents who must make up the missed rotations for their absent colleague (Canadian Pediatric Society, 1998; Davis, 2001). It has been found that women who had been pregnant during their residency find frequency of call is a major source of stress (Phelan, 1992, Walsh, 2005, Finch, 2003). A survey of obstetrics and gynecology program directors, conducted in the U.S. found that only 37% of programs have flexible schedules that can be rearranged so some rotations can go uncovered, leaving 63% of programs relying on the other residents to take up the slack (Davis, 2001). This may cause women excessive guilt, as they may feel that their pregnancy results in more work for their colleagues.

In 1978 the United States Pregnancy Discrimination Amendments to Civil Rights Act of 1964 disallowed unequal treatment of pregnant women in employment-related situations and required employers to treat pregnancy and childbirth as equivalent to other causes of disability (Davis, 2001). In a survey of housestaff by the Council of Teaching Hospitals in the United States (Philibert, 1995), over 75% of respondents reported having written policies for maternity, paternity and/or adoption leave. This does not necessarily include paid leave. Only 41% of hospitals offered dedicated paid maternity leave with a mean of 42 days, 25% of hospitals offered 1 to 7 days paid paternity leave and 15% offered 3-14 days paid adoption leave. In 64% of ob/gyn residency programs in the U.S., residents were required to make up time for any maternity leave taken beyond vacation leave, and 75% required make up if leave exceeded 8 weeks in the first 3 years of training. 32% offered childcare on site (Davis, 2001).

In Canada, in general, women are guaranteed at least 17 weeks of paid maternity leave, with another 37 weeks that can be used by either parent, up to a total of 52 weeks (www.workplace.ca/laws/employ_standard_comp.html, accessed Jan 17, 2008). Residents in training have contractual agreements in some provinces in Canada ensuring them supplemental benefits in the event of pregnancy. In Ontario, under the 2005-2008 contract, residents receive supplemental benefits to 75% of their salary for up to 25 weeks, in addition to federal employment insurance benefits, which are available for the 52 weeks to one parent. (http://www.pairo.org/Content/Default.aspx?pg=1087 accessed 28 February 2008). Residents of Quebec programs also have maternity benefit policies that provide additional salary for some period of time, above federal benefits (http://www.fmrq.qc.ca/formation-medicale/info_ang.cfm?noPageSiteInternet=138&cfgsection=affairessyndicales&cfgsoussection=conges-parentaux- accessed 26 February 2008).

Maternity leave policies during medical training, in other countries are variable. In Turkey, women are only entitled to 42 days maternity leave after a vaginal delivery, and 3 months after a cesarean section (Ortayli, 1996). In the UK, there are fewer maternity provisions than other European countries.

The majority of doctors have children at some point in their careers. When placed in a rigorous and rigid training schedule, many women put off childbirth until they are practicing physicians and are in control of their own hours. Practicing part time limits a woman's chances of advancing in her career and leaves a deficit in the number of patients that can be seen by practicing physicians leaving medical school. Therefore, by allowing for flexible training in the United Kingdom, while still maintaining the same quotas for total time and quality of training, physicians should be able to better combine family planning and career (Maingay & Goldberg, 1998; McMurray, 2002). Australia has also adopted such a philosophy, although the only widespread application of flexible training scheme programs occurs in general practice (McMurray, 2002). Several Australian specialists' colleges have formally accepted part time training (usually as a job share) and there are financial incentives, as well as state laws that encourage individual hospitals to accept pregnancy and part time training (Evans, 1995). Despite the increased flexibility available in both the U.K. and Australia, widespread acceptance of maternity and paternity leave and on site child care facilities are still lacking (McMurray, 2002). In a Canadian study of family medicine residents who gave birth and took maternity leave during residency, long hours and lack of flexibility in some rotations, particularly internal medicine, were barriers for obtaining adequate rest during pregnancy and for the maintenance of breastfeeding after return to work. Women were reluctant to ask for special arrangements, feeling that they must fulfill their obligations and "pay their dues" (Walsh, 2005).

The different working arrangements and maternity leave policies adopted by various countries appear to correlate with differences in health outcome in the physician's pregnancy. In clinical areas where pregnant residents continue to work long hours, experience frequent periods of sleep deprivation and long periods of walking, running and standing, some studies have reported increased numbers of complications (Grunebaum, 1987; Ortayli, 1996; Pinhas-Hamiel, 1999). In Israel, 33% of residents reported major pregnancy complications (a much higher percentage than seen in the general population) and their rate of premature delivery was two times higher than that of same age controls (Pinhas-Hamiel, 1999). In Turkey, women physicians were two times more likely than bank workers to have low birth weight babies, and physicians' babies appeared to have more subsequent health problems (Ortayli, 1996). A U.S. study of board-certified women obstetricians showed that infants delivered during residency were 7.5 times more likely to have intrauterine growth restriction, than those delivered outside of residency (Grunebaum, 1987). Another study also conducted in the U.S. found that women residents were approximately three times more likely as the spouses of men residents to terminate their pregnancies voluntarily (Klebanoff, 1991). There was only a slightly and non-significantly higher incidence of spontaneous abortion in women residents (14.8%) compared to partners of men residents (12.6%), however residents who worked more than 100 hours per week were significantly more likely to have pre-term delivery than residents who worked fewer. These authors speculated that the relatively high rate of voluntary abortion may be directly related to the high pressures and inflexible schedules that women residents' experience.

In Australia and Finland where maternity leave and training policies are more flexible than the U.S, no significant differences were found between health workers and the general population with respect to pregnancy complications (Evans, 1995; Heinonen, 2002).

Culture and Class Issues

Traditionally, the medical profession in the U.S. and Canada has been dominated by white, upper class men (Hacker, 2001). This trend is changing and women, as well as underrepresented minorities, are now well represented in medical schools (Cole-Kelly, 1994; Shervington, 1996; Azarmina, 2002). Despite the recent changes in enrollment, women, minority groups, and gay and lesbian students still experience or perceive discrimination (Shervington, 1996; Zambrana, 1996; Risdon, 2000).

The situation may be especially difficult for women who come from a minority class or culture In a qualitative study by Shervington et al (1996), African American women medical students, attending southern medical schools in the U.S., indicated that they felt isolated and alienated in a predominantly white medical establishment, and that they were under a great deal of pressure to succeed, as they were not only representing their ethnic group, but also their gender. A study looking at women Hispanic Americans and their representation in the medical profession found that their representation in medical schools increased by 25% from 1990 to 1993, and yet Hispanic women only constitute approximately 2% of women medical professionals. These Hispanic women are concentrated in allied health service occupations, including dental assistants, physician assistants and licensed practical nurses, as opposed to the higher status occupations of medicine and dentistry (Zambrana, 1996).

In order to increase the diversity of the medical profession, affirmative action policies have been implemented in many medical schools in the United States (Deville, 1999; Choi, 2000; Magnus, 2000). Some believe that by lowering the academic standards of acceptance for people with minority status, the quality of physicians will be diminished (Deville, 1999; Choi, 2000; Magnus, 2000). However, there is limited correlation between GPA and MCAT scores, and physician success in training (Ferguson, 2002). In fact, it is thought that these tests only predict scholarly ability and not affective skills or emotional intelligence. In addition, the bar has risen for test scores in recent decades in order to filter the increasing numbers of applicants, rather than to predict success in medical training (Choi, 2000). Nevertheless these do remain the 'gold standard' for acceptance into medical school. Although GPA and MCAT scores are sometimes lower among ethnic minority students, these students with sub-optimal academic scores successfully complete their medical training and licensure as often as non-minority students with higher academic performance (Davidson, 1997). Proponents of affirmative action note that finding such as these support diversity in the profession however, a recent systematic review has concluded that there is little research into how ethnicity affects success in medical training (Ferguson, 2002).

Regardless of opinion regarding affirmative action policies, the literature indicates majority agreement with the benefits of diversity within medicine (Cole-Kelly, 1994; Choi, 2000; Magnus, 2000). Research has shown that ethnic minority students are more likely to serve poor and ethnic minority communities, an area that is currently drastically under-served (Deville, 1999; Choi, 2000; Magnus, 2000). Several strategies to aid in their integration into the medical community have been documented. These include increasing the availability and quality of math and science education for minority girls at elementary and secondary school levels, and creating outreach programs for parents and community (Zambrana, 1996). Cole-Kelly (1994) examined

strategies already implemented in some U.S. medical schools, such as open discussions regarding individual heritage, medical hierarchies, and personal values. These methods were found to allow residents to integrate into a foreign system while still maintaining their dignity and confidence, as well as minimizing frustration and power struggles between various cultural groups.

Although cultural differences do not inhibit women from passing their exams and becoming practicing physicians, there are some cultural differences that can affect medical practice and training. In the United Arab Emirates University, approximately half the students (mostly the women) did not like to be examined by peers, and believed that patients should not be used for learning. The majority of women senior clerks and interns in this study were not comfortable exposing any part of the body to their peers for the purpose of teaching clinical skills (Das, 1998). This discomfort is likely present in many countries including those in North America. Through open discussion with medical trainers from various countries, the concern has been raised that cultural restrictions may not support un-chaperoned exposure to patients. This is an issue that may require further thought and investigation.

Cultural and religious practices influence the type and methods of training for women physicians in some parts of the world. For example, in Iran since the 1980's an increasing number of women have been admitted to medical school, but to conform to religious rules that prohibit certain examinations of women by men physicians, women have been forced into certain specialties such as obstetrics and gynecology, to the exclusion of men physicians (Azarmini, 2002).

Conclusions

Women are achieving numerical parity with men in medical school and may become the majority of trainees in primary care fields. Nevertheless, women in training still face bias, harassment, disproportionately large household and family responsibilities, unfavorable maternity leave policies, and culture and class discrimination above and beyond the experiences of men. In specific geographic and cultural settings in various countries and regions, women have unique needs that are not adequately addressed in medical school or residency training programs.

Abstracts and Summaries: Women Physicians in Training

Azarmina P. In Iran, gender segregation becoming a fact of medical life. CMAJ 2002;166(5):645.
A prime objective of Iran's Islamic revolution in 1979, which ended the trend toward secularization, was to separate men and women in almost every aspect of their lives and to minimize physical contact. In 1980 Ayatollah Khomeini (supreme leader, Imam, of Iran) stopped males from entering gynecology as their examination of women violated religious rules. Female only hospitals were introduced (men cannot even enter). Iran will be training thousands of new female doctors over the next 2 decades (10 yrs ago, only 12.5% med stud were Women, now 1/3 of 22326 students at 38 med schools are women). All residency positions in ob/gyn are reserved for women, as well as half internal medicine, general surgery and cardiology and ¼ of orthopedic surgery, urology, neurosurgery, ophthalmology and psychiatry. New system raises difficult issues ie. male students don't have sufficient ob/gyn training, females being deprived experience on male wards, taking away patients right to choose which sex of doctor.

Basco WT Jr, Buchbinder SB, Duggan AK, Wilson MH. Relationship between primary care practices in medical school admission and the matriculation of underrepresented-minority and female applicants. Acad Med 1999 Aug;74(8):920-4.
PURPOSE: To determine whether primary care-oriented (generalist) admission practices at U.S. medical schools address physician workforce diversity issues by resulting in the admission of more members of underrepresented-minority populations or more women. METHOD: The authors performed cross-sectional, secondary analyses of databases from the Association of American Medical Colleges (AAMC). The independent variables were four generalist admission practices: generalist admission committee chair, greater representation of generalists on admission committee, offering preferential admission to likely generalists, and having a premedical recruitment activity targeting likely generalists. The control variable was public/private school ownership. The dependent variables were the mean ages of the matriculating classes and the proportions of students at each school who were African American, (total) underrepresented minorities, women, and married. RESULTS: Ninety-five percent of medical schools completed the AAMC's Survey of Generalist Physician Initiatives in either 1993 and 1994; 94% of matriculants replied to the AAMC's 1994 Matriculating Student Questionnaire. In multivariable analyses, no admission practice was associated with percentages of African Americans, total underrepresented minorities, or women. CONCLUSIONS: Schools with primary care-oriented admission practices did not admit greater percentages of underrepresented-minority students or women. Additional efforts may be required to attract and admit minority and female applicants.

Bickel J, Ruffin A. Gender-associated differences in matriculating and graduating medical students. Acad Med 1995 Jun;70(6):552-9.
Data from the 1993 Matriculating Student Questionnaire (MSQ) and the 1994 Medical School Graduation Questionnaire (GQ) of the Association of American Medical Colleges were investigated for differences in responses between men and women. Notable differences were discovered, particularly with regard to career plans and experiences during medical school. Findings from the GQ include that a higher proportion of women rated curricular coverage of numerous subjects inadequate and that women students more frequently reported mistreatment

during medical school. Women were also more likely than men to work in clinics serving the indigent and to complete a primary care clerkship. Over 30% of the 1994 women seniors, compared with 18% of the men, planned to pursue generalist careers. Interestingly, only 8% of female students expressed interest in pediatrics upon matriculation, whereas 1/3 of them ending up in this specialty area. The authors discuss the gender-associated differences, with reference to previous studies, and conclude that medical educators should ensure that women have access to the same skill-development opportunities that men do and to a humane learning environment. Moreover, educators should examine what adaptations can encourage students of both genders to develop an ethic of "social responsibility."

Bickel J. Gender equity in undergraduate medical education: a status report. J Women's Health Gend Based Med 2001 Apr;10(3):261-70.
This status report summarizes recent data on and studies of women's experiences as medical students. Women medical students in the United States now number over 29,000--44% of enrollees. Despite large increases in the numbers of women students, harassment and gender stereotyping continue to detract from their education and opportunities. An analysis of peer reviewed scores for post doctoral fellowship applications revealed that women applicants had to be 2.5 times more productive than the average male to receive the same competence score. Moreover, specialty choices have remained remarkably stable, with comparatively few women entering surgery and most subspecialties. Sexual harassment and mistreatment is more prevalent in women than men and female role models and mentors are lacking. Because equal opportunity has not yet been achieved, medical schools need to monitor the experiences of their trainees and to target interventions where problems still exist in order to ensure that progress toward gender equity continues.

Bowman MA, Haynes RA, Rivo ML, Killian CD, Davis PH.Characteristics of medical students by level of interest in family practice. Fam Med 1996;28(10):713-9.
BACKGROUND AND OBJECTIVES: This study provides information on student factors associated with a career choice in family practice. METHODS: Information was used from multiple surveys completed by medical students, including the Premedical Questionnaire, the Matriculating Student Questionnaire, and the Graduation Questionnaire, as well as information from residency directors about residents in the Graduate Medical Education Tracking Census. These questionnaires are all a part of the Student and Applicant Information Management System of the Association of American Medical Colleges. Participants were 30,789 students graduating from US medical schools in 1991 and 1992. Comparisons were made between longitudinal student responses on the surveys to four types of outcomes. RESULTS: A total of 1,029 (3.3%) students were in the "Maintained" group (students who originally planned to enter family practice and were in a family practice residency at postgraduate year 1; 1,958 (6.4%) were "Gained" (originally chose a specialty other than family practice but entered a family practice residency); 1,950 (6.3%) were "Lost Interest" (originally identified family practice but entered another residency-two thirds of whom selected non-primary care specialties); 21,573 (70.1%) were "Never Interested" (did not express an early interest nor select a family practice residency); and the remainder (13.9%) had incomplete specialty data. Of those originally interested in family practice, 34.5% entered family practice residencies. Only 8.3% of those not originally interested entered family practice residencies. The four groups of students differed on many

demographic, attitudinal, and experiential characteristics. Prestige, income, opportunities for research, and faculty status were more important to future specialists, while emphasis on primary care and prevention and practice in smaller communities were more important to the future family physicians. CONCLUSIONS: Medical schools could potentially increase the number of students selecting family practice residencies through both admissions policies and medical school experiences. These data provide some specifics on how to recruit students and prevent loss of those originally interested in family practice.

Canadian Paediatric Society Clinical Practice Guideline. Paediatric residency programs: Guidelines for short term leaves (minimum standards). Paediatr Child Health 1998;3(6):423-424.
Addresses the fact that scheduling in residency programs does not take into account the possibility of unavoidable short term leaves, due to pregnancy, short term disability or other reasons. This creates considerable disruption in an already highly stressful situation. The Residents Section of the Canadian Paediatric Society has gathered information from across the nation on program policies and has found that Paediatric programs across Canada vary considerably in the amount of leave granted. The article summarizes the first national guidelines for paediatric residents on short term leaves of absence.

Choi LW. Affirmative Action in Medical School Admission: Minority Underrepresentation in Medicine. Pharos Alpha Omega Alpha Honor Med Soc 2000 Autumn;63(4):4-8.
This paper is an essay written by a medical student. It won first prize in the 2000 Alpha Omega Alpha Student Essay Competition.
Medical Education, although a fast paced field of higher education, has been relatively slow in adapting to our multicultural society. Diversity is seen as a valuable asset in the medical profession, although there has been limited agreement in how to develop programs to achieve it. The paper discusses the case of regents of the University of California vs Bakke, where Allan Bakke sued the University because he believed it was unfair that less qualified students were being granted admission to medical school because of their minority status. It goes on to discuss how the fierce competition to get into medical school is not representative of too many doctors, but of too many of one kind of doctor. Metropolitan centers are overwhelmed with physicians, whereas urban and rural poor areas are desperately deficient. The literature reviewed indicates that the most reliable factor contributing to a true commitment to serving the medically indigent appears to be race, and not socioeconomic status. Critics of affirmative action argue that it produces sub-standard doctors, but the author counters that it simply provides minorities with the opportunity to be trained and prepared to be physicians.

Cole-Kelly K. Cultures engaging cultures: international medical graduates training in the United States. Fam Med 1994 Nov-Dec;26(10):618-24.
International medical graduates (IMGs) represent an increasing proportion of residents in all US residency training programs. Family practice residencies have experienced significant increases in IMG enrollment in the last 3 years. Residency programs in family practice need to make curricular adjustments to enhance the transition for IMGs. Adjusting the psychosocial curriculum, through changes in orientation, behavioral conferences, and family consultations, contributes to a culture-centered approach to teaching both IMGs and US medical graduates. Faculty need to identify both personal loss and cultural issues for IMGs in various stages of the

resident's life cycle. Lifestyle changes and loss of self-esteem, country, and accessibility to family can be demoralizing for IMGs coping with the demands of internship. Specific stages of the family life cycle can exert additional stresses for IMGs and their families. Understanding the specific challenges for IMGs during each life cycle stage can be instructive and helpful. Faculty can introduce initiatives that encourage cultural pride and respect. Support groups, international meals, cultural retreats, adjusted advising systems, and ongoing faculty reflection on treatment of IMGs demonstrates residency appreciation of diversity and leads to a healthier, culturally rich learning environment for all involved in residency education.

Cujec B, Oancia T, Bohm C, Johnson D. Career and parenting satisfaction among medical students, residents and physician teachers at a Canadian medical school. CMAJ 2000 Mar 7;162(5):637-40.

BACKGROUND: Studies of career and parenting satisfaction have focused separately on medical students, residents and practising physicians. The objective of this study was to compare satisfaction across a spectrum of stages of medical career. METHODS: A survey of incoming medical students, current medical students, residents and physician teachers at the University of Saskatchewan was conducted in the spring of 1997. Response rates were 77% (43/56), 81% (177/218), 65% (134/206) and 39% (215/554) respectively. Factors assessed in the stepwise regression analysis were the effect of sex, parenting and level of training on the likelihood of recommending parenting to medical students or residents, and on parenting dissatisfaction, job dissatisfaction, career dissatisfaction and the importance of flexibility within the college program to accommodate family obligations. RESULTS: More male than female physician teachers had partners (92% v. 81%, $p < 0.01$) and were parents (94% v. 72%, $p < 0.01$). Female physician teachers spent equal hours per week at work compared with their male counterparts (mean 52 and 58 hours respectively) and more than double the weekly time on family and household work (36 v. 14 hours, $p < 0.01$). Physician teachers were the most likely respondents to recommend parenting to residents and their peers. Residents were the most dissatisfied with their parenting time. At all career stages women were less likely than men to recommend parenting, were more dissatisfied with the amount of time spent as parents and were more likely to regard flexibility within the college program as beneficial. There were no sex-related differences in job dissatisfaction and career dissatisfaction. However, married women were more dissatisfied with their jobs than were married men. Job dissatisfaction was greatest among medical students, and career dissatisfaction was greatest among residents. INTERPRETATION: The optimal timing of parenthood appears to be upon completion of medical training. Women were less likely to recommend parenting, less satisfied with the time available for parenting and more likely to value flexibility within the college program to accommodate family needs. These differences did not translate into women experiencing more job or career dissatisfaction.

Finch, SJ. Pregnancy during Residency: A Literature Review. Acad Med 2003;78(4):418-28.

Purpose: It is estimated that by 2010 30% of U.S. physicians will be women. Pregnancy during residency can and does happen in all programs, and continues to provide problems for many. The author reviews the issues surrounding pregnancy during residency by evaluating published commentaries and research reports. Method: A literature search was conducted using Medline (January 1984-October 2001). Published articles were categorized as research or commentary. Research reports were sorted by content and summarized under three headings: mother

and infant health, sources of stress and support for the pregnant resident, and reactions of colleagues to the pregnant resident. Results: A total of 27 research reports were located; two additional reports published before 1984 were added because they complemented included studies. The majority of the studies in this review used retrospective self-report questionnaires, mostly completed by female residents and physicians. All reports suggested an increased risk of complications, especially adverse late-pregnancy events, for pregnant physicians. Pregnant residents found the physical demands of residency and lack of support from fellow residents and their departments most stressful. Anger and resentment toward the pregnant resident were common among not-pregnant residents, feelings particularly associated with expectations of increased workload. Individual maternity/parental leave policies were inconsistent. Policy development is discussed. Conclusions: The studies in this review supported planning for residents' pregnancies, and the author advocates clear maternity/parental leave policies. The author comments on the use of existing data to make common sense changes and on the need for further studies to help clarify the issues and evaluate program changes.

Fitzpatrick KM, Wright MP. Gender differences in medical school attrition rates, 1973-1992. J Am Med Women's Assoc 1995 Nov-Dec;50(6):204-6.
Retention is a critical problem in medical school education. We report here on research that examined gender differences in attrition rates between 1973 and 1992. Using secondary data compiled from the annual reports on undergraduate education published in JAMA, both descriptive and inferential analyses of medical school attrition rates were conducted. Data show that medical school attrition rates have steadily increased across the country since 1973 and that women drop out of medical school at consistently greater rates than men. These results highlight the importance of future analyses that attempt to delineate the causes as well as the consequences of dropping out of medical school for women and the institutions that support them.

Gjerberg E. Gender similarities in doctors' preferences--and gender differences in final specialisation. Soc Sci Med 2002 Feb;54(4):591-605.
This article is based on a career history study of gender differences and similarities in recruitment to and transitions between specialities among Norwegian doctors. A questionnaire on career and family history was sent to all Norwegian doctors authorised in 1980-1983. Descriptive statistics and logistic regression were used to describe and analyse completion of specialisation in the specialty in which they started their career. Survival analysis was used to analyse transitions between medical specialities. The findings clearly contradict the idea that the low proportion of women in male dominated areas of medicine reflects women's lack of interest in specialities like surgery and internal medicine. Women were as likely as men to start their career in these fields. The problem is their not completing specialist training. A far higher proportion of men than women completed their specialist training in surgery. The reasons for this are complex. Heavy work loads with duties and "nights on call" make it difficult for women to combine childcare and work and make them change to other specialities. Also, female specialists in surgery and internal medicine postpone having their first child compared to women in other medical specialities. However, the fact that some women change from surgery to gynaecology and obstetrics, a specialty which to a considerable extent are comparable with surgery with regard to duty and work loads, indicate that structural barriers in combining childcare and a hospital career do not

fully explain the flux of women. The possible existence of other closure mechanisms in surgery, as indicated by some doctors in this and in other studies, have to be further explored.

Grunebaum A, Minkoff H, Blake D. Pregnancy among obstetricians: a comparison of births before, during, and after residency. Am J Obstet Gynecol 1987 Jul;157(1):79-83.
Questionnaires were sent to 1025 female board-certified obstetricians, and information was retrieved about pregnancy outcome. A total of 454 pregnancies, one third of which occurred during residency, were evaluated, and the relationship between pregnancy outcome and residency was assessed. Children of primiparous women who were delivered during or after residency had significantly lower mean birth weights than those who were delivered before residency (p less than 0.001 and p less than 0.005, respectively), whereas birth weights of infants born to multiparous women were not significantly different. The low birth weight rate (less than 2500 gm) was significantly increased during residency (p less than 0.002), and infants born during residency were 7.5 times more likely to be growth retarded than those born outside residency (p less than 0.002). The incidence of other pregnancy complications was not found to be increased during residency. Our data suggest a potentially negative impact of residency on the birth weights of infants born to female obstetricians in training.

Hacker C. The Indomitable Lady Doctors. Formac Publishing Company Limited, Halifax, Nova Scotia. 2001.
Meet a dozen fascinating women, pioneers in the medical world, adventurers who went west with the homesteaders, missionaries who went to Tibet, China and India, scholars the academic community had to recognize. The medical establishment in Canada didn't accept these women doctors easily, and their battles for admittance into this profession are revealing.

Hammarstrom A. The integration of gender in medical research and education—Obstacles and possibilities from a Nordic perspective. Women Health 2003;37:4:121-33.
Research on women's issues in medicine was developed in the Nordic countries from the beginning of the 1980s. The theoretical developments led to a change of concepts from women's health to gender research, within which the structurally organised relations between men and women are analysed. Over the last decades, gender research has slowly been established in medical faculties, as a result of a strong political commitment for increased research and integration of gender issues in the university curriculum in Sweden. The government has made substantial investments in order to stimulate gender research and education in different disciplines, with special focus on medicine. Academic medicine has responded to this development with different strategies, including resistance and redefining concepts. Gender research has slowly become integrated into both research and teaching within Nordic academic medicine, although the pathway has not been easy. Gender research has had political support but there is a risk of backlash. Medical students' reactions to gender education can be compared with academic medicine's reactions towards gender research. Obstacles and possibilities are described in relation to teaching gender in schools of medicine. Most important is to recognise the risks for increased gender stereotypes and increased essentialism among the students, unless gender is taught from a theoretical perspective.

Harari E. The doctor's troubled marriage. Aust Fam Physician 1998 Nov;27(11):999-1004.
BACKGROUND: Reports about the health of doctors have included claims of an increased risk of unhappy marital and family relationships. Recent studies cast doubt on these pessimistic conclusions but certain patterns of troubled marriages seem to exist, as do certain stressors, to which doctors may be particularly susceptible. Especially for doctor doctor marriages, in which half of female physicians participate. OBJECTIVE: To describe the individual and interpersonal dynamics of problematic marriages commonly encountered among medical practitioners and to review some common stressors in medical marriages in general. DISCUSSION: Three commonly encountered patterns of troubled marriages are described and the ways they develop in the context of medical training and practice. The large increase in the number of women doctors in the past 20 years has brought new challenges to women and men seeking to balance their family and professional commitments. Often physicians marry to cope with the heavy burdens of medical school, but then once they graduate, they no longer share any common ground. Female physicians in dual physician marriages are also more likely to work part-time or choose a generalist career.

Heinonen S, Saarikoski S. Reproductive risk factors, pregnancy characteristics and obstetric outcome in female doctors. BJOG 2002 Mar;109(3):261-4.
OBJECTIVES: To compare maternal risk factors, pregnancy characteristics and outcome in female doctors, teachers, and the general obstetric population. DESIGN: We analysed obstetric outcomes among 331 female doctors and 656 teachers with singleton pregnancies who gave birth at Kuopio University Hospital from March 1989 to December 2000. The general obstetric population (n = 21,997) was selected as the reference group and logistic regression analysis was used to assess pregnancy outcomes in each group separately. RESULTS: Reproductive risk factors among female doctors and teachers were similar to those in the general obstetric population with the exception of advanced maternal age, number of previous terminations, marital status, maternal smoking, obesity, infertility treatment and pre-eclampsia. Interestingly, the number of operative deliveries did not vary between the groups. Pregnancy outcome among doctors and teachers was comparable with that in the general population. CONCLUSIONS: Although doctors and teachers appear to represent a group of health-conscious women, obstetricians do not vary their management of pregnant doctors and teachers during pregnancy and labour.

Incitti F, Rourke J, Rourke LL, Kennard M. Rural Women Family Physicians. Are they Unique? Can Fam Physician 2003 Mar;49:320-7.
OBJECTIVE: To compare the scope of practice and degree of personal and professional satisfaction of rural women family physicians with their rural male, urban female, and urban male counterparts. DESIGN: Cross-sectional mailed survey. SETTING: Rural and urban Ontario family practices. PARTICIPANTS: A total of 442 rural and urban family physicians. MAIN OUTCOME MEASURES: Personal and professional characteristics, scope of practice, and degree of personal and professional satisfaction. RESULTS: Rural women family physicians' scope of practice is as broad as that of rural men, and the women are more likely to attend births. They work many more hours on average than their urban counterparts. Rural women incorporate more professional activities into their practices than both male and female urban family physicians do, but they are less satisfied, both personally and professionally. CONCLUSION: Rural family practice provides a broad scope of practice for both women and men, but initiatives

are needed to make rural practice more professionally and personally satisfying for both women and men.

Jacobs CD, Bergen MR, Korn D.Impact of a program to diminish gender insensitivity and sexual harassment at a medical school. Acad Med 2000 May;75(5):464-9.
PURPOSE: To measure the effect of an intervention to reduce gender insensitivity and sexual harassment at one medical school. METHOD: Stanford University School of Medicine undertook a multifaceted program to educate faculty and students regarding gender issues and to diminish sexual harassment. The authors developed a survey instrument to assess the faculty's perceptions regarding environment (five scales) and incidences of sexual harassment. Faculty were surveyed twice during the interventions (1994 and 1995). RESULTS: Between the two years, the authors measured significant improvements in mean ratings for positive climate (p = .004) and cohesion (p = .006) and decreases in the faculty's perceptions of sexual harassment (p = 0006), gender insensitivity (p = .001), and gender discrimination (p = .004). The faculty also reported fewer observations of harassing behavior during the study period. There were distinct differences between male and females in the incidence of sexual harassment that takes place in medical school. Ninety two percent and 71% of women observed sexually harassing behaviour in 1994 and 1995 respectively, whereas only 53% and 41% of men reported observing sexually harassing behaviour in the same years. CONCLUSIONS: An intervention program to diminish gender insensitivity and sexual harassment can measurably improve a medical school's environment.

Komaromy M, Bindman AB, Haber RJ, Sande MA. Sexual harassment in medical training. New England Journal of Medicine. 1993;328(5):322-6.
BACKGROUND. Sexual harassment has become a national concern and one that is increasingly recognized in the field of medicine. Although there are reports of the sexual harassment of medical trainees, there is little information on the prevalence of this problem and whether it is adequately addressed by training institutions. METHODS. Surveys with descriptions and examples of sexual harassment were mailed to 133 internal medicine residents in a university training program. The residents were asked to report anonymously whether they had encountered sexual harassment during medical school or residency, the frequency and type of harassment, its effect on them, whether they chose to report it to a person in authority, and the factors that influenced this decision. RESULTS. Surveys were returned by 82 residents (response rate, 62 percent), 33 women and 49 men. Twenty-four women (73 percent) and 11 men (22 percent) reported that they had been sexually harassed at least once during their training. The women were more likely than the men to have been physically harassed, and the women's harassers were of higher professional status. Among those harassed, 19 of the women (79 percent) and 5 of the men (45 percent) thought that the experience created a hostile environment or interfered with their performance at work, but only 2 women and no men reported their experiences to an authority. The women cited a lack of confidence that they would be helped as the main reason for not reporting the experience, whereas men most commonly said that they had dealt with the problem without the need for outside assistance. CONCLUSIONS. Many medical trainees encounter what they believe to be sexual harassment during medical school or residency, and this often creates a hostile learning and work environment. Training institutions need to address the adverse effects this may have on medical education and patient care.

Klebanoff MA. Shiono PH. Rhoads GG. Outcomes of pregnancy in a national sample of resident physicians. New England Journal of Medicine 1990;323(15):1040-5.
BACKGROUND. Physically demanding, highly stressful work during pregnancy has been reported to cause a variety of adverse outcomes. It has been difficult, however, to separate the effects of work from those of socioeconomic status. METHODS. By means of a national questionnaire-based survey, we studied the outcomes of pregnancy during residency for 4412 women who graduated from medical school in 1985 and for the wives of 4236 of their male classmates, who served as controls. RESULTS. The rate of response to our survey was 87 percent (4412 of 5079) for the women residents and 85 percent (4236 of 4968) for the wives of the male residents. There were no significant differences in the proportion of pregnancies ending in miscarriage (13.8 percent for residents vs. 11.8 percent for their classmates' wives, P = 0.12), ectopic gestations (0.5 percent vs. 0.8 percent, P = 0.69), and stillbirths (0.2 percent vs. 0.5 percent, P = 0.20). There were 989 women residents and 1238 residents' wives whose first pregnancy during residency resulted in the live birth of a singleton infant. Although during each trimester the women residents worked many more hours than the wives of the male residents, the frequency of preterm births (less than 37 weeks' gestation) was similar: 6.5 percent for residents and 6.0 percent for residents' wives (odds ratio = 1.1; 95 percent confidence interval, 0.7 to 1.5). Infants who were small for gestational age (with birth weights less than the 10th percentile for gestational age) were born to 5.3 percent of the residents and 5.8 percent of the residents' wives (odds ratio = 0.9; 95 percent confidence interval, 0.6 to 1.3). Adjustment for factors that differed between the women residents and the wives of male residents resulted in odds ratios of 1.2 (95 percent confidence interval, 0.8 to 1.7) for preterm delivery and 0.9 (95 percent confidence interval, 0.6 to 1.3) for the delivery of an infant who was small for gestational age. However, the women residents more frequently reported having had preterm labor (11 percent vs. 6 percent), but not preterm delivery (6.5 percent vs. 6.0 percent); preeclampsia was also more common among the women residents (8.8 percent vs. 3.5 percent). CONCLUSIONS. These results suggest that working long hours in a stressful occupation has little effect on the outcome of pregnancy in an otherwise healthy population of high socioeconomic status.

Klebanoff MA, Shiono PH, Rhoads GG. Spontaneous and induced abortion among resident physicians. JAMA 1999;265(21):2821-5.
Female resident physicians are believed to be at an increased risk for a variety of third-trimester pregnancy complications. However, early pregnancy complications have been less well studied. This report compares spontaneous and induced abortions in a nationally representative sample of 5096 female medical school graduates (who experienced 1284 pregnancies) and of the sexual partners of 5000 of their male classmates (who experienced 1481 pregnancies). The response to the survey was 86.1%. The life-table probability of spontaneous abortion was 14.8% for female residents compared with 12.6% for the sexual partners of male residents. However, female residents were more likely than the male residents' sexual partners to terminate a pregnancy voluntarily (8.2% vs 2.7%). The increased risk of voluntary termination persisted when only married women were studied (3.6% vs 1.4%). However, female residents' pregnancies were at approximately half the risk of voluntary termination compared with pregnancies among the general US population of women aged 25 to 34 years. These results provide reassurance to those residents who would like to become pregnant but are concerned about the possible effect of their occupation on the course of the pregnancy.

Larsson C, Hensing G, Allebeck P. Sexual and gender-related harassment in medical education and research training: results from a Swedish survey. Medical Education. 2003;37(1):39-50.

OBJECTIVE: The aims of this study were to establish the level of perceived sexual and gender-related harassment in undergraduate and doctoral studies, in which environment the events occurred, which categories of persons had committed the harassment, and other aspects of sexual harassment at the Faculty of Medicine, Gothenburg University. METHODS: A questionnaire was distributed to all registered male and female undergraduate students (n= 605) and doctoral students (n=743) by mail to their home addresses. RESULTS: The response rate was 62% (840/1348). Of the total study population, 59% (495/840) of respondents reported at least one experience of derogatory jokes and comments, 54% (454/840) of respondents reported at least one experience of gender-related discrimination, and 22% (187/840) of respondents reported at least one incident of sexual harassment. More severe types of sexual harassment were reported by 9% (79/840) of respondents. Women, and especially undergraduate women, were more often exposed to all kinds of harassment than were men. Lecturers/professors, doctors and co-students were the categories most often identified as the harassers. The harassment mostly occurred during lectures, clinical work and coffee breaks. The most common types of self-perceived mistreatment were derogatory jokes and comments. CONCLUSION: This survey shows that sexual harassment happens to both men and women, although it is more commonly experienced by female undergraduate and doctoral students, and that it occurs in both the university and hospital environments. Universities should develop action plans to prevent such events. Students and teachers should be well informed about appropriate measures to take in situations where harassment is known or suspected to occur.

Linzer M, Slavin T, Mutha S, Takayama JI, Branda L, VanEyck S, McMurrayJE, Rabinowitz HK. Admission, recruitment, and retention: finding and keeping the generalist-oriented student. SGIM Task Force on Career Choice in Primary Care and Internal Medicine. J Gen Intern Med 1994 Apr;9(4 Suppl 1):S14-23.

As the country strives to produce larger numbers of generalist physicians, considerable controversy has arisen over whether or not generalist applicants can be identified, recruited, and influenced to keep a generalist-oriented commitment throughout medical training. The authors present new and existing data to show that: 1) preadmission (BA/MD or post-baccalaureate) programs can help to identify generalist-oriented students; 2) characteristics determined at admission to medical school are predictive of future generalist career choice; 3) current inpatient-oriented training programs strongly push students away from a primary care career and mentors are among the most important factors influencing career selection, especially for women and minority students; 4) women are more likely than men to choose generalist careers, primarily because of those careers' interpersonal orientation; and 5) residency training programs are able to select applicants likely to become generalists. Therefore, to produce more generalists, attempts should be made to encourage generalist-oriented students to enter medical schools and to revise curricula to focus on outpatient settings in which students can establish effective and satisfying relationships with patients. These strategies are most likely to be successful if enacted within the context of governmental and medical school-based changes that allow for more reimbursement and respect for the generalist disciplines.

Lynch DC, Newton DA, Grayson MS, Whitley TW. Influence of medical school on medical students' opinions about primary care practice. Acad Med 1998 Apr;73(4):433-5.
PURPOSE: To compare first- and fourth-year medical students' opinions about primary care practice. METHOD: A cross-sectional survey was made of medical students at New York Medical College (NYMC) and East Carolina University School of Medicine (ECUSOM) over three years (1993-94, 1994-95, and 1995-96). Three consecutive classes of first-year students from both schools (n = 807), two consecutive classes of fourth-year NYMC students (n = 373), and three consecutive classes of fourth-year ECUSOM students (n = 221) were given a self-administered questionnaire about professional aspects of primary care practice. Responses to ten items about primary care practice were the independent variables in a logistic regression analysis. Career choice, categorized as primary care or non-primary care, was the dependent variable. Independent, two-tailed t-tests were employed to compare the responses of the first-year students interested in primary care careers with those of the fourth-year students interested in primary care careers. RESULTS: In all, 639 (79%) of the first-year students and 396 (67%) of the fourth-year students returned completed questionnaires. The first-year students interested in primary care careers were significantly more likely to believe that primary care practice has more prestige, has more intellectual stimulation, needs a large knowledge base, and involves work that is more important than that of non-primary care physicians, and were significantly more likely to disagree with the assertion that in primary care practice, physicians have more control over their working hours. With one exception (prestige of primary care practice), all these independent variables were significant for the fourth-year students as well. The comparison of the first- and fourth-year students indicated that the fourth-year students were significantly more likely to believe that primary care practice has more intellectual stimulation, needs a large knowledge base, and requires knowledge that non-primary care practice may not; they were also significantly more likely to disagree with the assertions that primary care practice is adequately compensated, has more prestige, and allows more control over working hours. CONCLUSION: It appears that students' positive perceptions about primary care practice may change as realistic perceptions about the professional demands on primary care physicians develop during medical school.

Magnus SA, Mick SS. Medical schools, affirmative action, and the neglected role of social class. Am J Public Health 2000 Aug;90(8):1197-201.
Most medical schools have implemented affirmative action policies to increase the diversity of medical professionals. Although diversity is considered beneficial, critics are worrying that by lowering the standards for minority students, we are lowering the quality of physician produced. Medical schools' affirmative action policies traditionally focus on race and give relatively little consideration to applicants' socioeconomic status or "social class." However, recent challenges to affirmative action have raised the prospect of using social class, instead of race, as the basis for preferential admissions decisions in an effort to maintain or increase student diversity. This article reviews the evidence for class-based affirmative action in medicine and concludes that it might be an effective supplement to, rather than a replacement for, race-based affirmative action. The authors consider the research literature on (1) medical students' socioeconomic background, (2) the impact of social class on medical treatment and physician-patient communication, and (3) correlations between physicians' socioeconomic origins and their service patterns to the disadvantaged. They also reference sociological literature on distinctions between race and class and Americans' discomfort with "social class."

Maingay J and Goldberg I. Flexible training opportunities in the European Union. Medical Education 1998;32(5):543-8.
This paper compares the opportunities for flexible (part-time) specialist training in the UK and elsewhere in the EU in the overall context of the rising numbers of women doctors across Europe. Few other EU countries appear to provide the same opportunities for flexible training as the UK, despite high percentages of women medical students and women medical graduates. There are important differences in training patterns across the EU and some reasons are proposed for why flexible training may be more difficult to implement or may not be required elsewhere in the EU. Reasons include less centralized health care systems and more rigidly structured training programmes. In the context of four main factors affecting medical manpower--medical unemployment, contracted working hours, maternity provisions and duration of training--both the health authorities' need to implement flexible training and the trainee doctors' demand for it would appear to be greater in the UK than in other EU countries.

McMurray JE, Angus G, Cohen M, Gavel P, Harding H, Horvath J, Paice E, Schmittdiel J, Grumback K. Women in medicine: a four nations comparison. JAMWA 2002:57(4);185-190.
OBJECTIVES: to determine the impact of increasing numbers of women in medicine on the physician work force in Australia, Canada, England, and the United States. METHODS: We collected data on physician work force issues from professional organizations and government agencies in each of the 4 nations. RESULTS: Women now make up nearly half of all medical students in all 4 countries and 20% to 30% of all practicing physicians. Most are concentrated in primary care specialties and obstetrics/gynecology and are underrepresented in surgical training programs. Women physicians practice largely in urban settings and work 7 to 11 fewer hours per week than men do, for lower pay. Twenty percent to 50% of women primary care physicians are in part-time practice. CONCLUSIONS: Work force planners should anticipate larger decreases in physician full-time equivalencies than previously expected because of the increased number of women in practice and their tendency to work fewer hours and to be in part-time practice, especially in primary care. Responses to these changes vary among the 4 countries. Canada has developed a detailed database of work/family issues; England has pioneered flexible training schemes and reentry training programs; and Australia has joined consumers, physicians, and educators in improving training opportunities and the work climate for women. Improved access to surgical and subspecialty fields, training and practice settings that provide balance for work/family issues, and improved recruitment and retention of women physicians in rural areas will increase the contributions of women physicians.

Mendelsohn KD, Nieman LZ, Isaacs K, Lee S, Levison SP. Sex and gender bias in anatomy and physical diagnosis text illustrations. JAMA 1994 Oct 26;272(16):1267-70.
OBJECTIVE--To examine the sex and gender distribution of illustrations in two atlases, five anatomy texts, and five physical diagnosis texts. DESIGN--Of 4060 illustrations that were identifiable by sex and gender in 12 commonly used anatomy and physical diagnosis textbooks, 3827 were categorized by two reviewers as female, male, or neutral. RESULTS--Females were represented, on average, in 21.2% of the anatomy text illustrations; males were represented, on average, in 44.3%; 34.4% of the illustrations were neutral. Of the nonreproductive anatomy illustrations, a mean of 11.1% (range, 4.6% to 23.8%) depicted women and 43.1% (range, 35.4% to 56.2%) depicted men. Of nonreproductive anatomy illustrations, a mean of 45.8% (range,

27.2% to 59.9%) were neutral. Overall, the physical diagnosis text illustrations demonstrated a more equal sex and gender distribution (21.5% female and 24.8% male). However, in the reproductive chapters of the physical diagnosis texts, females were depicted in a mean of 71.1% (range, 63.2% to 79.0%) of the illustrations, while in the nonreproductive chapters, females were depicted in 8.8% of total illustrations. CONCLUSIONS--In anatomy and physical diagnosis texts, women are underrepresented in illustrations of nonreproductive anatomy. The finding that males are depicted in a majority of nonreproductive anatomy illustrations may perpetuate the image of the male body as the normal or standard model for medical education.

Mitka M. What lures women physicians to practice medicine in rural areas? JAMA 2001;285:3078-9.
A survey of family physicians, general internists, pediatricians, and obstetrician-gynecologists was conducted from 1992-1999 in communities with fewer than 10,000 people to determine factors that influence women's decisions to practice rural medicine. It was found that factors important for women were employment opportunities for their spouse, flexibility of hours, child care, and concerns about isolation in rural practice.

Neumayer L, Kaiser S, Anderson K, Barney L, Curet M, Jacobs D, Lynch T, Gazak C.Perceptions of women medical students and their influence on career choice. Am J Surg 2002 Feb;183(2):146-50.
BACKGROUND: Although women make up nearly half of medical school classes in the United States, just over 20% of residents in surgery are women (excluding obstetrics/gynecology). The objective of this study was to identify whether the proportion of women surgeons on the faculty who have frequent encounters with medical students during their surgery rotation influences the student's perceptions about women surgeons or their career choice. METHODS: Seven US medical schools with proportions of women surgeons on the fulltime faculty varying from 10% to 40% were selected to participate in this survey. Women medical students graduating in the spring of 2000 were asked to complete an anonymous 29 question survey designed to assess their perceptions of women surgeons' career satisfaction. Demographic information about the students such as career choice, age, and marital status was also collected. The differences in responses between those schools with 40% women faculty and those with less than 15% were analyzed. RESULTS: The overall response rate was 74% (305 of 413). Forty-five percent of students had daily or weekly contact with a woman surgery attending. There were no differences in perceptions of women surgeons' career satisfaction for those students at schools with 40% women surgeons versus those with less than 15%. However, 21 of 24 (88%) students choosing surgery as a career were from the three schools with a greater number of women surgical role models ($P < 0.0001$). Students who chose a career in surgery perceived the women faculty's career satisfaction to be higher than did those students not choosing a surgical career ($P < 0.01$). CONCLUSIONS: Women medical students perception of women surgeons' career satisfaction did not appear to be affected by the proportion of women surgeons on the faculty at their medical school. However, their choice of surgery as a career was strongly associated with a higher proportion of women on the surgical faculty.

Nicholls S. Maternity Leave, the mother of all challenges for female MDs. The Medical Post: Features. p19, 21. Ontario, Canada. February 4, 2003.
Discusses the difficulties that arise when female residents and physicians become pregnant. Several case studies depicting the difficulties in finding a suitable locum and the financial loss that is incurred when one is not found. Only 5 provinces offer maternity benefits to fee-for-service physicians (Nova Scotia, Ontario, Manitoba, British Columbia offer to all and Quebec offers only to GPs). Physician shortage is making it very difficult to find coverage for absences. Discusses new trend of part time residency and the need for some compromise between career and family.

Notzer N, Brown S. The feminization of the medical profession in Israel. Med Educ 1995 Sep;29(5):377-81.
Two factors have caused major changes in the gender composition of the Israeli medical profession in recent years: (i) a wave of immigration from the former USSR, which increased the doctor population by approximately 70% and which included a majority of women physicians, and (ii) the entry of more Israeli women into medical school. This report presents the current gender status of the Israeli medical profession, regarding students and physicians, and the choice of medical specialty and academic seniority, and compares gender differences in Israel with those in other countries. Traditional patterns of specialization persist in Israel, with women still concentrated in primary care (family medicine, paediatrics and psychiatry). In addition, women still face obstacles in entering the more prestigious (mainly surgical) specialties. Whilst the number of women in academic medicine has increased over the last decade, representing 46% of medical graduates since 1989, women are still concentrated in the lowest echelons of academic medicine. However, the steady trend towards the feminization of medicine will inevitably lead to an increase of women in all areas of the medical profession. Because cross-cultural studies have repeatedly revealed that women doctors have a more humanistic and personalized approach to patient care, a higher ratio of women in the profession should have a qualitative effect in this direction, despite the bureaucratic and fiscal constraints incumbent upon practising doctors. As more women become role models for medical students, their approach will influence the education of the doctors of the future.

Ortayli N, Ozugurlu M, Gokcay G. Female health workers: an obstetric risk group. Int J Gynaecol Obstet 1996 Sep;54(3):263-70.
OBJECTIVE: The aim of the study was to gather information about the pregnancies of female health workers and to compare them with those of another group of working women with different working conditions, namely bank workers, METHODS: Using a cross-sectional comparative design, physicians (184), nurses (197) and bank-workers (192) were interviewed about their previous pregnancies and working conditions during those pregnancies. RESULTS: The majority of physicians (70.6%) and nurses (81.2%) had night work during their pregnancies and two-thirds of them continued this work until the last month of pregnancy, even though they have a legal right not to work during the night after the 7th month of pregnancy. Health workers had shorter maternity leaves than bank workers ($P < 0.001$) and complained more about the negative attitudes of managers and colleagues during their pregnancy ($P < 0.001$). Health workers had more preterm deliveries ($P < 0.05$) compared with bank workers, and nurses had more low birth weight babies compared with bank workers ($P < 0.05$). CONCLUSION: There

is a need for a change in the climate in hospitals in terms of the working conditions of pregnant health staff and the attitudes towards them.

Phelan ST. Sources of stress and support for the pregnant resident. Acad Med 1992 Jun;67(6):408-10.
In order to clarify the sources of stress and support for pregnant residents, in 1985 the author conducted a retrospective national survey of women obstetricians and gynecologists, surgeons, and psychiatrists. Questionnaires were mailed to 2,000 physicians; 1,197 responded; 373 (31%) had experienced pregnancy during residency. They indicated that major sources of stress included frequency of call, fatigue, long hours, and too little time with spouse or partner. Women medical staff were perceived as supportive, whereas male counterparts were felt to be neutral at best. Most residents had worked up to delivery or to scheduled maternity leave; only 19 had needed medical leave more than a month prior to due date. Maternity leave of less than six weeks was felt to be inadequate, especially for first-time mothers. The author makes recommendations to help minimize problems for pregnant residents and their programs.

Philibert I, Bickel J. Maternity and parental leave policies at COTH hospitals: an update. Council of Teaching Hospitals. Acad Med 1995 Nov;70(11):1056-8.
Because residents' demands for parental leave are increasing, and previous research indicates that the majority of female students give birth during residency, updated information about maternity and paternity leave policies was solicited from hospitals that are members of the Council of Teaching Hospitals (COTH) of the AAMC. A 20-item questionnaire, combining forced-choice categories and open-ended questions, was faxed to 405 COTH hospitals in October 1994; 45% responded. A total of 77% of the respondents reported having written policies for maternity and/or parental leave; in 1989, only 52% of COTH hospitals had reported having such policies. Forty-one percent of the 1994 responding hospitals offered dedicated paid maternity leave, with a mean of 42 days allowed. Twenty-five percent of the respondents offered paternity leave, and 15% offered adoption leave. It is encouraging that the majority of the teaching hospitals that responded to the survey had adopted written policies, but the 23% without written policies remain a source of concern. Well-defined policies for maternity, paternity, and adoption leave can reduce stress and foster equity both for trainees requiring leave and for their colleagues.

Phillips, S. The social context of women's health: Goals and objectives for medical education. CMAJ 1995;152(4):507-11.
The Women's Health Interschool Curriculum Committee of Ontario has developed goals and objectives for medical education based on a definition of women's health that includes emotional, social, cultural, spiritual and physical well-being. The author presents background information on how women have been treated as "other" and sex-role stereotypes have been reinforced by some of the assumptions, terminology and attitudes used in medical practice and research. The objectives address the biologic and social context of women's health, the effect of power differentials (particularly the imbalance in power between physicians and patients), sex-role stereotyping in medical practice and teaching, and the effect of individual physicians' attitudes toward women on the care they provide. These objectives are the first published effort to define what physicians should know about the social context of women's health. The committee encourages readers to debate, discuss and use these objectives.

Phillips, SP. Problem-based Learning in Medicine: New curriculum, old stereotypes. Soc Sci Med 1997;45(3):497-99.
Even within new PBL approaches to medical curricula, old stereotypes of men being "normal" and women being "other" are enforced. The majority of non-sex-specific problems are presented as male, and all sex-specific problems are presented as female. There is an emphasis on women's social environment and mental state to be the cause of women's health problems, suggesting that women present with vague symptoms masking their hysteria or depression.

Phillips, SP, Ferguson, KE. Do students' attitudes toward women change during medical school? CMAJ 1999;160(3):357-61.
BACKGROUND: Medical school has historically reinforced traditional views of women. This cohort study follows implementation of a revitalized curriculum and examines students' attitudes toward women on entry into an Ontario medical school, and 3 years later. METHODS: Of the 75 students entering first year at Queen's University medical school 70 completed the initial survey in September 1994 and 54 were resurveyed in May 1997. First-year students at 2 other Ontario medical schools were also surveyed in 1994, and these 166 respondents formed a comparison group. Changes in responses to statements about sex-role stereotypes, willingness to control decision-making of female patients, and conceptualization of women as "other" or "abnormal" because they are women were examined. Responses from the comparison group were used to indicate whether the Queen's group was representative. RESULTS: Attitudinal differences between the primary group and the comparison group were not significant. After 3 years of medical education students were somewhat less accepting of sex-role stereotypes and less controlling in the doctor-patient encounter. They continued, however, to equate adults with men and to see women as "not adult" or "other." Female students began and remained somewhat more open-minded in all areas studied. INTERPRETATION: A predicted trend toward conservatism was not seen as students became older, more aware and closer to completion of medical training, although they continued to equate adults with male and to see women as "other." Findings may validate new curricular approaches and increased attention to gender issues in the academic environment.

Phillips, SP. Parenting, puppies and practice: juggling and gender in medicine. CMAJ 2000;162(5):663-4.
Being married and having children are beneficial to men's careers but may result in dissatisfaction among female physicians. Family responsibilities may result in decreased work hours, slower advancement through academic medicine and guilt about increasing colleagues' workloads. Women historically have felt like it was impossible to be botha good mother and good doctor, and women physicians are less likely to have children than male physicians. The author calls for equal parenting responsibilties, 40-hour work weeks and workplace flexibility.

Phillips SP, Richardson B, Lent B. Medical Faculty's Views and Experiences of Parental Leave: A collaborative study by the Gender Issues Committee, Council of Ontario Faculties of Medicine J Am Med Women's Assoc 2000 Winter;55(1):23-6.
OBJECTIVES: To examine medical faculty's actual and ideal parental leave arrangements with the aim of informing policy decisions. Leave lengths, effect on career, financial arrangements, and availability of temporary replacements were explored. METHODS: All medical faculty (6387) in Ontario, Canada were surveyed by mail and asked about parental leave experiences since 1990.

Responses of men and women were compared as were those of leave takers and the entire group. RESULTS: Thirty-two percent (n = 996) of the 3107 respondents were women and 68% (n = 2067) were men. Ninety-eight percent (n = 317) of new mothers had taken maternity leave, while only 21% (n = 159) of new fathers had. Both paid and unpaid leave was generally shorter than that allowed by law or identified as ideal. Parental leave had a somewhat negative effect on the careers of all faculty. Women were more worried than men about the effect of their absence on colleagues' work and more generous with ideal leave length and funding. Temporary replacement of leave takers was central to an effective leave policy. CONCLUSIONS: Institutional and academic culture may cause new parents to take suboptimal leave despite legislation allowing more. A change in the work environment is required for medicine to offer its teachers what it teaches--that infants benefit from nurturing, nursing, and stability early in life.

Phillips, SP. Evaluating women's health and gender. Am J Obstet Gynecol 2002;187:S22-4.
Current medical education objectives rarely address the context of women's health and gender. Some educators may serendipitously focus on, for example, the effect of powerlessness or sex role stereotypes on health; however, more systematic teaching is needed. The adoption and evaluation of explicit learning objectives addressing behaviors and context by licensing bodies and medical schools will increase graduates' understanding of the determinants of women's health. We identify important educational objectives and evaluation techniques and strategies for their integration.

Pinhas-Hamiel O, Rotstein Z, Achiron A, Gabbay U, Achiron R, Barak Y, Israeli A, Noy S. Pregnancy during residency--an Israeli survey of women physicians. Health Care Women Int 1999 Jan-Feb;20(1):63-70.
The objective is to assess the impact of workload on pregnancy among women physicians in public hospitals in Israel. A self-administered, cross-sectional study of pregnancies among women physicians in public hospitals was conducted. An 82-item questionnaire was mailed to women physicians in the three largest university hospitals in Israel. The questionnaire assessed demographic data, pregnancy course, perceived stress, and complications during pregnancy. Response rate was 52% (207/400). The complication rates were compared with rates in the Jewish population and expressed as mean +/- SD. Mean number of pregnancies during residency was 1.3 +/- 1.2. Mean age at the first delivery was 27 +/- 3.2 years. There was a significant difference in the rates of stillbirth (32/1000 births versus 3.7/1000, $p < 0.001$) and premature delivery (12.4% versus 7.6%, $p = 0.0014$) between women physicians and the general population. There was no significant difference in the proportion of spontaneous abortions (12.7%), pregnancy induced hypertension (3.2%), hyperemesis gravidarum (3.2%), and diabetes (1%). Seven percent of women physicians changed their specialty due to pregnancy while in residency. Our results suggest that working long hours in a stressful occupation in a hospital environment has an adverse effect on pregnancy course and is associated with increased rates of stillbirth and premature delivery.

Reichenbach, L, Brown, H. Gender and academic medicine: impacts on the health workforce. BMJ 2004:329:792-5.
Summary: This article examines three sections of academic training that affect the health workforce: enrolment, curriculum and promotion. Women have almost achieved gender equality in the number of women enrolling in medical schools. Unfortunately, the medical profession may become less powerful and influential as it becomes increasingly feminized. In the curriculum, training materials in academic medicine endorse a patriarchal view that neglects

women's healthcare needs. In promotion, women advance more slowly than men, particularly in academic medicine, and there are far fewer women in leadership positions. Women also have fewer mentors and professional networks and less collegial support while in the academic medical system. A closer look at gender equity and the underlying injustices in the professional opportunity structure is required.

Risdon C, Cook D, Willms D. Gay and lesbian physicians in training: a qualitative study. CMAJ 2000 Feb 8;162(3):331-4.
BACKGROUND: Gay and lesbian physicians in training face considerable challenges as they become professionalized. Qualitative research is necessary to understand the social and cultural factors that influence their medical training. In this study we explored the significance of gay or lesbian identity on the experiences of medical training using naturalistic methods of inquiry. METHODS: Semi-structured interviews, focus groups and an e-mail listserv were used to explore professional and personal issues of importance to 29 gay and lesbian medical students and residents in 4 Canadian cities. Data, time, method and investigator triangulation were used to identify and corroborate emerging themes. The domains explored included career choice, "coming out," becoming a doctor, the environment and career implications. RESULTS: Gay or lesbian medical students and residents experienced significant challenges. For all participants, sexual orientation had an effect on their decisions to enter and remain in medicine. Once in training, the safety of a variety of learning environments was of paramount importance, and it affected subsequent decisions about identity disclosure, residency and career path. Respondents' assessment of professional and personal risk was influenced by the presence of identifiable supports, curricula inclusive of gay and lesbian sexuality and health issues and effective policies censuring discrimination based on sexual orientation. The need for training programs to be proactive in acknowledging and supporting diversity was identified. INTERPRETATION: Considerable energy and emotion are spent by gay and lesbian medical students and residents navigating training programs, which may be, at best, indifferent and, at worst, hostile.

Schafer S, Shore W, French L, Tovar J, Hughes S, Hearst N. Rejecting family practice: why medical students switch to other specialties. Fam Med 2000 May;32(5):320-5.
BACKGROUND AND OBJECTIVES: Medical schools have been encouraged to increase the number of primary care graduates. This study determined the proportion of medical students who change specialty preference during the clinical years and explored how ultimate choice is affected by perceptions of medical specialties acquired during this period. METHODS: A survey was mailed to 397 graduating medical students at the University of California, San Francisco (UCSF) after the National Resident Matching Program Match and before graduation in 1996, 1997, and 1998. RESULTS: The response rate was 81% (320/397). Of 41 respondents who reported that family practice had been their first specialty choice prior to beginning clinical rotations, only 15 (37%) eventually matched in family practice. Comparable numbers for internal medicine and pediatrics were 50% and 69%. Students rejecting family practice were more likely than their colleagues rejecting other specialties to cite insufficient prestige, low intellectual content, and concern about mastering too broad a content area as reasons. CONCLUSIONS: At UCSF, family practice retains fewer interested students than other primary care specialties. To reverse this trend, schools such as UCSF need to raise the prestige of family practice and counter concerns about its intellectual content being impossible to master.

Schiebinger L. Women's health and clinical trials. J Clin Invest 2003;112:973-7.
Women have traditionally been underrepresented in clinical trials. In order to translate recent advances in our understanding of the molecular and physiological bases of sex differences into new therapeutics and health practices, sound sex-specific clinical data are imperative. Since the founding of the Office of Research on Women's Health within the Office of the Director at the NIH in 1990, inequities in federally funded biomedical research, diagnosis, and treatment of diseases affecting women in the US have been reviewed. Discussed herein is the evolution of gender-related research innovations, primarily within the last decade, and strategies and challenges involved in the success of this recent development.

Shervington DO, Bland IJ, Myers A. Ethnicity, gender identity, stress, and coping among female African-American medical students. J Am Med Women's Assoc 1996 Aug-Oct;51(4):153-4.
This article summarizes a qualitative study of 20 African-American first and second year female medical students attending a Southern medical school. Focus group and questionnaire data was assessed. The majority of respondents reported pride in their ethnic group and all but one felt very positive about being women. When asked to compare their sense of racial identity to that of whites, they believed that whites felt superior, and at the same time both threatened and fearful. They also believed that whites had no sense of racial identity because they never thought of their color. Most of the respondents rated their stress level as average, but felt a lot of pressure not to fail, as to not only not reflect badly on blacks but also on women. All students still in the classroom felt that gender issues were overshadowed by the intensity of racism, but once the students enter clinical rotations, they were beginning to notice subtle gender issues.

Smith C, Boulger J, Beattie K. Exploring the dual-physician marriage. Minn Med 2002 Mar;85(3):39-43.
A substantial number of female physicians marry fellow doctors, yet little is known about these dual-physician couples. In an effort to identify these couples, surveys were sent to 1,695 female physician members of the Minnesota Medical Association. Women who were or had been married to a physician were asked to complete the survey. The majority of women responding (n = 203) were between the ages of 36 and 45 and had married during medical school. 11% had married before medical school, 45% married during medical school and 25% married in residency. Only a small percentage (11.3%) were divorced, and medicine was reported to play a role in 69.6% of those separations. Questions were asked regarding work and family life, and job satisfaction levels. Despite many positive responses to the questionnaire, some problems existed in these marriages. Overall, however, responses indicated that the advantages of being married to another physician for outweigh the disadvantages.

Sobecks NW, Justice AC, Hinze S, Chirayath HT, Lasek RJ, Chren MM, Aucott J, Juknialis B, Fortinsky R, Youngner S, Landefeld CS. When doctors marry doctors: a survey exploring the professional and family lives of young physicians. Ann Intern Med 1999 Feb 16;130(4 Pt 1):312-9.
BACKGROUND: Soon, half of all physicians may be married to other physicians (that is, in dual-doctor families). Little is known about how marriage to another physician affects physicians themselves. OBJECTIVE: To learn how physicians in dual-doctor families differ from other physicians in their professional and family lives and in their perceptions of career and family.

DESIGN: Cross-sectional survey. SETTING: Two medical schools in Ohio. PARTICIPANTS: A random sample of physicians from the classes of 1980 to 1990. MEASUREMENTS: Responses to a questionnaire on hours worked, income, number of children, child-rearing arrangements, and perceptions about work and family. RESULTS: Of 2000 eligible physicians, 1208 responded (752 men and 456 women). Twenty-two percent of male physicians and 44% of female physicians were married to physicians (P < 0.001). Men and women in dual-doctor families differed (P < 0.001) from other married physicians in key aspects of their professional and family lives: They earned less money, less often felt that their career took precedence over their spouse's career, and more often played a major role in child-rearing. These differences were greater for female physicians than for male physicians. Men and women in dual-doctor families were similar to other physicians in the frequency with which they achieved career goals and goals for their children and with which they felt conflict between professional and family roles. Marriage to another physician had distinct benefits (P < 0.001) for both men and women, including more frequent enjoyment from shared work interests and higher family incomes. CONCLUSIONS: Men and women in dual-doctor families differed from other physicians in many aspects of their professional and family lives, but they achieved their career and family goals as frequently. These differences reflect personal choices that will increasingly affect the profession as more physicians marry physicians.

Stratton, TD, McLaughlin, MA, Witte, FM, Fosson, SE, Nora LM. Does Students' Exposure to Gender Discrimination and Sexual Harassment in Medical School Affect Specialty Choice and Residency Program Selection? Acad Med 2005;80(4):400-8.

Purpose: To examine the role of gender discrimination and sexual harassment in medical students' choice of specialty and residency program. Method: Anonymous, self-administered questionnaires were distributed in 1997 to fourth-year students enrolled in 14 public and private U.S. medical schools. In addition to reporting the frequency of gender discrimination and sexual harassment encountered during preclinical coursework, core clerkships, elective clerkships, and residency selection, students assessed the impact of these exposures (none, a little, some, quite a bit, the deciding factor) on their specialty choices and rankings of residency programs. Results: A total of 1,314 (69%) useable questionnaires were returned. Large percentages of men (83.2%) and women (92.8%) experienced, observed, or heard about at least one incident of gender discrimination and sexual harassment during medical school, although more women reported such behavior across all training contexts. Compared with men, significantly (p <= .01) more women who reported exposure indicated that gender discrimination and sexual harassment influenced their specialty choices (45.3% versus 16.4%) and residency rankings (25.3% versus 10.9%). Across all specialties, more women than men experienced gender discrimination and sexual harassment during residency selection, with one exception: a larger percentage of men choosing obstetrics and gynecology experienced such behavior. Among women, those choosing general surgery were most likely to experience gender discrimination and sexual harassment during residency selection. Interestingly, correlations between exposure to gender discrimination and sexual harassment and self-assessed impact on career decisions tended to be larger for men, suggesting that although fewer men are generally affected, they may weigh such experiences more heavily in their choice of specialty and residency program. Conclusion: This study suggests that exposure to gender discrimination and sexual harassment during undergraduate education may

influence some medical students' choice of specialty and, to a lesser degree, ranking of residency programs.

Tesch BJ, Osborne J, Simpson DE, Murray SF, Spiro J. Women physicians in dual-physician relationships compared with those in other dual-career relationships. Acad Med 1992 Aug;67(8):542-4.

This study compared the career and domestic responsibilities of women physicians whose domestic partners were physicians (WP-Ps) with those of women physicians whose domestic partners were not physicians (WP-NPs). They hypothesize that soon half of al female physicians will be involved in medial marriages. In 1988 the authors surveyed 602 women physicians in a large midwestern city regarding their career and domestic roles; 390 were physicians in training (students and residents), and 212 were physicians in practice (academic medicine and private practice). Overall, 382 (63%) responded; of the 382, 247 (65%) had domestic partners; of these 247, 91 (37%) were WP-Ps and 156 (63%) were WP-NPs. The WP-Ps were found to be twice as likely as the WP-NPs to interrupt their careers to accommodate their partners' careers. The WP-Ps also assumed significantly more domestic responsibilities and worked fewer hours practicing medicine than did the WP-NPs. The 163 women physicians in training (44-48%-of the WP-Ps and 119-76%-of the WP-NPs) demonstrated a more egalitarian division of labor overall, with no significant differences between the WP-Ps and the WP-NPs. The authors recommend that longitudinal studies be undertaken to determine whether women physicians in training continue this trend as they enter the practice of medicine.

The College of Family Physicians of Canada. Training for Rural Family Practitioners in Advanced Maternity Skills and Cesarean Section. Joint Position Paper, copyright 1996-2001, available on-line at http://www.cfpc.ca/English/cfpc/programs/patient care/maternity/joint position paper/

~1/3 Canadian women spend their pregnancies in rural Canada. Rural Canada can be operationally defined as areas where general practitioners or family physicians (FPs) provide most or all medical services, including maternity care. This leads to rural FPs having a much broader scope of practice therefore requiring more diverse training. Literature is reviewed and quality and quantity of education assessed. They suggest that because there is not sufficient evidence supporting diverse rural training procedures that the bar in each of the training programs could be set too high, causing the goals of rural practitioners to become unattainable. Ends with a series of recommendations for the future of maternity care in rural areas.

Tolhurst HM, Talbot JM, Baker LT. Women in rural general practice: conflict and compromise. Med J Australia 2000;173:119-20.

In a study in Australia using surveys and focus groups, women general practitioners in rural practice identified issues of long hours and after-hours work, the need for flexible childcare and subsidies, access to continuing medical education, the need for social support from other rural female physicians, workplace security after hours and suitable training for female rural doctors that reflect their practice content.

Wainer J, Chesters J. Rural mental health: neither romanticism nor despair. Aust J Rural Health. 2000 Jun; 8(3): 141-7.
This paper explores the relationship between rural places and mental health. It begins with a definition of mental health and an outline of the data that have led to the current concern with promoting positive mental health. We then consider aspects of rural life and place that contribute to positive mental health or increase the likelihood of mental health problems. Issues identified include environment, place, gender identity, violence and dispossession and the influence of the effects of structural changes in rural communities. The paper concludes with a discussion of some of the determinants of resilience in rural places, including social connectedness, valuing diversity and economic participation

Wainer J, Bryant L, Strasser R, Carson D, Stringer K. A Life, not a Wife. Gender Issues in Rural Medical Practice. Monash University. 2002. Available on line at: www.med.monash.edu.au/gendermed/docs/joalifenotawifeadelaide.rtf – accessed 28 February 2008.
Women outnumbered men, making up 50.8% of the medical students in Australia in 1999. Although they are making up in numbers, the medical system still does not represent equality between the sexes, and is still a masculine discipline. The challenge lies in incorporating the knowledge, culture and experience of women into thought systems and knowledge structures, such as medicine, which has developed without their input. Rural medicine, being the only branch of medicine with a shortage of applicants, is an area that women can enter and potentially change. The Australian culture is manifestly masculine and can be a dangerous place for women, young women in particular. For some young women recruited into medicine from rural communities, the experiences they have had have left them so angered that a lot of trust-building will have to occur before they will go back. Existing rural practice models do not encourage or even permit the different practice patterns of males and females. Communities, medical colleges, the Australian College of Rural and Remote Medicine, training programs and individual practices need to make the decision to permit and encourage a range of ways of practicing rural medicine, and to promote this decision to the next generation of young doctors.

Wainer J. Discussion paper on Female Family Physicians in Rural Practice. World Organization of Family Doctors (WONCA): Wonca Working Party on Rural Health Female Rural Doctors Working Group. July 2003.
This document has been developed following extensive consultation with female rural doctors and medical students from developed countries. It is recognized that the next stage of development has to include a consultative process with female doctors from the developing world, particularly Africa, Asia, and South America. This will require a communication process specifically designed to bring forth the views and experiences of women who may be working in environments without ready access to email, fax and other convenient means of communication
Highlights
Discusses the growing presence of female physicians worldwide as well as the rural situation. Gives a little background into how the WONCA Rural Working Party began and gender issues that have arisen. The document goes on to give recruitment, training, support, and rural structural strategies that can be adopted.

Wainer J. Work of Female Rural Doctors. Australian Journal of Rural Health. 2004;12:49-53.

Objective: To identify the impact of family life on the ways women practice rural medicine, and the changes needed to attract women to rural practice. Design: Census of women rural doctors in Victoria in 2000 using a self-completed postal survey. Setting: General and specialist practice. Subjects: Two hundred and seventy-one female general practitioners and 31 female specialists practicing in Rural, Remote and Metropolitan Area Classifications 3-7. General practitioners are those doctors with a primary medical degree and without additional specialist qualifications. Main Outcome Measures: Interaction of hours and type of work with family responsibilities. Results: Generalist and specialist women rural doctors carry the main responsibility for family care. This is reflected in the number of hours they work in clinical and non-clinical professional practice, availability for on-call and hospital work, and preference for the responsibilities of practice partnership or the flexibility of salaried positions. Most of the doctors had established a satisfactory balance between work and family responsibilities, although a substantial number were overworked in order to provide an income for their families or meet the needs of the communities. Thirty-six percent of female rural general practitioners and 56% of female rural specialists preferred to work fewer hours. Female general practitioners with responsibility for children were more than twice as likely as female general practitioners with children to be in a salaried position, and less likely to be a practice partner. The changes needed to attract and retain women in rural practice include a place for everyone in the doctor's family, flexible practice structures, mentoring by women doctors, and financial and personal recognition.

Walsh A, Gold M, Jensen P, Jedrzkiewicz M. Motherhood during training. Challenges and strategies. Can Fam Physician 2005;51:990-1.

OBJECTIVE: To determine what factors enable or impede women in a Canadian family medicine residency program from combining motherhood with residency training. To determine how policies can support these women, given that in recent decades the number of female family medicine residents has increased. DESIGN: Qualitative study using in-person interviews. SETTING: McMaster University Family Medicine Residency Program. PARTICIPANTS: Twenty-one of 27 family medicine residents taking maternity leave between 1994 and 1999. METHOD: Semistructured interviews. The research team reviewed transcripts of audiotaped interviews for emerging themes; consensus was reached on content and meaning. NVIVO software was used for data analysis. MAIN FINDINGS: Long hours, unpredictable work demands, guilt because absences from work increase workload for colleagues, and residents' high expectations of themselves cause pregnant residents severe stress. This stress continues upon return to work; finding adequate child care is an added stress. Residents report receiving less support from colleagues and supervisors upon return to work; they associate this with no longer being visibly pregnant. Physically demanding training rotations put additional strain on pregnant residents and those newly returned to work. Flexibility in scheduling rotations can help accommodate needs at home. Providing breaks, privacy, and refrigerators at work can help maintain breastfeeding. Allowing residents to remain involved in academic and clinical work during maternity leave helps maintain clinical skills, build new knowledge, and promote peer support. CONCLUSION: Pregnancy during residency training is common and becoming more common. Training programs can successfully enhance the experience of motherhood during

residency by providing flexibility at work to facilitate a healthy balance among the competing demands of family, work, and student life.

Wear D. Feminism in Medical Education: Problems and Promises. JAMWA 1994;49(2):43-7.
As of yet medical education has remained seemingly immune from a broad based feminist critique from within. By reviewing the literature the article indicates that approximately half of all women in medical school have experienced some form of sexual discrimination and that these experiences, be it subtle or direct, suggestions or threats, can crush the spirit, confidence and ambition of women at any age or level of professional attainment. Stern policies have been legislated to confront these problems, but it is attitudes that must be changed before behavior can be altered. Although the number of women entering medical school has increased, the representation at high levels has not changed. In recent surveys women generally did not perceive the medical education environment as gender fair, while their male colleagues did not perceive a lack of gender fairness.

Women Physicians' Issues Committee of the Canadian Medical Association. Women in Medicine: A Review of the Evidence. November 1999.
This report was put together to review and synthesise information and data regarding the role of women in medicine as physicians, members of organised medicine and leaders. The report also looks at the policies and actions proposed to enhance the representation of women in organised medicine and specifically at enhancing their role as leaders. Some of the subsections of the report included the history and representations of women in medicine, workload patterns, specialty choice and merging work and home life. This report gave a comprehensive look at the situation of Canadian female physicians.

Woodward CA, Williams AP, Ferrier B, Cohen M. Time spent on professional activities and unwaged domestic work: Is it different for male and female primary care physicians who have children at home? Canadian Family Physician. 42:1928-35, 1996 Oct.
OBJECTIVE: To examine how having children affects the hours spent by male and female family physicians on professional activities and on unwaged domestic work. DESIGN: Survey fielded between September 1993 and February 1994. SETTING: Ontario. PARTICIPANTS: All Ontario-based physicians certificated by the College of Family Physicians of Canada between 1989 and 1991 after completing a family medicine residency. MAIN OUTCOME MEASURES: Self-reported hours spent per week on professional activities and unwaged domestic work. RESULTS: Response rate was 70%; men and women were equally likely to respond. About half (47.7%) had children at home. Women with children at home spent fewer hours on professional activities ($P < 0.001$) than men with children, whose hours of professional activity were similar to hours of men without children. Both women and men with children reported spending more time on household maintenance than did those without children. Among physicians with children, although men spent time on child care (mean time 11.4 hours; SD 11), women spent much more time on it (mean time 39.7 hours; SD 21; $P < 0.001$). The women worked an average of 90.5 hours per week in professional and unwaged activities; men averaged 68.6 hours. Childless physicians worked fewer hours: men 54.1, women 52.6. CONCLUSIONS: Female physicians with children at home spend more time on child care and household maintenance than their male partners. These responsibilities reduce professional

work time (at least until all children are at school full time) and might deter women from active involvement in professional organizations.

Xu G, Rattner SL, Veloski JJ, Hojat M, Fields SK, Barzansky B. A national study of the factors influencing men and women physicians' choices of primary care specialties. Acad Med 1995 May;70(5):398-404.

BACKGROUND. Despite a recent increase in the percentage of graduating U.S. medical students planning to pursue generalist careers, interest in primary care among students is still far below what it was in the early 1980s and falls well short of the stated goal of the Association of American Medical Colleges that half of all graduates should choose generalist careers. Also during the past decade, the number of women students and physicians has increased. Given the importance of concerns regarding the primary care work force, it is timely to examine the relationship between gender and other factors that influence the decision to enter primary care. METHOD. Totals of 1,038 (65%) men and 558 (35%) women primary care physicians selected from the 1983 and 1984 graduates of all allopathic U.S. medical schools were surveyed in early 1993. Gender comparisons were made on the 19 variables that influenced the physicians' decisions to enter primary care specialties and on the six factor scores derived from a factor analysis of these 19 variables. Also included in the gender comparisons were characteristics of practice, populations served, timing of making the decision to enter primary care, and personal demographic information. RESULTS. Men, more than women, were influenced to become primary care physicians by early role models. Women, more than men, were influenced by personal and family factors. Overall, medical school experience and personal values are two important factors that explained the largest variances of the 19 predictor variables influencing the physicians' choices of primary care disciplines. There was no gender difference in place of origin, family income as a child, timing of the decision to become a primary care physician, or the amount of debt upon graduation. CONCLUSION. This nationwide study of primary care physicians indicates that men and women physicians differ in their perceptions of the relative importances of factors influencing the choice of a primary care specialty. Gender-specific factors should receive more attention in the development of successful strategies to attract more medical students into primary care specialties.

Zambrana RE. The underrepresentation of Hispanic women in the health professions. J Am Med Women's Assoc 1996 Aug-Oct;51(4):147-52.

Hispanics are severely underrepresented in medicine and the health professions, particularly Hispanic women compared to other women. Hispanics represent only 4.9% of medical and health professionals, with a disproportionate representation in allied health professions, and Hispanic women represent less than 2% of those in health professions that require advanced degrees. The purposes of this paper are to review the available data on Hispanic women in medicine and the health professions, to examine the factors that contribute to their underrepresentation, and to present and discuss recommendations to decrease the barriers to Hispanic women in the health professions. Factors associated with this underrepresentation include high levels of family poverty linked to high secondary school dropout rates, inadequate educational background and work experiences, and lack of information on resources and opportunities. Central recommendations to increase representation of Hispanic women call for institutional changes and commitments in data collection, early math and science preparation,

access to financial resources, and improvements in community linkages and the academic environment.

Zelek, B, Phillips, SP, Lefebvre, Y. Gender sensitivity in medical curricula. CMAJ 1997;156(9):1297-1300.

Both sex--the biologic aspects of being female or male--and gender--the cultural roles and meanings ascribed to each sex--are determinants of health. Medical education, research and practice have all suffered from a lack of attention to gender and a limited awareness of the effects of the sex-role stereotypes prevalent in our society. The Women's Health Interschool Curriculum Committee of Ontario has developed criteria for assessing the gender sensitivity of medical curricula. In this article, the effects of medicine's historical blindness to gender are explored, as are practical approaches to creating curricula whose content, language and process are gender-sensitive. Specific areas addressed include ensuring that women and men are equally represented, when appropriate, that men are not portrayed as the prototype of normal (and women as deviant), that language is inclusive and that women's health and illness are not limited to reproductive function. By eliminating or at least addressing the subtle and often unintentional gender stereotyping in lecture material, illustrations and problems used in problem-based learning, medical educators can undertake a much-needed transformation of curriculum.

Chapter Two

Women Physicians in Practice

Executive Summary

A. Sexual Stereotypes

- In most countries professional choices are influenced by traditional, cultural and religious attitudes and stereotypes
- Women in medicine are turning the profession into a 'pink collar profession'

B. Attitudes, Policies and Practices

- Most literature is from North America, UK, Australia, but some from Iran, Philippines, Mexico, South Africa, Israel, Egypt and some countries in Central and Eastern Europe (the former Soviet Union)
- The numbers of women physicians entering the field of medicine in many countries is increasing
- Low prestige of medicine in countries where majority of physicians are women
- In some settings, women's health is regarded as a gender based activity, and women in family medicine are relegated to doing only women's health
- Discrimination of women physicians and cultural restrictions on practice opportunities
- Cultural restrictions on women's mobility and activity may limit practice opportunities and scope of practice
- Practice characteristics between men and women differ
- Women choose different medical specialties for careers
- Women choose more flexible working conditions and more options are needed

C. Marriage and Parenting

- Women shoulder double responsibility for home, children, and professional work;
- Women married to other doctors work fewer professional hours (Canada)
- Part-time women feel excluded from decision-making (UK)
- Part-time women feel financially penalized, excessive workload (UK)
- Maternity leave options are helpful but cause special challenges: loss of income, interruption of careers, locums, etc.

D. Lesbian Women Physicians

- Lesbian physicians must make difficult choices between facing discrimination on one hand, and alienating patients and colleagues on the other, when deciding to reveal their sexual identity
- Homosexual discrimination remains a large problem in the medical community
- Lesbian and gay health professionals have formed organizations to support one another and influence policy and attitudes

E. Rural Medicine

- Shortage of physicians
- More challenging working environment
- Isolation, lack of social network
- Lack of options for work for women's spouses- women graduates more likely to choose urban sites to accommodate spouses' career choices and job options as well as family responsibilities
- Attitudes of rural communities can be hostile to women physicians
- Need for strategies to address recruitment of women physicians to rural settings

Literature Review: Women Physicians in Practice

Introduction

In many countries, women make up half or more of practicing physicians. The increasing numbers and evolving roles of women in medicine creates growing interest in examining and identifying differences between men and women physicians in practice. Also, not surprisingly, the issues take shape differently in developing compared to developed countries. In this section the literature that describes women in family practice in a variety of different settings in developing and developed countries is explored.

Women face discrimination, and repression in a number of countries where there may be laws forbidding the education of girls and women, leading to illiteracy and restricted access for women to health care. In some countries, women physicians are a significant proportion or the majority of physicians and enjoy respect and equity. However, in others, women may not become physicians and if they do, women physicians may experience low prestige and limited choice of practice because of restricted freedom of movement and religious and cultural beliefs. A full international review of the literature and of legal and discriminatory situations is beyond the scope of this summary. However, the limited examples we use are attempts to illustrate the challenges commonly facing women in practice internationally rather than focusing on specifics of individual countries.

Members of the WONCA Special Interest Group on Women and Family Medicine attended a WONCA workshop in Christchurch in June 2000 and developed Strategic Objectives from the Beijing Platform for Action for promoting and protecting the health of women. (Attachment 1). A report from the Women in Family Medicine Special Interest Group presented by Dr. Marilyn McMurchie, the Interim Convenor, was included in full in the Agenda Papers of the WONCA World Council held in Alpine Heath, South Africa in May 2001. The report included the full list of Strategic Objectives from the Beijing Platform of Action. In Resolution C.2001.36 of that WONCA World Council, the report was adopted. The Strategic Objectives from the Beijing Platform for Action, which was adopted by WONCA in 2001 suggests the following recommendations for the education and training of women: equal access to education; eradication of illiteracy among women; improvement in women's access to vocational training, science and technology, and continuing education; development of non-discriminatory education and training; allocation of sufficient resources for and monitor the implementation of educational reforms; promotion of lifelong education and training for girls and women.

The following sections give a brief overview of the main challenges and issues facing women practicing medicine, particularly family medicine.

Sexual Stereotypes

Stereotyping influences professional choices

Equality between the sexes within the medical profession has not been achieved partly because of stereotypical attitudes that still prevail in medicine (Herbert, 1992; Riska, 2001). Stereotyping can be defined as attributing various qualities to an individual simply because he or she is a

member of a particular group: the individual is a female, a member of a visible minority, a member of a religious denomination and so on. (Kunda Z, 1999)

"Nurturing", "mothering", "caring", "child care", "nursing" are stereotypically considered to be women's attributes whereas "technical skills", "complicated scientific knowledge", "challenging working conditions" and "leadership" are stereotypically considered men's qualities. Some of the specialties like pediatrics, obstetrics and gynecology and family medicine are thought to embrace women's attributes and others such as surgery, cardiology, orthopedics, and emergency medicine are thought to embrace men's attributes. Both men and women suffer from emergencies, experience diseases as children, require surgical intervention or require counseling. Both men and women doctors will bring strengths to each of these domains and all should be encouraged to consider them on their own merit, separated from stereotypical consideration.

Ducker (1994) notes that research on women in medicine has focused on the socially constructed perceived role conflict or strain experienced by women as a result of managing family roles and professional responsibilities and also on the apparent incompatibility of women's emotional and nurturing natures with the medical profession. As the number of women employed in a given specialty accumulates the prestige and income potential for that specialty declines (Ross, 2003). Statistics in Europe and the United States confirm that women physicians work mainly in areas of health characterized by lower earnings and decreased prestige (Riska, 2001).

In all countries, social and cultural stereotypes regarding typically "female" characteristics can also restrict women's freedom to pursue non-traditional specialties. In developing countries, in particular, such patterning is reflected in the disproportionate number of women physicians in areas such as pediatrics and psychiatry (Notzer, 1995) and in gynecology in Iran (Azarmina 2002). Similar to Western countries, men doctors in these countries primarily hold positions in surgery, academic medicine and leadership (Notzer, 1995). Regardless of whether these specialties can be more accommodating of the need for a flexible schedule to make time for family, and might be more nurturing and sympathetic, much can be gained from promoting equity within each specialty and in attracting women into all the specialty groups.

Pink Collar Profession

Internationally, as more women become physicians, the status of the profession, the payment for services, the number of hours worked, the type of specialty chosen, childbearing and child rearing responsibilities, leadership challenges and a call for more humane working conditions, have all combined together to cause medicine to become what the Medical Women's International Association calls a "pink collar profession". (Ross, 2003 – Medicine and Society: The Feminization of the Medical Profession. American Medical Association Virtual Mentor: Ethics Journal of the American Medical Association September 2003 http://virtualmentor.ama-assn.org/2003/09/msoc1-0309.html accessed 17 January 2008). There is concern that as medicine becomes "feminized", it will take on a lower status, as has been seen with other woman-predominant professions such as nursing and teaching (Ross, 2003; Reichenbach, 2004).

Attitudes, Policies and Practices

Increasing numbers of women physicians

While most literature comes from North America, Europe and Australia there is some information from non-Western or UK countries.

In Iran, Philippines, Mexico, South Africa, Israel, Egypt and some countries in Central and Eastern Europe (the former Soviet Union), the number of women entering the field of medicine has been increasing. In 1992, 12.5% of Iranian medical students were women, and today that number has increased to one third (Azarmina, 2002). A study in the Philippines showed an increasing number of women entering medical school. (Leopando, 1992). In Mexico the number of women medical students has increased from 10% in 1970 to 50% in 2000 (Knaul, 2000). In Egypt women represent 35-45% of medical school graduates (Nasser, 2000). Finally, within Eastern Europe, women comprise an overwhelming 80% of practicing doctors (Healy, 1997).

Approximately one quarter to one third of practicing physicians (Desjardins, 1994; Woodward, 1995; Canadian Medical Association, 1999) and half the medical school students in North America are women (Birenbaum, 1995; Woodward, 1995; Limacher, 1998; Canadian Medical Association, 1999; Dollin 2002). One report has projected that by the year 2021, women will comprise 42.8% of practicing physicians in Canada (Canadian Medical Association, 1999). The increasing number of women in medicine has the potential to change how medicine is practiced in various ways.

Low prestige of women in medicine

Traditional gender values in different parts of the world have influenced the amount and type of participation of women in medicine. It has been noted that medicine in the former USSR has been characterized as a "feminine" profession requiring personal involvement and compassion, whereas in the U.S., medicine has been dominated by men, resulting in the view of medicine as a rational and objective profession requiring high skill, competitiveness, and mental strength (Notzer, 1995). The view of medicine in the former USSR is consistent with other woman-dominated professions. In Israel and Egypt, where the number of women in medicine has also increased, the statistics imply that with increasing numbers of women, the prestige and income associated with the profession has been lowered (Notzer, 1995).

Although men and women physicians in Mexico and South Africa are not formally restricted in the type of medicine they practice, discrimination still exists with respect to their employment status. In Mexico, lack of funding for the health care system has resulted in high unemployment for new physicians, the majority of whom are women (Knaul, 2000). In South Africa, a survey of women family physicians revealed the typical challenges facing women in many countries with respect to maternity leave and flexible work options. Loss of benefits for part-time physicians, lack of maternity leave policies, and overtly discriminatory sick benefits that exclude pregnancy are issues in this country (Moodley, 1999). In addition, sexual harassment of women family physicians by men patients was reported by over one-quarter of respondents. In a Canadian study, over three-quarters of women physicians reported being sexually harassed by a patient at some point in their career (Phillips, 1993). Due to the nature of medical practice there may

be more opportunity for women physicians than women in other professions to be exposed to inappropriate exposure, touching and discussion of sexual matters by male patients (Schneider, 1997).

In Central and Eastern Europe women play a significant role in the medical work force. Women physicians make up over half of physicians in the Czech Republic and over 80% of physicians in the former Soviet Union. However, women physicians are typically employed in low status positions in primary care. In certain regions, women earn only 25% of what men earn, who typically occupy the most prestigious positions (Healy, 1997).

Discrimination of women physicians and cultural restrictions on practice opportunities

In the Middle East, religious beliefs have greatly influenced the role of women in medicine. In Iran for example, the Islamic revolution in 1979 dictated almost complete segregation of the sexes. In the early 1980s, gynecological examinations of women by men were banned, as they were deemed to violate religious rights. Although this ruling opened the door for women to be trained as gynecologists (reserving 100% of obstetrics/gynecology residency positions for women students), it has limited their scope of practice to areas of women's health and threatens to rob Iranian women of the right to choose their physician (Azarmina, 2002). The ability of women physicians to pursue a specialty in an area other than primary care or gynaecology has been greatly limited.

Practice Characteristics

Compared to men, women are more likely to participate in group rather than solo practice (Collins, 1997; Limacher, 1998; CMA 1999). They are also more likely to have patients in managed care (Collins, 1997) and to choose salaried positions over other forms of remuneration (Collins, 1997; Williams, 1997; Gjerberg, 2001; Dollin, 2002). Women physicians often receive lower salaries than their men colleagues (Desjardins, 1994; Dollin, 2002; McMurray, 2002; Carek, 2003). Based on census data from 1995, women physicians' salaries in Canada were 73% those of men physicians, after controlling for age and full versus part-time practice (Buske, 2000). The number of hours worked and visits billed are also lower for women compared to men (Desjardins, 1994; Baker, 1996; Woodward, 1996; Canadian Medical Association, 1999, Woodward, 2001; Britt, 2002).

Specialty choices

Several studies have shown that women physicians choose different medical specialty careers than men. This process begins in residency; both in North America and in the Nordic countries, women residents choose a medical specialty other than family/general practice much less often than men. Even when women choose other medical specialties, they tend to be concentrated in certain areas, particularly obstetrics and gynecology, pediatrics, (Dollin, 2002, McMurray, 2002) psychiatry, (Birenbaum, 1995; Collins, 1997; Riska, 2001) and to a lesser extent, occupational and internal medicine (Herbert, 1992; Gjerberg, 2001). The lowest concentration of women occurs in surgery, particularly cardiac, thoracic and orthopedic surgery (Limacher, 1998, McMurray, 2002). A report from the Women's Physicians' Issues Committee of the Canadian Medical Association

(1999) stated that women are reaching equal representation in all major categories of medicine except for surgery.

The flexible work week and part-time practice

Expectations of physicians have historically included round-the-clock access to one's physician. In the past, this has been largely achieved by men, with the support of full-time wives. With increasing numbers of women in the profession, this situation has changed. Due to family responsibilities and the desire for more balanced lives, many women physicians seek part-time practice (Fairchild et al., 2001). It has been reported that as many as 20% to 50% of women primary care physicians are in part-time practice (McMurray et al., 2002). However, this trend is not restricted to women physicians. A survey in Ontario of newly graduated family physicians found that men without children reduced their work hours between 1993 and 1999, and the difference between hours worked and preferred hours increased over this time for both men and women (Woodward et al 2001). These results suggest that both men and women physicians desire more balanced lifestyles.

Birenbaum (1995) and Limacher (1998) have reported that women choose specialties that allow for shorter and more flexible work hours, supporting the trend among women physicians to work fewer hours per week than their men colleagues. Women appear to make up the majority of part-time workers in the medical profession (Ducker, 1994; Baker, 1996; Rosenfeld 1996; Collins, 1997; Starkey, 1997). However the definition of what constitutes part-time work is controversial. Starkey et al (1997) found that many physicians who classify themselves as part-time work 40 hours per week, the equivalent of full-time work in Canada. Often family doctors work up to 50-60 hours per week plus call (Starkey, 1997; Desjardins, 1994; Baker, 1996). Dollin (2002), describing the Physician Manpower Survey, 1989-1999 in Canada, reported that women physicians worked fewer hours per week than their men counterparts. The Women Physicians' Issues Committee of the CMA (1999) found that on average, women family physicians practiced seven to eight fewer hours per week than men the same age. Similar patterns have been found in Australia, England, and the U.S (McMurray, 2002) As described below, this tendency for unequal hours of practice between men and women is more than accounted for by the additional domestic and child-rearing activities of women physicians compared to men physicians.

Part time practice status has a significant impact on the activity level and service provision of women physicians. A study by Woodward and Hurley (1995) in Canada found that women provided a third fewer services per year than men in family medicine and general practice, 25% fewer services in general internal medicine, and 22% fewer services in both pediatrics and psychiatry. In one opinion survey of part-time family physicians in the U.K., 40% have reported feeling excluded from decision-making about patient care and practice policy, and just under forty percent felt that their workload was excessive in comparison with their full-time counterparts. Further, many had the opinion that they were financially penalized. (Littlewood, 1999) and other studies have also reported lower earnings for women physician compared to men, even after controlling for hours worked (McMurray, 2002; Wallace, 2002). However it has been found that women who work their preferred number of hours, whether full or part-time, are more satisfied with their work life balance (Carr, 2003). With increasing numbers of women entering the medicine who are predisposed to work part time, the health care system

is likely to require an increased number of physicians to maintain the same level of service. If this redistribution serves to reduce the paid work-week for both men and women to a more manageable 40 hours, then the impact of women on the profession will humanize working conditions.

In the UK, a survey was conducted on the roles and experiences of general practitioners that were working part-time. These physicians' perceptions of the attitudes of their colleagues and patients to their part-time status, and the consequences of these for their professional development were studied. Three-quarters of respondents were women. The results showed that the majority of GPs worked on a part-time basis in order to meet family responsibilities. Forty percent said that they felt excluded from decision making, continuity of patient care and practice policy. Approximately 40% also stated that their workload was excessive in comparison with their full-time colleagues. Furthermore, many expressed the opinion that they were financially penalised (Littlewood et al, 1999).

Women physicians practicing part-time have also been made to feel that their practice suffers as a result of their decision, and have been subjected to colleagues' beliefs that part-time primary care physicians are less productive clinicians than their full-time colleagues and provide a lower degree of access and continuity for patients (Fairchild et al., 2001). Fairchild et al. (2001) has reported evidence that this is not the case in a study that found that patient satisfaction, risk-adjusted resource utilization, and quality of preventative care did not differ between part-time and full-time primary care physicians. In fact, after adjustment for clinical hours, productivity was 62% greater for part-time primary care physicians than for their full-time colleagues. Murray et al. (2000) have also reported that patient satisfaction is unaffected by the number of hours worked by the physician.

Marriage and Parenting

Dual Physician Marriages

The demands of a medical career, including long work hours, stressful decision-making, and the administrative burdens of running a practice, all affect a doctor's personal life (Harari, 1998). Many women find it challenging to combine marriage and parenthood with a career in medicine (Tesch, 1992; Harari, 1998; Phillips, 2000); on the other hand, in research focused on the stress of multiple roles, the rewards of the combined roles are often not measured. The complexity is magnified in dual-physician marriages. In North America, women in dual physician marriages generally work fewer hours than women married to non-physician professionals (Sobecks, 1999, Woodward 2001). Overall, both men and women in dual doctor marriages have a lower personal income than physicians married to non-physicians, although they usually do have a greater combined family income (Sobecks, 1999). Married men physicians with children show increased salary as compared to single men, whereas the opposite is true for women physicians (Sasser, 2005). In one Canadian study of recently graduated family physicians, married women physicians' practice patterns depended on those of their spouses; women physicians were less likely to work full time than their spouses, while the number of hours on professional activities for men was not dependent on marital status (Ferrier, 1996). In another Canadian study, women physicians married to physicians reduced their hours of work to a greater extent than their male counterparts (Woodward, 2005).

Double shifts

Parenthood appears to have a different impact on the careers of women physicians compared to men physicians. Several studies have reported that having children at home did not significantly alter the number of hours men family physicians spend on professional activities, but women family physicians decreased their time spent on professional activities (Woodward, 1996, Dollin 2002, Women Physicians' Issues Committee of the Canadian Medical Association, 1999). Such a cutback in professional time is not surprising, since women shoulder more of the household and childcare responsibilities at home, even if both parents hold full time jobs (Herbert, 1992; Ferrier, 1996; Woodward, 1996). Once a physician has children, only 30.2% of men physician's wives hold full time jobs, whereas 85.3% of women physician's husbands are employed full time (Woodward et al., 1996). More than three quarters of women physicians, compared to 12% of men physicians spend 20 or more hours per week on child-care (Woodward et al., 1996). Often women physicians who are married to other doctors will take on more stereotypically feminine roles at home than those married to non-physicians (Tesch, 1992; Sobecks, 1999). Taking into account childcare and household work, women physicians have been reported to work 22 more hours per week than men (Woodward, 1996). Thus women may spend fewer hours in practice but actually work longer hours than men when the work at home is included. In addition, a study in Canada found that one third of women compared to 11% of men in family practice had experienced a career interruption in the first 10 years of practice (Woodward, 1990). A study comparing physicians in the Netherlands and the U.S. found that there were higher rates of burnout for women physicians compared to men in the U.S but not the Netherlands, despite the fact that women practiced fewer hours than men in both countries. It was suggested that the greater reported control over work in the Netherlands for women physicians compared to the U.S. could account for this difference (Linzer, 2002). For such inequity to change, greater acceptance of shorter and more flexible work schedules for both genders will be necessary.

It has been noted in a review of research on occupational stress for physicians by Gross (1992) that reasons for perceiving stress may be different for women and men physicians. Women physicians' differential experiences in the workplace and their higher burden of family responsibilities may cause them to report stress differently than men physicians.

Maternity Leave

Women in practice face unique challenges arranging coverage when they take maternity leave. Unless a locum can be found, the costs of overhead and staffing may force a woman to shorten her leave. In Canada, only four of ten provincial medical organizations offer maternity benefits to all fee-for-service physicians, while in one province only general practitioners are covered (Nicholls, 2003). However, a survey of Ontario physicians showed that very few physician parents took the full leave allowed (Phillips, 2000) and physicians report feeling a negative impact on the work of their colleagues (Lent, 2000).

A survey of Ontario's medical faculty further indicated that women felt guilty about taking parental leaves and consequently increasing their colleague's workloads. They limited their maternity leaves to durations far shorter than that offered by their universities or the law (Phillips et al, 2000). The pursuit of part-time medicine by women is often accompanied by feelings of stress and guilt, particularly when colleagues suggest that part-time work and parenting at home

are nonproductive (Kilmartin et al., 2002). Such pressure and emotions could have serious repercussions upon the health and well-being of female physicians.

Lesbian Women Physicians

Lesbian and gay physicians face specific challenges in practice. There is a tension between the risk of experiencing discrimination if sexual orientation is revealed, and the risk of alienating patients or colleagues if sexual orientation is not revealed. It is well documented that anti-homosexual discrimination occurs, in the form of verbal harassment and marginalization of gay and lesbian physicians (Burke, 2001). A recent qualitative study in the UK found that homosexual physicians decide whether or not to reveal their sexual orientation to patients depending on the context; for example with gay patients, the encounter may be facilitated by the physician revealing his/her status (Riordan, 2004). Gay and lesbian health professionals have formed organizations such as the Gay and Lesbian Medical Association in the US, and the Gay and Lesbian Association of Doctors and Dentists in the UK in order to provide support and influence policy and attitudes.

Rural Medicine

Shortage of physicians

Rural areas in many parts of the world desperately require more physicians. In Western countries female doctors are currently even less likely to go into rural practice than their male colleagues (Strasser, 1997; Doescher, 2000). In 1998, 89.2% of all physicians, and 75% of FP/GPs, worked in metropolitan areas of the U.S., leaving 11% of physicians to care for the 20% who live in rural areas (Mitka, 2001). Similar situations have been documented in Australia and Canada. Only 19% of women GPs, and 23% of men GPs are located in Australian rural areas, treating 27% of the population (Tolhurst, 2000). In Canada currently, 20% of the population lives in rural areas, while 17% of family physicians/GPs and 10% of all physicians practice in these areas (J. Rourke, personal communication). This statistic demonstrates the relative shortage of specialists and the subsequent need for family physicians/GPs to have more specialized skills compared to urban family physicians/GPs. The situation is compounded by the fact that a minority of rural physicians are women (Johnston, 1998; Tolhurst, 2000; Wainer, 2000; Mitka, 2001).

Challenges of the Working Environment

The shortage of doctors in rural areas may cause particular hardship for women physicians. As Johnston notes (1998), rural physicians in Canada have a higher patient load, resulting in a greater proportion of patients needing acute care and less time per patient compared to urban physicians. This often results in shorter visits, limiting the physicians' ability to provide preventative services, especially in women's health. The likelihood that women physicians in rural areas will see more women patients has additional implications. Johnston reported that in her first rural community practice, she underwent formal investigation for the high number of cervical cancers she diagnosed (Johnston, 1998). In reality, she was simply the first woman physician in the area and the first to perform routine Pap screening of her patients. Population-based data have similarly revealed that women physicians engage in more preventive health care (Woodward, 1996b). The unmet needs for women's health in rural areas put an additional burden on women physicians.

Isolation

Women rural physicians experience greater role strain, as well as remoteness and isolation difficulties (Tolhurst, 2000). Not surprisingly, given these stressors, rural communities must make attractive offers to lure physicians (Mitka, 2001).

Options for employment for spouses

It has also been noted that women physicians are often in dual-professional marriages, which increases the challenge of spousal employment in rural areas and may contribute to the geographical disparities of physician distribution (Ferrier, 1996). Women physicians appreciate employment opportunities for spouse or partner, availability of childcare and flexible scheduling opportunities (Mitka, 2001).

Attitudes of rural communities to women

Without adequate support, women physicians in rural areas have a high likelihood of burnout leading to departure from rural practice (Tolhurst, 2000). Exacerbating the situation are the hostile attitudes toward women physicians in some rural areas. Wainer et al. (2002) noted that some women recruited by rural communities have been so angered by their experiences of rural culture that they are unwilling to continue in rural practice. These concerns need to be addressed, potentially through flexible child care services, support and email chat groups for women rural doctors, sensitive education in medical schools, as well as in the community, and adequate workplace security, especially after hours (Starkey, 1997; Tolhurst, 2000). A recent Canadian study of rural physicians and family medicine residents found that the most important solutions to recruit and retain family physicians in rural practice included limiting on-call duty, funding and time off for CME, more advanced skills training, better supply of locums, more realistic emergency room coverage fees, and a specialist referral network (Rourke, 2003).

Strategies to address recruitment of women physicians to rural settings

In 2002, the WONCA Working Party on Rural Practice, prepared a Draft Policy on for Women in Rural Practice which was presented at a workshop in Spain (2003) and also in northern Ontario, Canada (2003). The paper was written by J. Wainer on behalf of the an international working group of the Wonca Working Party on Rural practice with the purpose of developing effective strategies to address the challenges facing women physicians practicing in rural communities. Available on line at : http://www.globalfamilydoctor.com/aboutWonca/working_groups/rural_training/women/Draft_Policy_for_Women_in_Rural_Practice.htm accessed 17 January 2008. These strategies are directed at recruitment, training, support and structure of rural medical practice, and representation and leadership.

Complex hierarchical relationships with nurses

Historically, the medical profession has been predominantly male-dominated, while nursing has been regarded as an occupation reserved for women. The doctor-nurse relationship was once characterized as patriarchal and dominant-subservient in nature and followed an established pattern of woman nurse deference to men physician authority. This sexual division of labour within medicine was viewed as an extension of traditional male and female societal roles. Good

nursing care was equated with caring for the patient and fulfilling doctors' orders (Gjerberg and Kjolsrod, 2001). In 1967, Stein indicated that despite the passage of time, these roles had not significantly changed. Stein described a pattern of behavior, which he referred to as the "doctor-nurse game", in which nurses showed initiative and made important recommendations, while appearing to defer passively to the doctor's authority. The nurses could thus prevent professional conflict and avoid commandeering physician power. In recent decades, the nursing profession has been striving for and achieving professional autonomy and more equal less subservient relationships with physicians and other health professionals (Stein et al, 1990). These changes have been attributed in part to an increasing number of women physicians and men nurses.

There is limited research describing the interactions and relationships between women nurses and doctors. In a survey of 1999 nurses at an urban, university-based hospital nurses were found to experience greater satisfaction when communicating with female rather than male physicians and to prefer a woman's managerial style. Women doctors were perceived to be less demanding and more consultative in their approach. Nurses doubted that physicians' sex affected their behaviour, although some admitted anger or disappointment when women physicians did not exceed the standards nurses set for men physicians. On the other hand, some women nurses described women doctors in stereotypic terms such as "demanding", "domineering", and "bitchy". In general, nurses were more willing to serve and defer to men physicians. They approached women physicians on a more egalitarian basis, were more comfortable communicating with them, and yet were more hostile toward their use of medical authority (Zelek and Phillips, 2003).

The physician's perspective in the woman nurse-doctor relationship was also examined through qualitative interviews and a survey of 3589 women and men doctors in Norway (Gjerberg & Kjolsrod, 2001). In the survey, more than 80% of the women physicians felt that at some time in their careers they had experienced unequal treatment, more intense scrutiny, or a lack of respect from nurses because of their gender. Women physicians often felt that they obtained less assistance from nurses than their men colleagues. For example, women physicians reported being often left to fend for themselves in cleaning up exam areas or retrieving paperwork, whereas women nurses would much more readily assist men physicians with these tasks. Approximately two-thirds of the women doctors reported that nurses treated them with less respect than men doctors. Some physicians described situations in which they felt that nurses did not respect their decisions, particularly younger women physicians. Women physicians also described flirtation between men doctors and women nurses as common practice, resulting in more eagerness by women nurses to aid men physicians and infrequent confrontations or questioning of decisions. The women doctors expressed their belief that nurses find the doctor-nurse relationship more attractive if the doctor is a man.

In addition, women doctors described themselves as a "third group", distinct from both nurses and men doctors. Some of the women doctors described strategies that they employed in order to achieve a sense of belonging and to receive the needed assistance, support, and respect from nurses. These strategies included the establishment of friendship with the nurses and carrying out nursing tasks. However, women physicians resented having to extend themselves beyond their expected professional roles and duties in order to cultivate egalitarianism and friendship with women nurses. The authors suggest that women nurses wish to strengthen their position in

relation to doctors, and have an "easier match because of similarities in sex" (Gjerberg & Kjolsrod, 2001, pg 197).

In a qualitative study of women nurses and residents, nurses felt they were treated better by women than men residents, because of the women residents' willingness to befriend nurses and treat them with more respect. However, women residents reported feeling that the expectations of friendliness with nurses was somewhat of a burden, and that they felt nurses questioned them more, treated them with less respect and had higher expectations than of men residents (Wear, 2004).

Thus, it appears that when nurses and doctors are women, traditional power imbalances in their relationships diminish. This suggests that these imbalances are based as much on gender as on professional hierarchy (Zelek & Phillips, 2003).

Conclusions

The number of women entering medicine is increasing worldwide creating an urgent need to address the issues, challenges, and barriers currently faced by women practitioners. Throughout the world, discrimination on the basis of gender affects career paths of women and men physicians. Attitudes to women as physicians affect their prestige and earning potential. Patterns of practice differ between men and women physicians. These include the numbers of patient encounters, the types of patients, and the choice of specialty. Special issues face women physicians in developing and developed countries. Women are promoting more humane work hours and more flexible work schedules for both men and women, which are necessary so that both can have satisfactory roles as parents as well as rewarding professional lives. In rural practice, women physicians face special challenges. Elimination of the gender stereotypes that limit both men's and women's career paths are essential to enhancing medical care provision and ensuring that all physicians can choose a professional career which will enable him or her to serve the community most effectively.

Abstracts and Summaries: Women Physicians in Practice

Azarmina P. In Iran, gender segregation is becoming a fact of medical life. CMAJ 2002;166(5):645.

A prime objective of Iran's Islamic revolution in 1979, which ended the trend toward secularization, was to separate men and women in almost every aspect of their lives and to minimize physical contact. In 1980 Ayatollah Khomeini (supreme leader, Imam, of Iran) stopped males from entering gynecology as their examination of women violated religious rules. Female only hospitals were introduced (men cannot even enter). Iran will be training thousands of new female doctors over the next 2 decades (10 yrs ago, only 12.5% med stud were Women, now 1/3 of 22326 students at 38 med schools are women). All residency positions in ob/gyn are reserved for women, as well as half internal medicine, general surgery and cardiology and ¼ of orthopedic surgery, urology, neurosurgery, ophthalmology and psychiatry. New system raises difficult issues ie. male students don't have sufficient ob/gyn training, females being deprived experience on male wards, taking away patients right to choose which sex of doctor.

Baker LC. Differences in earnings between male and female physicians. N Engl J Med 1996 Apr 11;334(15):960-4.

BACKGROUND. Male physicians have long earned more than female physicians, even after differences in the number of hours worked, specialty, practice setting, and other characteristics are taken into account. Whether earnings patterns have changed recently is not known. METHODS. I examined data on earnings from the 1991 Survey of Young Physicians, a nationwide survey of physicians under 45 years of age with two to nine years of practice experience. The results were compared with data from the 1987 Survey of Young Physicians and with data on the earnings of physicians with 10 or more years of experience from the American Medical Association's 1991 Socioeconomic Monitoring System survey. RESULTS. In 1990, young male physicians earned 41 percent more per year than young female physicians (male:female earnings ratio, 1.41; 95 percent confidence interval, 1.34 to 1.49). Per hour, young men earned 14 percent more than young women (ratio, 1.14; 95 percent confidence interval, 1.09 to 1.20). However, after adjusting for differences in specialty, practice setting, and other characteristics, no earnings difference was evident (ratio, 1.00; 95 percent confidence interval, 0.96 to 1.04). In general practice and family practice, women earned more than men, after adjustment for differences in other characteristics (ratio, 0.87; 95 percent confidence interval, 0.78 to 0.97). In internal-medicine subspecialties and emergency medicine, men earned more than women (ratio, 1.26; 95 percent confidence interval, 1.10 to 1.44). Among physicians with 10 or more years of experience, men also earned more than women (ratio, 1.17; 95 percent confidence interval, 1.07 to 1.27). CONCLUSIONS. Young male and female physicians with similar characteristics earn equal amounts of money. However, differences in earnings between men and women remain among older physicians and in some specialties.

Bickel J. Women physicians: change agents or second class citizens. Human Medicine 1990;6(2):101-5.

Birenbaum R. Growing number of female physicians changing the face of Canadian medicine. CMAJ 1995 Oct 15;153(8):1164-6.
The growing number of female physicians is changing the way medicine is practised. One recent Canadian study found that "significant differences in practice characteristics and service mix and pattern between men and women." Women are found to be concentrated in the specialties of pediatrics, dermatology or psychiatry. Another change involves differences in the way men and women communicate. One lawyer noted that most medical lawsuits involve a breakdown in communication between doctor and patient, and very few female physicians have been the target of malpractice suits--even in high-risk specialties such as obstetrics and anesthesiology.

Britt H, Valenti L, Miller G. Time for care. Length of general practice consultations in Australia. Aust Fam Physician 2002;31:1-5.
BACKGROUND: Past estimates of the length of Australian general practice consultations have been based on Medicare item numbers claimed, which carries probable serious inaccuracies. AIMS: To describe the length of general practitioner consultations. METHODS: A random sample of 926 GPs recorded the start and finish times in minutes of their consultations for which a Medicare item number was claimed between April 2000 and March 2001, within a continuous cross sectional national study of general practice activity. RESULTS: Mean length of the consultations was 14.8 minutes (range 1-106). Mean length per GP varied widely (mean of means 14.8, range 3-39, mode 15.0 minutes). Female GPs had significantly longer consultations than males. Younger (< 45 years) male metropolitan GPs had the shortest mean length. Most attendances (85.7%) were designated Level B, 1.5% as Level A, 11.7% Levels C and 1.1% as level D. Mean length of Level A was 7.1 minutes, Level B-13.0, Level C-26.1, and Level D-44.9 minutes. CONCLUSION: This study suggests that the majority of GPs are not practising 'six minute medicine', and may assist cost projections of any changes to the Medicare Schedule.

Burke BP, White JC. Wellbeing of gay, lesbian, and bisexual doctors. Br Med J 2001;322:422-4.
While research has investigated doctors' attitudes towards homosexual and bisexual patients, relatively little attention has been paid to gay, lesbian, and bisexual doctors . The factors most likely to affect the wellbeing of such doctors are homophobia, discrimination, the challenges of medical school and residency, and lack of support systems. There is documented homophobia among doctors and directors of medical school education. Gay, lesbian, and bisexual doctors experience verbal harassment or insults from medical colleagues, and many believe that they risk losing their job if colleagues discover their sexual orientation. Although the situation has improved, more needs to be done to enhance the wellbeing of gay, lesbian, and bisexual doctors

Buske L. Doctors working harder, earning less. CMAJ 2000;162:851.
The author compares Canadian census data from 1980 to 1996. The average annual earnings of physicians decreased, but only for physicians under the age of 55. In 1995, female physicians earned on average 73% of what male physicians earned. The gap between general practitioners and specialists was much smaller for women than for men.

Carek PJ. King DE. Hunter M. Gilbert GE. Practice profiles, procedures, and personal rewards according to the sex of the physician. Southern Medical Journal 2003;96(8):767-71.
BACKGROUND: The objective of this study was to explore physician and practice characteristics according to sex. METHOD: All graduates of a southeastern state's family practice residency programs were surveyed. RESULTS: Seven hundred fourteen (53.5%; 79.7% men, 20.3% women) surveys were returned and analyzed. Practice arrangements and practice settings did not differ significantly between the two study groups. Male graduates saw a significantly higher percentage of geriatric patients (28.9% versus 24.7%; P = 0.008) and made significantly more nursing home visits (50.6% versus 35.5%; P = 0.002) and home visits (49.0% versus 33.8%; P = 0.001) than female graduates. With the exception of skin biopsies, a greater percentage of male physicians performed procedures than female physicians. Female graduates and male graduates had the same initial salary but had a significantly different current salary range. No significant differences were seen in personal or career satisfaction. CONCLUSION: Practice patterns of male and female physicians were generally similar. However, significant differences were noted in geriatric care, procedures, and salary.

Carr PL, Ash AS, Friedman RH, Scaramucci A, Barnett RC, Szalacha L, Palepu A, Moskowitz MA. Relation of family responsibilities and gender to the productivity and career satisfaction of medical faculty. Ann Intern Med 1998;129:532-8.
BACKGROUND: Studies have found that female faculty publish less, have slower career progress, and generally have a more difficult time in academic careers than male faculty. The relation of family (dependent) responsibilities to gender and academic productivity is unclear. OBJECTIVE: To describe dependent responsibilities by gender and to identify their relation to the aspirations, goals, rate of progress, academic productivity, and career satisfaction of male and female medical school faculty. DESIGN: 177-item survey questionnaire. SETTING: 24 randomly selected medical schools in the contiguous United States. PARTICIPANTS: 1979 respondents from a probability sample of full-time academic medical school faculty. MEASUREMENTS: The main end point for measuring academic productivity was the total number of publications in refereed journals. Perceived career progress and career satisfaction were assessed by using Likert scales. RESULTS: For both male and female faculty, more than 90% of time devoted to family responsibilities was spent on child care. Among faculty with children, women had greater obstacles to academic careers and less institutional support, including research funding from their institutions (46% compared with 57%; P < 0.001) and secretarial support (0.68 full-time equivalents compared with 0.83 full-time equivalents; P = 0.003), than men. Compared with men with children, women with children had fewer publications (18.3 compared with 29.3; P < 0.001), slower self-perceived career progress (2.6 compared with 3.1; P < 0.001), and lower career satisfaction (5.9 compared with 6.6; P < 0.001). However, no significant differences between the sexes were seen for faculty without children. CONCLUSIONS: Compared with female faculty without children and compared with men, female faculty with children face major obstacles in academic careers. Some of these obstacles can be easily modified (for example, by eliminating after-hours meetings and creating part-time career tracks). Medical schools should address these obstacles and provide support for faculty with children.

Carr PL. Gareis KC. Barnett RC. Characteristics and outcomes for women physicians who work reduced hours. Journal of Women's Health 2003;12(4):399-405.
OBJECTIVES: To understand the characteristics of women physicians who work reduced hours in dual-earner couples and how such work schedules affect the quality of the marital role, parental role, and job role, as well as indicators of psychological distress, burnout, career satisfaction, and life satisfaction. METHODS: Survey of a random sample of female physicians between 25 and 50 years of age, working within 25 miles of Boston, whose names were obtained from the Registry of Board Certification in Medicine in Massachusetts. Interviewers conducted a 60-minute face-to-face close-ended interview after a 20-minute mailed questionnaire had been completed. RESULTS: Fifty-one full-time physicians and 47 reduced-hours physicians completed the study, for a completion rate of 49.5%. There was no difference in age, number of years as a physician, mean household income, number of children, or presence of an infant in the home between reduced-hours and full-time physicians. Reduced-hours physicians, however, were more likely to be in a generalist specialty (40% vs. 12%, p = 0.001) and to spend a greater portion of their time in patient care (64.5% vs. 50.1%, p = 0.003) and less time in research (4.9% vs. 18.0%, p = 0.002) than full-time physicians. In addition, there was no difference between the two groups in the perception of work interfering with family life (1.8 vs. 1.7, p = 0.17; scale 1-7 with 7 high) or family life interfering with work (1.4 vs. 1.5, p = 0.62). Physicians who worked their preferred number of hours (25% of full-time and 57% of reduced-hours physicians), regardless of full-time (self-reported hours 35-90 hours per week) or reduced-hours (20-60 hours per week) status, reported better job role quality (r = 0.35, p = 0.001), schedule fit (r = 0.41, p < or = 0.001), lower burnout (r = -0.22, p = 0.03), better marital role quality (r = 0.28, p = 0.006), and higher life satisfaction (r = 0.29, p = 0.005). CONCLUSIONS: Women physicians who work their preferred number of hours achieve the best balance of work and family outcomes.

Collins KS, Schoen CA, Khoransanizadeh F. Practice satisfaction and experiences of women physicians in an era of managed care. Journal of the American Medical Women's Association. 52(2):52-6, 1997.
Managed care is dramatically changing the way the nation pays for health care and fueling rapid restructuring of health care delivery. In response, the medical profession is confronting new pressures and major shifts in delivery. At the same time, more women are entering the medical profession and more are in medical practice than ever before. To examine practice satisfaction and concerns of women physicians in the current health care environment, this article analyzes the responses to a national survey of physicians by gender. Women physicians were more likely than men physicians to be in generalist or primary care fields, to be practicing in groups than as solo practitioners, to have practices with a high proportion of managed care patients, and to report dissatisfaction with the amount of time they have to spend with patients and colleagues and with their ability to stay knowledgeable. Women are more likely to work less than 40 and less likely to work more than 50 hours per week. Further research and more in-depth probing of women's experiences are needed to track experiences over time and to relate practice experiences to quality of patient care.

Cujec B, Oancia T, Bohm C, Johnson D. Career and parenting satisfaction among medical students, residents and physician teachers at a Canadian medical school. CMAJ 2000 Mar 7;162(5):637-40.

BACKGROUND: Studies of career and parenting satisfaction have focused separately on medical students, residents and practising physicians. The objective of this study was to compare satisfaction across a spectrum of stages of medical career. METHODS: A survey of incoming medical students, current medical students, residents and physician teachers at the University of Saskatchewan was conducted in the spring of 1997. Response rates were 77% (43/56), 81% (177/218), 65% (134/206) and 39% (215/554) respectively. Factors assessed in the stepwise regression analysis were the effect of sex, parenting and level of training on the likelihood of recommending parenting to medical students or residents, and on parenting dissatisfaction, job dissatisfaction, career dissatisfaction and the importance of flexibility within the college program to accommodate family obligations. RESULTS: More male than female physician teachers had partners (92% v. 81%, $p < 0.01$) and were parents (94% v. 72%, $p < 0.01$). Female physician teachers spent equal hours per week at work compared with their male counterparts (mean 52 and 58 hours respectively) and more than double the weekly time on family and household work (36 v. 14 hours, $p < 0.01$). Physician teachers were the most likely respondents to recommend parenting to residents and their peers. Residents were the most dissatisfied with their parenting time. At all career stages women were less likely than men to recommend parenting, were more dissatisfied with the amount of time spent as parents and were more likely to regard flexibility within the college program as beneficial. There were no sex-related differences in job dissatisfaction and career dissatisfaction. However, married women were more dissatisfied with their jobs than were married men. Job dissatisfaction was greatest among medical students, and career dissatisfaction was greatest among residents. INTERPRETATION: The optimal timing of parenthood appears to be upon completion of medical training. Women were less likely to recommend parenting, less satisfied with the time available for parenting and more likely to value flexibility within the college program to accommodate family needs. These differences did not translate into women experiencing more job or career dissatisfaction.

Desjardins S, Dedobbeleer N, Contandriopoulos A. Gender and Physician Productivity in Quebec. The Canadian Journal of OB/GYM & Women's Health Care 1994;6(1):559-63.

The percentage of women in the Quebec medical profession has significantly increased in recent years, reflecting a North American trend. Women now make up more than 20% of Quebec physicians, and currently even outnumber men in medical schools. Two cohorts from 1978 and 1988 were studied. A 39% and 32% difference was found between male and female physician's salaries in each respective cohort year, although, it was also found that males consistently worked more hours than females. Questions have been raised by medical associations and health care planners about the impact of a growing number of women in the medical profession on physicians' productivity. Implications of this phenomenon for manpower planning are discussed.

Dollin J. The Feminization of Family Medicine: How is the Health-Care System Influenced? The Canadian Journal of CME January 2002:138-145.

Context: Preconceptions of women in medicine have persisted for centuries. These preconceptions have perfused society and influenced, both covertly and overtly, the career paths taken by female family physicians. Objective: This article examines both the positive and the

negative gender biases female physicians must face. Design: To create a description of the how the literature portrays female family physicians based on averages and summaries of the studies done. Main Outcome Measures: The articles will summarize a variety of topics including patient choice, preventative care, hours worked, productivity, practice patterns, history and future predictions. Results: Female physicians are alleged to be "better listeners" although their salaries are 58%-70% that of male physicians (despite a system that charges fees for service). Further analysis has shown that the hourly wage of female is 37.54$ versus 45.17$ for males. In the past 10 years there has been a 15% increase in the number of women in family medicine (32 to 47%) and paediatrics and obstetrics are comprised of 65%-67% female practitioners respectively. Although the numbers of women involved in medicine is rising, there is still only about 10% involved in academics, medical education, administration and research. Married women were found to work less than single women, although married men were found to work more. Significant role strain was discovered in these women between their role as a wife and mother, and their role as a physician. Conclusion: Although women Family Physicians have increasingly gained patient and public support, the actual differences in career choice, practice patterns, promotion and pay that exist between male and female practitioners is still very obvious. The perceived gender gap has been qualified and quantified by the studies presented and hopefully a more balanced profession will be achieved in the future.

Ducker D. Research on women physicians with multiple roles: a feminist perspective. J Am Med Women's Assoc 1994 May-Jun;49(3):78-84.
This paper describes a feminist empiricist approach to research and conceptual advances in the study of women professionals and applies it to research on women physicians with multiple roles. In past research, social values about appropriate roles for women led to an emphasis on negative outcomes, vagueness about which roles conflict, and the assumption that the work role is the most problematic for women. The effects of social context, including interpersonal relationships, has also been ignored. Research using new approaches has shown that there are benefits to combining roles, that role conflict is most common between work and parental roles, and that social support from the spouse is crucial. The importance of the work environment is also stressed.

Fairchild DG, McLoughlin KS, Gharib S, Horsky J, Portnow M, Richter J, Gagliano N, Bates DW. Productivity, quality, and patient satisfaction: comparison of part-time and full-time primary care physicians. J Gen Intern Med. 2001 Oct;16(10):663-7.
CONTEXT: Although few data are available, many believe that part-time primary care physicians (PCPs) are less productive and provide lower quality care than full-time PCPs. Some insurers exclude part-time PCPs from their provider networks. OBJECTIVE: To compare productivity, quality of preventive care, patient satisfaction, and risk-adjusted resource utilization of part-time and full-time PCPs. DESIGN: Retrospective cohort study. SETTING: Boston. PARTICIPANTS: PCPs affiliated with 2 academic outpatient primary care networks. MEASUREMENTS: PCP productivity, patient satisfaction, resource utilization, and compliance with screening guidelines. RESULTS: Part-time PCP productivity was greater than that of full-time PCPs (2.1 work relative value units (RVUs)/bookable clinical hour versus 1.3 work RVUs/bookable clinical hour, P< .01). A similar proportion of part-time PCPs (80%) and full-time PCPs (75%) met targets for mammography, Pap smears, and cholesterol screening (P =

.67). After adjusting for clinical case mix, practice location, gender, board certification status, and years in practice, resource utilization of part-time PCPs (138 dollars [95% confidence interval (CI), 108 dollars to 167 dollars]) was similar to that of full-time PCPs (139 dollars [95% CI, 108 dollars to 170 dollars], P = .92). Patient satisfaction was similar for part-time and full-time PCPs. CONCLUSIONS: In these academic primary care practices, rates of patient satisfaction, compliance with screening guidelines, and resource utilization were similar for part-time PCPs compared to full-time PCPs. Productivity per clinical hour was markedly higher for part-time PCPs. Despite study limitations, these data suggest that academic part-time PCPs are at least as efficient as full-time PCPs and that the quality of their work is similar.

Ferrier B, Woodward C, Cohen M, Williams P. The employed spouse: impact on physicians' career and family decisions. Centre for Health Economics and Policy Analysis Working Paper 96-21, September, 1996.

As more women acquire professional qualifications, the numbers of couples in which both spouses are professionals will increase. All physicians living in Ontario who had been certified in family medicine between 1989 and 1991, after completing a residency, were surveyed in the autumn of 1993. Seventy percent responded. Among those married, the husbands and wives were equally likely to be professionally qualified (80%). Relationships between spouses' professional status and employment levels (full-time, part-time, not employed) and some characteristics of the physicians were found. However, among these couples, in which dual-careers predominated, traditional roles were substantially retained, particularly when there were children in the households, although there is evidence that some role adaptations had occurred. While it is typical that the women in the couple reduced the time she spent in paid employment, it does not appear that the men physicians in the group studied were undertaking many additional income-generating activities to compensate for their wives' lower income. The preponderance of dual-career couples in this cohort may suggest a further increase in geographic disparities in physician distribution.

Gjerberg E. Medical women -- towards full integration? An analysis of the specialty choices made by two cohorts of Norwegian doctors. Social Science & Medicine. 52(3):331-43, 2001 Feb.

In Norway, as in most Western countries, doctors' choice of specialty has been strongly gendered. Female physicians have tended both to specialise to a lesser degree and to enter other specialties than male colleagues. In spite of the increase of women in medicine, previous studies have not managed to show any changes in this pattern. Comparing data from two cohorts of Norwegian doctors, authorised in 1970-73 and 1980-83 respectively, this article demonstrates that changes are in fact taking place. The changes are, however, not unequivocal. Firstly, women in these cohorts specialise to a very high degree and just as much as their male colleagues. Secondly, women doctors of the 1980s cohort spread their choice of specialisation over more fields than their predecessors did. They have, for example, started to enter surgery, although still not as often as men. Thirdly, proportionally more doctors of the 1980s cohort than the 1970s cohort have chosen general practice as their main specialty, and this applies to both women and men. Fourthly, there are tendencies towards an increasing concentration of women in some disciplines such as obstetrics and gynaecology, as well as paediatrics. More than ¾ of female specialists indicated that it is difficult to combine specialization with family responsibilities. These changes

in doctors' pattern of specialisation are discussed as consequences of socially shaped individual preferences, structural aspects of the Norwegian health system and the existence of gendered closure mechanisms within specific medical fields. Although the medical profession still appears as a gender differentiated community, the article gives a more dynamic and in some respects a more optimistic picture than earlier studies.

Gjerberg E, Kjolsrod L. The doctor-nurse relationship: how easy is it to be a female doctor co-operating with a female nurse? Soc Sci Med. 2001 Jan;52(2):189-202.
The doctor-nurse relationship has traditionally been a man-woman relationship. However, in recent years, the number of women studying medicine has increased in all West-European countries, and in 1997, 29% of active Norwegian doctors were women. The doctor-nurse relationship has often been described as a dominant-subservient relationship with a clear understanding that the doctor is a man and the nurse is a woman. This article examines what happens to the doctor-nurse relationship when both are women: how do female doctors experience their relationship to female nurses? It is based on two sets of data, qualitative interviews with 15 doctors and a nationwide survey of 3589 doctors. The results show that in the experience of many doctors, male and female, the doctor-nurse relationship is influenced by the doctor's gender. Female doctors often find that they are met with less respect and confidence and are given less help than their male colleagues. The doctors' own interpretation of this is partly that the nurses' wish to reduce status differences between the two groups affects female doctors more than male, and partly that there is an "erotic game" taking place between male doctors and female nurses. In order to tackle the experience of differential treatment, the strategies chosen by female doctors include doing as much as possible themselves and making friends with the nurses. The results are considered in light of structural changes both in society at large and within the health services, with emphasis on the recent convergence of status between the two occupational groups.

Gross EB. Gender differences in physician stress: why the discrepant findings? Women Health. 1997;26(3):1-14.
Studies investigating sources of occupational stress as perceived by male and female physicians in the United States, Canada, and Britain are reviewed. Since men and women experience different conditions of work, such as career and opportunity structures, power, and benefits, gender differences in physician stress would be expected. However, studies in all three countries reveal ambiguous findings, some discovering gender-specific sources of stress among physicians and some not. An explanation for these contrasting results is found in the methodology, especially in how sources of stress were measured. Gender differences surfaced only where open-ended questions were asked, whereas none were found when stress inventories were used. Because much occupational stress research, including that on physicians, is based upon male or predominantly male populations, results do not necessarily apply to women. To solve pragmatic problems of stress on the job, measures of work stress unique to women need to be developed and systematically explored.

Healy J. Mckee M. Health sector reform in central and eastern Europe: the professional dimension. Health Policy & Planning. 12(4):286-95, 1997 Dec. Policy Studies Institute, London, UK.
The success or failure of health sector reform in the countries of Central and Eastern Europe depends, to a large extent, on their health care staff. Commentators have focused on the

structures to be put in place, such as mechanisms of financing or changes in ownership of facilities, but less attention has been paid to the role and status of the different groups working in health care services. This paper draws on a study of trends in staffing and working conditions throughout the region. It identifies several key issues including the traditionally lower status and pay of health sector workers compared to the West, the credibility crisis of trade unions, and the under-developed roles of professional associations. The section dealing with the position of women discusses the fact that although the majority of doctors are women, they are still concentrated in low status posts in primary care, where their roles are very limited. Combining family and career are made very difficult with the loss of a support system, low salaries and discriminatory practices surrounding female physicians.

Harari E. The doctor's troubled marriage. Aust Fam Physician 1998 Nov;27(11):999-1004.
BACKGROUND: Reports about the health of doctors have included claims of an increased risk of unhappy marital and family relationships. Recent studies cast doubt on these pessimistic conclusions but certain patterns of troubled marriages seem to exist, as do certain stressors, to which doctors may be particularly susceptible. Especially for doctor doctor marriages, in which half of female physicians participate. OBJECTIVE: To describe the individual and interpersonal dynamics of problematic marriages commonly encountered among medical practitioners and to review some common stressors in medical marriages in general. DISCUSSION: Three commonly encountered patterns of troubled marriages are described and the ways they develop in the context of medical training and practice. The large increase in the number of women doctors in the past 20 years has brought new challenges to women and men seeking to balance their family and professional commitments. Often physicians marry to cope with the heavy burdens of medical school, but then once they graduate, they no longer share any common ground. Female physicians in dual physician marriages are also more likely to work part-time or choose a generalist career.

Johnston MT. Goin' to the country: challenges for women's health care in rural Canada. CMAJ 1998 Aug;159(4):339-41.
One third of Canadians live in rural settings, half of which are women. These Canadians produce 40% of the gross national product but receive only 10% of services in health and education. A study conducted in Ontario indicated that 30% of the population, but only 11% of physicians were rural. Large number of women graduating medical school shun rural practice, therefore the under-supply of women in rural medicine is greater than that of men. Article written from the point of view of Dr. Johnston, and she indicates that initially her patient load was 2000, with over 100 obstetrics cases per year, a 100-hour work and an on-call schedule of 1 in 4 or 1 in 6. Although rural women cannot afford the time or the money to travel to a female physician, they still prefer one for pelvic exams and treatment of gynecological problems. Underserviced areas require physicians to attend primarily to serious and urgent problems. The physician has a higher patient load, greater proportion of patients needing acute care and less time per patient. Author has begun giving 2-hour lectures to groups of 100-200 women in rural communities on topics related to "women's health". Suggestions for improvement include encouraging rural women to consider medicine as a career, adding additional training and encouragement in ob/gyn, breast and endometrial biopsy and pediatrics as they see more women and children and retaining them through continuing medical education relevant to rural practice.

Knaul F, Frenk J, Aguilar AM. The gender composition of the medical profession in Mexico: implications for employment patterns and physician labor supply. J Am Med Womens Assoc 2000 Winter;55(1):32-5.
The gender composition of the medical profession is changing rapidly in many parts of the world, including Mexico. We analyze cross-sectional and longitudinal data on sex differences in physician employment from household employment surveys. The results suggest that Mexico is a particularly interesting example of the feminization of physician employment. Female enrollment in medical school increased from 11% in 1970 to about 50% in 1998. The increased participation of women in medicine seems to be accompanied by differences in employment patterns that could generate significant reductions in the total supply of physician hours of service. Women physicians are unemployed at a much higher rate than men and hence account for half of underused physician human capital. The results suggest that improved educational opportunities do not translate automatically into equal employment opportunities.

Kunda, Z. (1999). Social cognition: Making sense of people. Cambridge, MA: MIT Press.
How do we make sense of other people and of ourselves? What do we know about the people we encounter in our daily lives and about the situations in which we encounter them, and how do we use this knowledge in our attempt to understand, predict, or recall their behavior? Are our social judgments fully determined by our social knowledge, or are they also influenced by our feelings and desires? Social cognition researchers look at how we make sense of other people and of ourselves. In this book Ziva Kunda provides a comprehensive and accessible survey of research and theory about social cognition at a level appropriate for undergraduate and graduate students, as well as researchers in the field. Chapter 8 addresses the topic of stereotypes.

Lent, B, Phillips, SP, Richardson, B, Stewart, D. Promoting parental leave for female and male physicians. CMAJ 2000;162(11):1575-76.
Summary: Efforts to increase parental leave should be encouraged to facilitate the efforts of both women and men to balance work and family responsibilities. Current arrangements for parental leave vary considerably between institutions, with disagreement about renumeration and temporary replacements. Men and women who took parental leave report it having a negative impact on their academic work and the workloads of their colleagues.

Limacher MC. Zaher CA, Walsh MN, Wolf WJ, Douglas PS, Schwartz JB, Wright JS, Bodycombe DP. The ACC professional life survey: career decisions of women and men in cardiology. A report of the Committee on Women in Cardiology. American College of Cardiology. Journal of the American College of Cardiology. 32(3):827-35, 1998 Sep.
OBJECTIVES: This survey was conducted to learn how the career decisions of women and men in cardiology influenced their professional and personal lives. BACKGROUND: Women represent only 5% of practicing adult cardiologists and 10% of trainees. Yet, women and men now enter medical school at nearly equal numbers. The factors that contribute to career satisfaction in cardiology should be identified to permit the development of future strategies to ensure that the best possible candidates are attracted to the profession. METHODS: A questionnaire developed by the Ad Hoc Committee on Women in Cardiology of the American College of Cardiology (ACC) was mailed in March 1996 to all 964 female ACC members and an age-matched sample of 1,199 male members who had completed cardiovascular training. RESULTS: Cardiology has one of the lowest percentages of female trainees, along with throacic and orthopedic surgery.

Women were more likely to describe their primary or secondary role as a clinical/noninvasive than invasive cardiologist ($p < 0.0001$ women vs. men). Men and women both reported a high level of satisfaction with family life, but women were less satisfied with their work as cardiologists (88% vs. 92%, $p < 0.01$) and with their level of financial compensation. Compared with men, women expressed less overall satisfaction (69% vs. 84%) and more dissatisfaction with their ability to achieve professional goals (21% vs. 9%). These differences were most pronounced for women in academic practice. Women reported greater family responsibilities, which may limit their opportunities for career advancement. Women were more likely to alter training or practice focus to avoid radiation. A majority of women (71%) reported gender discrimination, whereas only 21% of men reported any discrimination, largely due to race, religion or foreign origin. CONCLUSIONS: Women cardiologists report overall lower satisfaction with work and advancement, particularly within academic practice. They report more discrimination, more concerns about radiation and more limitations due to family responsibilities, which may ultimately explain the low percentage of women in cardiology. Attention to these issues may result in programs to improve professional satisfaction and attract the best candidates into cardiology in the future.

Linzer M. McMurray JE. Visser MR. Oort FJ. Smets E. de Haes HC. Sex differences in physician burnout in the United States and The Netherlands. Journal of the American Medical Womens Association. 2002;57(4):191-3.
OBJECTIVE: to determine if there are sex differences in physician burnout in the Netherlands and, if not, to explore why they are present in the United States. METHODS: Separate physician surveys were conducted in the United States (n=2326) and the Netherlands (n=1426). Thirty-three percent of US respondents were female (adjusted response rate 52%); 18% of Dutch respondents were female (adjusted response rate 63%). Standardized mean sex differences (effect sizes) in burnout variables were calculated and compared crossnationally. RESULTS: US women experienced more burnout than US men did (28% v 21%, $p<.01$), but the sex difference in burnout among Dutch physicians was not significant. Women in both countries worked fewer hours than men did (48 v 56 US, 44 v 56 NL, difference in effect sizes of sex differences between US and NL, $p<.001$). Although women in both countries described less work control than men, the effect size of the sex difference in the United States was more than twice that in the Netherlands (.34 US v .15 NL, $p<.01$). Children, home support, and work-home interference were comparable between sexes in the United States. CONCLUSIONS: Gender parity in physician burnout in the Netherlands may be due to fewer work hours and greater work control of women compared to those in the United States.

Littlewood J, Beer N, Lazou E, Webb E, Saunders M. Against women: are we looking after our general practitioners? GPs' views of the 1990 part-time contract. Journal of the Royal Society of Health 1999;119(2):85-8.
A postal survey was conducted looking at the roles and experiences of General Practitioners on part-time contracts. This involved their perception of the attitudes of their colleagues and patients to their part-time status, and the consequences of these for their professional development. Of the 130 General Practitioners with part-time contracts in the one Regional Health Authority that was being surveyed 77.7% responded; 74.3% of the respondents were women. Of the women General Practitioners who responded to this particular question, the predominant age-

bands were 31-40 years [41.4% (41)] and 41-50 [19.2% (19)], whilst male General Practitioners were more evenly spread across the age bands. The results showed that the majority of General Practitioners took up part-time contracts to enable them to look after their dependants, though a sizeable minority wished for free time or to relieve stress from a full-time contract. Forty percent said that they felt excluded from decision making about continuity of patient care and practice policy. Just under forty percent also stated that their workload was excessive in comparison with their full-time counterparts. Further, many expressed the opinion that they were financially penalised. The cost effective correlation between the increased availability of General Practitioners (particularly women) for patient care, and the costly medical education and training of such General Practitioners not being 'wasted' for several years was also noted together for the need for ongoing (or continual) medical education and training. The findings of this survey suggest there are many unresolved issues involved in satisfactory part-time contracting arrangements for General Practitioners. This particularly affects women General Practitioners. Whilst the RCP policy statement addresses education and training for general practice, the question of not losing out in relation to training opportunities and promotion is not addressed. The unresolved effects of the intra-professional differences in opportunities may affect the inter-professional functioning of the primary health care team and ultimately continuity and quality of care for patients.

McMurray JE. Cohen M. Angus G. Harding J. Gavel P. Horvath J. Paice E. Schmittdiel J. Grumbach K. Women in medicine: a four-nation comparison. Journal of the American Medical Women's Association. 2002;57(4):185-90.

OBJECTIVES: to determine the impact of increasing numbers of women in medicine on the physician work force in Australia, Canada, England, and the United States. METHODS: We collected data on physician work force issues from professional organizations and government agencies in each of the 4 nations. RESULTS: Women now make up nearly half of all medical students in all 4 countries and 20% to 30% of all practicing physicians. Most are concentrated in primary care specialties and obstetrics/gynecology and are underrepresented in surgical training programs. Women physicians practice largely in urban settings and work 7 to 11 fewer hours per week than men do, for lower pay. Twenty percent to 50% of women primary care physicians are in part-time practice. CONCLUSIONS: Work force planners should anticipate larger decreases in physician full-time equivalencies than previously expected because of the increased number of women in practice and their tendency to work fewer hours and to be in part-time practice, especially in primary care. Responses to these changes vary among the 4 countries. Canada has developed a detailed database of work/family issues; England has pioneered flexible training schemes and reentry training programs; and Australia has joined consumers, physicians, and educators in improving training opportunities and the work climate for women. Improved access to surgical and subspecialty fields, training and practice settings that provide balance for work/family issues, and improved recruitment and retention of women physicians in rural areas will increase the contributions of women physicians.

Mitka M. What lures women physicians to practice medicine in rural areas? JAMA 2001;285(24):3078-9.

Kathleen E. Ellsbury (associate professor in the Dept. of Family Medicine at the University of Washington School of Medicine) gave a presentation called "Gender Related Factors in the

Recruitment of Generalist Physicians to the Rural Northwest" at the National Rural Health Association's Annual conference. When choosing rural practice W have diff priorities than M. W consider: employment opportunities for spouse or partner, availability of child care, flexible scheduling opportunities, and the interpersonal skills of the recruiter, such as honesty and avoiding "hardball" sales pitches. 1998 89.2% of all physicians worked in metropolitan areas- up to 86.9% in 1980. Among general practitioners and family physicians, 75% practiced in metropolitan areas in 1998 vs. 68.8% in 1980
This means 11% of physicians are treating the 20% of US population living in rural areas, and only 13% of these physicians are women, compared to 19% female representation in urban centers. Ellsbury collected survey data and found that 58% were interested in spouse employment opportunities vs. 26% of their male colleagues. 66% of women were interested in flexible hours vs 25% of men. 33% of women were concerned with child care availability vs 14% of men. Males who answered the survey worked 49 hrs/wk and the F were working 41 hrs/wk For both M and W community factors were most important influence in decision making followed by facility and medical partners. We also had more concerns about poor collegial interactions and feeling isolated in rural areas, and the recruiting style was also very imp to them (ie. good follow through in recruitment efforts and attention to good interpersonal skills in recruitment, honesty, fairness, etc)

Moodley K, Barnes JM, de Villiers PJ. Constraints facing the female medical practitioner in private family practice in the Western Cape. S Afr Med J 1999 Feb;89(2):165-9.
OBJECTIVES: To assess the existence and extent of employment-related problems facing female family practitioners in the context of a rapidly growing number of female doctors in South Africa. SUBJECTS AND METHODS: A descriptive survey was conducted using bilingual questionnaires. These were posted to all 280 female family practitioners in private practice in the Western Cape. RESULTS: Of the 280 questionnaires posted 169 were returned, but 45 of these were missampled. A response rate of 53% was obtained. The largest age category was 30-39 years. Of those not in solo practice, 68 (75%) were able to negotiate the terms of their working hours, 13 (19%) negotiated sick leave on commencing work, and only half had paid leave. Vacation leave was negotiated by 34 (50%), while only 6 (9%) discussed maternity leave with employers or colleagues. Of the 124 practices included in the survey, 6 (5%) had formal arrangements to cope with maternity leave. One hundred and seven respondents (86%) felt there was a need for maternity leave guidelines in the private sector in South Africa. Regarding practice-related problems, 33 female family practitioners (27%) reported some incidents of sexual harassment by patients. Despite these constraints, 88 respondents (71%) planned to continue working in this field. CONCLUSION: Definite obstacles exist in private family practice with regard to working conditions, in particular the lack of national regulations regarding maternity leave and the absence of legislation on pregnancy discrimination. This has important implications for the inclusion of female doctors in group practices and managed health care organisations--private primary health care of the present and future!

Murray, A, Gelb Safran, D, Rogers, WH, Inui, T, Chang, H, Montgomery, JE. Part-time Physicians: Physician Workload and Patient-Based Assessments of Primary Care Performance. Arch Fam Med 2000;9:327-32.

Objective To examine the relationship between the number of hours physicians work and patients' assessment of the physician. Design Cross-sectional study with physician and patient surveys. Setting Primary care practices in Massachusetts. Participants A random sample of 6810 Massachusetts state employees in 15 different health plans. Main Outcome Measures Eleven summary scales measuring 7 essential elements of primary care. Information was derived from the Primary Care Assessment Survey, a validated patient-completed questionnaire. Results Physicians were classified into 3 groups according to their reported hours of work: "overtime" (>65 h/wk), "full time" (40-65 h/wk), and "part time" (<40 h/wk). There was no statistically significant difference between the 3 groups of physicians in 10 of the 11 measures of primary care performance. Physicians who worked more than 65 hours per week were found to score significantly higher in the visit-based continuity of care category than physicians working fewer hours. Physicians working more than 65 hours per week were also found to be significantly less satisfied with the amount of time they had for family and personal life than the other 2 groups. Conclusions Part-time physicians perform as well as full-time physicians in most aspects of primary care, including all interpersonal aspects of care, as reported by patients. Patients of physicians working more than 65 hours per week experienced higher levels of visit-based continuity of care than patients of physicians working fewer hours, but this appears to carry a cost to those physicians in the area of personal and professional satisfaction. Subsequent research should examine the relationship between physician workload and technical aspects of care.

Nasser S, Baligh R. Egyptian medical women, past and present. J Am Med Women's Assoc 2000 Winter;55(1):36, 44.

In ancient Egypt, at least one woman carried the title of physician. University education for women started in 1930. Until recently women were only allowed to be trained in medicine and pediatrics, but not surgery, orthopedics, neurosurgery, cardiac surgery or otolaryngology. Today, women are eligible to practice in all disciplines of medicine although because of inadequate support systems, some female physicians find it necessary to stop working to care for their young children, which potentially reduces their career opportunities. Egyptian medical women represent 35% to 45% of the staff of faculties of medicine and about one-third of all medical graduates. They have contributed to the improvement of health, particularly in maternal and child health, and are role models for young girls in rural areas.

Nicholls S. Maternity Leave, the mother of all challenges for female MDs. The Medical Post: Features. p19, 21. Ontario, Canada. February 4, 2003.

Discusses the difficulties that arise when female residents and physicians become pregnant. Several case studies depicting the difficulties in finding a suitable locum and the financial loss that is incurred when one is not found. Only 5 provinces offer maternity benefits to fee-for-service physicians (Nova Scotia, Ontario, Manitoba, British Columbia offer to all and Quebec offers only to GPs). Physician shortage is making it very difficult to find coverage for absences. Discusses new trend of part time residency and the need for some compromise between career and family.

Notzer N, Brown S. The feminization of the medical profession in Israel Medical Education. 29(5):377-81, 1995 Sep.
Two factors have caused major changes in the gender composition of the Israeli medical profession in recent years: (i) a wave of immigration from the former USSR, which increased the doctor population by approximately 70% and which included a majority of women physicians, and (ii) the entry of more Israeli women into medical school. This report presents the current gender status of the Israeli medical profession, regarding students and physicians, and the choice of medical specialty and academic seniority, and compares gender differences in Israel with those in other countries. Traditional patterns of specialization persist in Israel, with women still concentrated in primary care (family medicine, paediatrics and psychiatry). In addition, women still face obstacles in entering the more prestigious (mainly surgical) specialties. Whilst the number of women in academic medicine has increased over the last decade, women are still concentrated in the lowest echelons of academic medicine. However, the steady trend towards the feminization of medicine will inevitably lead to an increase of women in all areas of the medical profession. Because cross-cultural studies have repeatedly revealed that women doctors have a more humanistic and personalized approach to patient care, a higher ratio of women in the profession should have a qualitative effect in this direction, despite the bureaucratic and fiscal constraints incumbent upon practising doctors. As more women become role models for medical students, their approach will influence the education of the doctors of the future.

Phillips, SP, Schneider, MS. Sexual harassment of female doctors by patients. N Eng J Med 1993;329:1936-9.
BACKGROUND. Sexual harassment within the doctor-patient relationship is typically discussed in terms of male doctors harassing female patients. We investigated the sexual harassment of female doctors by patients. METHODS. Surveys were mailed to a random sample of 599 of the 1064 licensed female family physicians in Ontario, Canada. Respondents were asked about their experiences of sexual harassment by either male or female patients and about the nature and frequency of harassing behavior. Suggestions for prevention were requested. RESULTS. Seventy percent (422) of the questionnaires were completed and returned. More than 75 percent of the respondents reported some sexual harassment by patient at some time during their careers. Physicians had been harassed most often in their own offices and by their own patients. However, in settings such as emergency rooms and clinics, unknown patients presented a proportionately higher risk. The physicians' perceptions of the seriousness of the problem varied with the frequency and severity of the incidents. CONCLUSIONS. Sexual harassment of female doctors appears to occur frequently, and it is therefore an important topic to address in medical school and professional development.

Phillips SP, Richardson B, Lent B. Medical Faculty's Views and Experiences of Parental Leave: A collaborative study by the Gender Issues Committee, Council of Ontario Faculties of Medicine J Am Med Women's Assoc 2000 Winter;55(1):23-6.
OBJECTIVES: To examine medical faculty's actual and ideal parental leave arrangements with the aim of informing policy decisions. Leave lengths, effect on career, financial arrangements, and availability of temporary replacements were explored. METHODS: All medical faculty (6387) in Ontario, Canada were surveyed by mail and asked about parental leave experiences since 1990. Responses of men and women were compared as were those of leave takers and the entire group.

RESULTS: Thirty-two percent (n = 996) of the 3107 respondents were women and 68% (n = 2067) were men. Ninety-eight percent (n = 317) of new mothers had taken maternity leave, while only 21% (n = 159) of new fathers had. Both paid and unpaid leave was generally shorter than that allowed by law or identified as ideal. Parental leave had a somewhat negative effect on the careers of all faculty. Women were more worried than men about the effect of their absence on colleagues' work and more generous with ideal leave length and funding. Temporary replacement of leave takers was central to an effective leave policy. CONCLUSIONS: Institutional and academic culture may cause new parents to take suboptimal leave despite legislation allowing more. A change in the work environment is required for medicine to offer its teachers what it teaches--that infants benefit from nurturing, nursing, and stability early in life.

Riska E. Towards gender balance: but will women physicians have an impact on medicine? Social Science & Medicine. 52(2):179-87, 2001 Jan.
The increasing numbers of women in medicine in western societies has raised the issue about their impact on medical practice. As a way of addressing the issue, this paper explores women's position in medicine in the Nordic countries, where the medical profession will soon be gender-balanced. Support for both a ghettoization (women are more likely to work in areas pretaining to the needs of children, such as pediatrics and child psychiatry, the needs of the elderly, such as geriatrics, or involving routine or subordinate work, such as radiology or anesthesiology respectively) and a vanguard argument for women physicians can be documented. The paper addresses the fact that women advance more slowly than men potentially because of the contribution of discriminatory practices within the profession. The final section offers three sociological perspectives--the socialization theory, the neo-Weberian, and the social constructionist--as theoretical explanations for the gender segregation of medicine and as diagnostic paradigms and potential heuristic devices to aid women's empowerment as medical providers.

Riordan DC. Interaction strategies of lesbian, gay and bisexual healthcare practitioners in the clinical examination of patients: qualitative study. BMJ. Doi:10.1136/bmj.38071.774525. EB (published 27 April 2004).
Objective To explore how lesbian, gay, and bisexual healthcare practitioners manage their identity in the clinical examination of patients. Design Qualitative study using grounded theory. Setting Hospital and primary health care. Participants 16 healthcare professionals who identified themselves as lesbian, gay, or bisexual, and are involved in the clinical examination of patients. Results Healthcare professionals engage in a complex interplay of identity management strategies to avoid homophobic abuse; as a signal of safety from homophobia and understanding for their lesbian, gay, and bisexual patients and as a desexualisation strategy principally for gay men and their women patients. Their training has not helped them deal with ethical and medicolegal anxieties. Conclusion In the light of new legislation, published guidelines will help training and governing bodies understand and help ameliorate the added pressures on their lesbian, gay, and bisexual students and medical staff.

Rosenfeld JA. Zaborlik PM. Comparison of female and male graduates of southern Appalachian family practice residencies. Tennessee Medicine 1996;89(11):407-9.
PURPOSE: One aim of Southern Appalachian family practice residencies is to produce graduates for surrounding physician-needy areas. Some evidence suggests that women are less

likely to go to rural areas and that they practice differently than men. This study investigated the practice patterns and location of Appalachian family practice residency female and male graduates. METHODS: Surveys were sent to graduates of seven family practice residencies from 1984 to 1994 in the Southern Appalachian area to determine practice patterns, locations, and reasons for choosing practices. RESULTS: Women were more likely than men to be single and not to have children. More women worked part-time. Women's and men's practice patterns and characteristics were similar except that women were more likely to provide prenatal care and do vaginal deliveries. Women in similar percentages practiced in small towns, and a greater percentage of women practiced in rural areas with populations of less than 2,500. CONCLUSIONS: Female family practice residency graduates from Appalachian residencies are fulfilling the purposes of their residencies as well as male graduates, although more of them are working part-time.

Rourke JTB. Politics of rural health care: recruitment and retention of physicians. CMAJ 1993;148:1281-4.

The shortage of physicians in underserviced areas has been defined, and the causative recruitment and retention factors have been identified. The CMA report provides a framework for understanding these factors. Many can be modified, but this requires cooperation between physicians, communities, hospitals, medical schools, medical associations and governments. The development of a rural-practice master plan in each province would facilitate this process.

Rourke JTB, Incitti F, Rourke LL, Kennard M. Keeping family physicians in rural practice. Solutions favoured by rural physicians and family medicine residents. Can Fam Physician 2003;49:1142-9.

OBJECTIVE To determine how family medicine residents and practising rural physicians rate possible solutions for recruiting and sustaining physicians in rural practice. DESIGN Cross-sectional mailed survey. SETTING Rural family practices and family medicine residency programs in Ontario. PARTICIPANTS Two hundred seventy-six physicians and 210 residents. MAIN OUTCOME MEASURES Ratings of proposed solutions on a 4-point scale from "very unimportant" to "very important." RESULTS Rural family physicians rated funding for learner-driven continuing medical education (CME) and limiting on-call duty to 1 night in 5 as the most important education and practice solutions, respectively. Residents rated an alternate payment plan to include time off for attending and teaching CME and comprehensive payment plans with a guaranteed income for locums as the most important education and practice solutions, respectively. CONCLUSION Residents and physicians rated solutions very similarly. A comprehensive package of the highest-rated solutions could help recruit and sustain physicians in rural practice because the solutions were developed by experts on rural practice and rated by family medicine residents and practising rural physicians.

Sasser, AC. Gender Differences in Physician Pay: Tradeoffs Between Career and Family. Journal of Human Resources 2005;40(2):477-504.

Summary: This paper analyzes how much of the gender earnings gap among physicians is due to women's greater family responsibilities. Women physicians earn 11 percent less for being married plus 14 percent less for having one child and 22 percent less for having more than one child. Before marrying/having children, women physicians who later become wives or mothers had higher earnings than those who remained single and childless, but sharply reduced their

hours of work after marrying/having children. The results suggest that these earnings gaps do not reflect adverse selection but rather individual choices given time constraints imposed by family responsibilities.

Sobecks NW, Justice AC, Hinze S, Chirayath HT, Lasek RJ, Chren MM, Aucott J, Juknialis B, Fortinsky R, Youngner S, Landefeld CS. When doctors marry doctors: a survey exploring the professional and family lives of young physicians. Ann Intern Med 1999 Feb 16;130(4 Pt 1):312-9.

BACKGROUND: Soon, half of all physicians may be married to other physicians (that is, in dual-doctor families). Little is known about how marriage to another physician affects physicians themselves. OBJECTIVE: To learn how physicians in dual-doctor families differ from other physicians in their professional and family lives and in their perceptions of career and family. DESIGN: Cross-sectional survey. SETTING: Two medical schools in Ohio. PARTICIPANTS: A random sample of physicians from the classes of 1980 to 1990. MEASUREMENTS: Responses to a questionnaire on hours worked, income, number of children, child-rearing arrangements, and perceptions about work and family. RESULTS: Of 2000 eligible physicians, 1208 responded (752 men and 456 women). Twenty-two percent of male physicians and 44% of female physicians were married to physicians ($P < 0.001$). Men and women in dual-doctor families differed ($P < 0.001$) from other married physicians in key aspects of their professional and family lives: They earned less money, less often felt that their career took precedence over their spouse's career, and more often played a major role in child-rearing. These differences were greater for female physicians than for male physicians. Men and women in dual-doctor families were similar to other physicians in the frequency with which they achieved career goals and goals for their children and with which they felt conflict between professional and family roles. Marriage to another physician had distinct benefits ($P < 0.001$) for both men and women, including more frequent enjoyment from shared work interests and higher family incomes. CONCLUSIONS: Men and women in dual-doctor families differed from other physicians in many aspects of their professional and family lives, but they achieved their career and family goals as frequently. These differences reflect personal choices that will increasingly affect the profession as more physicians marry physicians.

Starkey C, Chase C, Couture C and O'Hagan D. Part time family physicians: A positive asset. 1997.

With "normal" working weeks in family practice in the range of 70+ hours, increasing awareness of the levels of stress and risk to mental health of being a health professional, increasing recruitment problems in some areas and an increasingly female output from medical schools the time may have come to consider more flexible work schedules for the benefit of all. Working less than full time in medicine traditionally carries a stigma associated with poor commitment to ones patients, colleagues and career as well as ineffective use of training and skills. This study set out to explore attitudes of the family doctors towards part timers who work with them in order to establish the benefits of part timers to the practices who employ them. Following a literature review, a qualitative pilot study involving semi-structured interviews of full time colleagues of part timers in non-academic family practices was conducted in three areas of Canada with a total of 12 interviewees. Results were collected to establish patterns of attitudes, from which work can be done to raise the professional image of part time work from "hobby" to career. Results show

that there are benefits to the practice as well as the individual of working part time, and these should be publicized widely to encourage use of more flexible patterns for all family doctors.

Strasser R, Kamien M, Hays R. National Rural General Practice Study: Quality of Life. Monash University Centre for Rural Health, General Practice Evaluation Program, December 1997.

This paper explores aspects of the quality of life priorities and satisfactions experienced by general practitioners in rural and remote areas of Australia, with emphasis on gender, age and location differences (rural vs. remote). The participants had a list of 28 items relating to aspects of quality of life, and were asked to indicate on a 7-point scale the level of importance they ascribed to each item (priorities) and the level of satisfaction they experienced with each item (satisfaction). Women doctors generally had higher ratings of importance of peer support than male doctors, and a lower rating of importance for services provided. Women doctors also had higher satisfaction in family and social environments, peer support, physical location and non- clinical work, whereas men doctors had significantly higher satisfaction with services provided and work conditions. High satisfaction rates for the women currently in rural practice might be due to their preference for holistic, preventative and community-based medicine, the opportunities for spouses and availability of childcare. Hypothesized reasons why it is difficult to attract women doctors to rural practice is that rural practice is characterized by longer working hours (working hours is an important item for women doctors), a greater variety of skills and services (which a higher proportion of women doctors do not consider an important item), and poor availability of locum relief (e.g., maternity leave). It is recommended that women doctors could be attracted to rural areas by programs or practice models that emphasize peer support.

Stein LI, Watts DT, Howell T. The doctor-nurse game revisited. New Engl J Med 1990;322:546-9.

The author coined the term "the doctor-nurse game" in 1967, and in this article provides a commentary on the state of relationships between doctors in nurses in 1990 compared to three decades earlier. It is generally observed that nurses have become less subservient as they acquire higher education, gain professional autonomy, and the prestige of physicians declines in society. Nurses more recently take on decision-making roles regarding patients and work in more interdisciplinary teams with physicians and other professionals.

Tesch BJ, Osborne J, Simpson DE, Murray SF, Spiro J. Women physicians in dual-physician relationships compared with those in other dual-career relationships. Acad Med 1992 Aug;67(8):542-4.

This study compared the career and domestic responsibilities of women physicians whose domestic partners were physicians (WP-Ps) with those of women physicians whose domestic partners were not physicians (WP-NPs). They hypothesize that soon half of al female physicians will be involved in medial marriages. In 1988 the authors surveyed 602 women physicians in a large midwestern city regarding their career and domestic roles; 390 were physicians in training (students and residents), and 212 were physicians in practice (academic medicine and private practice). Overall, 382 (63%) responded; of the 382, 247 (65%) had domestic partners; of these 247, 91 (37%) were WP-Ps and 156 (63%) were WP-NPs. The WP-Ps were found to be twice as likely as the WP-NPs to interrupt their careers to accommodate their partners' careers. The WP-Ps also assumed significantly more domestic responsibilities and worked fewer hours practicing

medicine than did the WP-NPs. The 163 women physicians in training (44-48%-of the WP-Ps and 119-76%-of the WP-NPs) demonstrated a more egalitarian division of labor overall, with no significant differences between the WP-Ps and the WP-NPs. The authors recommend that longitudinal studies be undertaken to determine whether women physicians in training continue this trend as they enter the practice of medicine.

Tolhurst HM, Talbot JM, Baker LL. Women in rural general practice: conflict and compromise Med J Aust 2000 Aug;173(3):119-20.
An editorial based on recruiting and retaining women in rural medicine in Australia. Currently 50% of Australian medical graduates are women but only 19% of female GPs (vs. 23% male GPs) practice in rural areas. 27% of Australian population lives in these areas. This limits females from having access to female practitioners. Through a pilot study in 1997, they determined role conflict is a greater problem for female than male rural doctors (although this changes depending on who assumes the primary child care role), and that remoteness, social isolation and safety issues affect female doctors decisions' about practising in rural areas. The article provides suggestions for change, particularly more flexible childcare services and financial subsidies for childcare, childcare for continuing medical education programs, support and email chat groups for female rural doctors, sensitive education with respect to gender in undergraduate and postgraduate training, involvement of Divisions of General Practice in improving the availability of health services for rural doctors. They also suggest more adequate workplace security at a local and regional level, especially for after-hours services, suitable continuing medical education programs for female rural doctors that reflect their practice content and retraining for rural female doctors returning to the workforce.

Vroom TM. Women and part-time employment in the medical profession. [Dutch] Nederlands Tijdschrift voor Geneeskunde 1999;143(22):1167-71.
During a conference of this journal the following matters were raised: (a) part-time work in medicine, although generally accepted socially for men and women is not precisely advisable for those who want to move up to higher functions; (b) owing to the long duration of medical studies, physicians are late to marry and raise a family; (c) the ambition of medical women, amply present at the medical finals, often proves to extend no further than pregnancy; (d) the career of female doctors shows a kink caused mostly by family duties and inadequacy of day nurseries; (e) the current excessive workload of (senior) medical functionaries reduces many women's ambition to attain such functions. Women who want to study medicine should consider much earlier than is nowadays the case what they want and can become within the limits of their possibilities in the wide field of medicine. Energetic striving for shortening of the training period may result in earlier fulfilment of the wish to have children.

Wainer J, Chesters J. Rural mental health: neither romanticism nor despair. Aust J Rural Health. 2000 Jun; 8(3): 141-7.
This paper explores the relationship between rural places and mental health. It begins with a definition of mental health and an outline of the data that have led to the current concern with promoting positive mental health. We then consider aspects of rural life and place that contribute to positive mental health or increase the likelihood of mental health problems. Issues identified include environment, place, gender identity, violence and dispossession and the influence of the effects of structural changes in rural communities. The paper concludes with a discussion of some

of the determinants of resilience in rural places, including social connectedness, valuing diversity and economic participation

Wainer J, Bryant L, Strasser R, Carson D, Stringer K. A Life, not a Wife. Gender Issues in Rural Medical Practice. Monash University. 2002. Available on line at: www.med.monash.edu.au/gendermed/docs/joalifenotawifeadelaide.rtf
Women outnumbered men, making up 50.8% of the medical students in Australia in 1999. Although they are making up in numbers, the medical system still does not represent equality between the sexes, and is still a masculine discipline. The challenge lies in incorporating the knowledge, culture and experience of women into thought systems and knowledge structures, such as medicine, which has developed without their input. Rural medicine, being the only branch of medicine with a shortage of applicants, is an area that women can enter and potentially change. The Australian culture is manifestly masculine and can be a dangerous place for women, young women in particular. For some young women recruited into medicine from rural communities, the experiences they have had have left them so angered that a lot of trust-building will have to occur before they will go back. Existing rural practice models do not encourage or even permit the different practice patterns of males and females. Communities, medical colleges, the Australian College of Rural and Remote Medicine, training programs and individual practices need to make the decision to permit and encourage a range of ways of practicing rural medicine, and to promote this decision to the next generation of young doctors.

Wainer J. for the Working Group of the Wonca Working Party on Rural Medicine. Draft Policy for Female Family Physicians in Rural Practice. 2002. http://www.globalfamilydoctor.com/aboutWonca/working_groups/rural_training/women/Draft_Policy_for_Women_in_Rural_Practice.htm

Wallace AE. Weeks WB. Differences in income between male and female primary care physicians. Journal of the American Medical Women's Association. 2002;57(4):180-4.
OBJECTIVES: to determine whether sex differences in income persist among primary care physicians in light of the increasing proportion of women entering the field. METHODS: We obtained sex- and age-specific self-reported data from the American Medical Association's annual survey of physicians to determine the annual income, annual income per hours worked, proportion of time in direct patient care, and outpatient productivity for family practice physicians, general internists, and pediatricians between 1989 and 1998. We compared female to male results for respondents in the 36- to 45-year-old age group as well as for the age-weighted gender aggregate. Results: Female primary care physicians reported lower annual incomes (between 60% and 85% of those of their male counterparts) and lower incomes per hours worked (between 71% and 98% of those of their male counterparts). The income disparities decreased during the 10 years, at a rate of about 1% per year on average. Although the proportion of time female physicians spent in direct patient care activities was similar to that of their male counterparts, female physicians saw substantially more patients per office hour (about 17% more, on average, over time). CONCLUSIONS: Gender inequities persist in the incomes of primary care physicians. Although the disparities appear to be decreasing, female primary care physicians' increased productivity compared with men's suggests that these inequities are perpetuated in more subtle ways and warrant immediate examination and remediation.

Wear, D, Keck-McNulty, C. Attitudes of Female Nurses and Female Residents Toward Each Other: A Qualitative Study in One U.S. Teaching Hospital. Acad Med 2004;79(4):291-301.
PURPOSE: To describe the attitudes of female nurses and female resident physicians toward each other in surgery, internal medicine, obstetrics-gynecology, and emergency medicine in one Midwest teaching hospital in the United States. METHOD: Using a qualitative methodology, 51 women were interviewed in 2002: 28 nurses and 23 residents. Questions were asked to determine if and how female nurses and female residents believed gender was a factor in their interprofessional relationships, how each described their relationship with the other, the kind of assistance female nurses provide to female residents, the kind of assistance sought by female residents, and the strengths and challenges of the female nurse-female resident relationship. Data were analyzed using NUD*IST software. RESULTS: Consistent with similar studies conducted in Norway and Australia, the results include the following: For female nurses, occupation is secondary to gender, which is to say that gender is the most important link between female nurses and female residents. For female residents, gender is secondary to occupation/occupational status. CONCLUSIONS: With the number of female residents increasing each year in hospitals, this relationship should be further examined so that dysfunctional communication patterns between the two groups can be challenged.

Williams AP, Woodward CA, Ferrier B, Cohen M. Cohort, gender and practice organization: examining the bounds of collaborative medicine among newly established female and male family physicians in Ontario. Health Serv Manage Res. 1997 May;10(2):121-31
This paper analyzes data from a 1993 survey of 395 newly established female and male family physicians in Ontario, Canada, to examine the relationship between practice organization and gender. Previous research suggests that younger physicians, particularly women, tend to enter group practice. Compared to solo practice, groups may offer more predictable incomes, more manageable workloads, peer collaboration and review, and economies of scale. Further, female physicians in groups may develop distinctive styles of collaborative medicine. The results show that a majority of physicians in our cohort are in private community-based group practice. However, while many groups share premises, staff and expenses, and many have common charts and practice guidelines, only a minority incorporate regular meetings to discuss business or patient care, have shared care of hospitalized patients, or audits of physicians' practices. Few gender differences are observed in private group practice: although women physicians attract larger proportions of female patients than do their male colleagues, women and men organize their groups in similar ways and have similarity strong patient-centered attitudes.

Women Physicians' Issues Committee of the Canadian Medical Association. Women in Medicine: A Review of the Evidence. Nov 1999
This report was put together to review and synthesise information and data regarding the role of women in medicine as physicians, members of organised medicine and leaders in Canada. The report also looks at the policies and actions proposed to enhance the representation of women in organised medicine and specifically at enhancing their role as leaders. Some of the subsections of the report included the representations of women in medicine, workload patterns, and merging work and home life. This report gave a comprehensive look at the situation of Canadian female physicians.

Woodward CA, Cohen ML, Ferrier BM. Career interruptions and hours practiced: comparison between young men and women physicians. Can J Public Health. 1990 Jan-Feb;81(1):16-20.
This study compares current level of workforce participation and number, type and length of career interruptions since entering medical school reported by young men and women physicians. By 10 years from medical school entry, one third of the women studied had taken a maternity/child care leave and 24% had taken time away from their careers for other reasons while only 11% of men had interrupted their careers. The average time taken and reasons given for non-maternity-related career interruption were similar for men and women. Both men and women in the types of medical careers that historically have attracted more women work shorter hours than those in medical career types where women are under-represented. Across career types, women worked shorter hours per week than men and the presence of children further reduced hours of work for women only. Although the women studied are more active professionally than previous generations during their childbearing/rearing years, a considerable gap in the participation level remains.

Woodward C, Ferrier B, Cohen M, Williams P, Vayda E. Gender of physician, gender of patient: influences on new primary care physicians' practice development. CHEPA working paper series No. 93-8. October 1993. McMaster University, Hamilton, Ontario.
OBJECTIVE: To explore factors important to early practice development of family physicians. DESIGN: Qualitative methods are used. SETTING: Southern Ontario, 'Golden Horseshoe' area. PARTICIPANTS: Eighteen female and sixteen male family physicians 4-9 years in practice participated in focus groups and twenty-three female and twenty male family physicians less than 4 years in practice participated in in-depth interviews. Eighty percent of eligible physicians who were approached consented to interviews. RESULTS: Physicians report that many patients hold gender-related expectations of new family physicians that influence who seeks them out, the kinds of problems presented and the rate of their practice development. Female physicians report that many women seek them out for care, an observation confirmed by male physicians. Some me also prefer to see a family physician of the same sex. Male and female physicians report different experiences and concerns in interacting with opposite sex patients. CONCLUSIONS: Patients as well as the physician contribute to the shaping of a medical practice. Many women patients who now have a choice of sex of provider are choosing to move to a family physician. Although this was occurring before the report on sexual abuse of patients issued in Ontario, this report may have increased this trend, especially when women require a sexually sensitive examination. These current trends have numerous implications for primary care practice.

Woodward CA, Hurley J. Comparison of activity level and service intensity of male and female physicians in five fields of medicine in Ontario. CMAJ 1995 Oct 15;153(8):1097-106.
OBJECTIVE: To examine the extent to which physician's sex explains variation in the activity level and service intensity of a cohort of physicians in each of five medical fields after other sources of variation are taken into account. DESIGN: Data from the Ontario Ministry of Health (MOH) and the CMA were analysed by means of multivariate regression techniques for panel data. SETTING: Ontario. PARTICIPANTS: A total of 137 dermatologists, 974 general internists, 330 pediatricians and 941 psychiatrists and a random sample of 2771 family physicians

and general practitioners who met the eligibility criteria. Physicians were eligible if they billed the MOH for at least three quarters in 1983, did not bill as a medical laboratory director, provided direct patient care, did not have an alternative funding arrangement with the MOH, remained in the same specialty throughout the study period (1983-90) and billed from an Ontario address. OUTCOME MEASURES: Three measures of total activity level (annual number of services provided, annual fee-for-service billings and annual mean number of patients seen per quarter) and one measure of service intensity (annual mean number of services per patient per quarter). RESULTS: Although several variables (e.g., full-time work status, age, type of practice and recent practice move) influenced the four measures examined, physician's sex contributed significantly to explaining variation in activity in 70% of the regression equations. The women provided 33.0% fewere services per year than the men in family and general practice ($p < 0.001$), 25.0% fewer services in general internal medicine ($p < 0.01$), 22.1% fewer services in pediatrics ($p < 0.05$) and 22.3% fewer services in psychiatry ($p < 0.001$). Total billings by the women in these fields were also significantly less than those of their male colleagues, the difference being greatest among the family physicians and general practitioners (28.0%) and the general internists (27.0%) ($p < 0.001$). The women in these four fields saw significantly fewer patients per quarter than their male colleagues, the difference being greatest in psychiatry (33.0%) ($p < 0.001$). Sex affected service intensity in three fields. The female psychiatrists (14.8%) ($p < 0.001$) and general intenists (5.5%) ($p < 0.10$) provided more services per quarter than their male colleagues, whereas the female family physicians and general practitioners delivered 2.2% fewer services per patient per quarter than their male colleagues ($p < 0.01$). In two specialties differences between women aged 40 years or less and those over 40 years were observed. In general internal medicine the younger women had higher activity levels than the older women ($p < 0.01$). Conversely, in dermatology the younger women had lower activity levels ($p < 0.05$) and provided fewer services per patient per quarter ($p < 0.001$) than the older women. CONCLUSIONS: Although physician's sex explained much of the variation in activity level and service intensity, even after other important correlates were controlled for, the type and extent of differences observed between female and male physicians depended on the particular medical field examined. To understand the effect of the large increase in the number of women on the physician workforce, more detailed analyses by medical field are needed of the volume, mix and intensity of services provided by men and women, with adjustment for any possible differences in the patients seen in their practices.

a. Woodward CA, Williams AP, Ferrier B, Cohen M. Time spent on professional activities and unwaged domestic work: Is it different for male and female primary care physicians who have children at home? Canadian Family Physician. 42:1928-35, 1996 Oct.
OBJECTIVE: To examine how having children affects the hours spent by male and female family physicians on professional activities and on unwaged domestic work. DESIGN: Survey fielded between September 1993 and February 1994. SETTING: Ontario. PARTICIPANTS: All Ontario-based physicians certificated by the College of Family Physicians of Canada between 1989 and 1991 after completing a family medicine residency. MAIN OUTCOME MEASURES: Self-reported hours spent per week on professional activities and unwaged domestic work. RESULTS: Response rate was 70%; men and women were equally likely to respond. About half (47.7%) had children at home. Women with children at home spent fewer hours on professional activities ($P < 0.001$) than men with children, whose hours of professional activity were similar to hours of men without children. Both women and men with children

reported spending more time on household maintenance than did those without children. Among physicians with children, although men spent time on child care (mean time 11.4 hours; SD 11), women spent much more time on it (mean time 39.7 hours; SD 21; P < 0.001). The women worked an average of 90.5 hours per week in professional and unwaged activities; men averaged 68.6 hours. Childless physicians worked fewer hours: men 54.1, women 52.6. CONCLUSIONS: Female physicians with children at home spend more time on child care and household maintenance than their male partners. These responsibilities reduce professional work time (at least until all children are at school full time) and might deter women from active involvement in professional organizations.

b.Woodward CA, Hutchison BG, Abelson J, Norman G. Do female primary care physicians practise preventive care differently from their male colleagues? Can Fam Physician. 1996 Dec;42:2370-9.

OBJECTIVE: To assess whether female primary care physicians' reported coverage of patients eligible for certain preventive care strategies differs from male physicians' reported coverage. DESIGN: A mailed survey. SETTING: Primary care practices in southern Ontario. PARTICIPANTS: All primary care physicians who graduated between 1972 and 1988 and practised in a defined geographic area of Ontario were selected from the Canadian Medical Association's physician resource database. Response rate was 50%. MAIN OUTCOME MEASURES: Answers to questions on sociodemographic and practice characteristics, attitudes toward preventive care, and perceptions about preventive care behaviour and practices. RESULTS: In general, reported coverage for Canadian Task Force on the Periodic Health Examination's (CTFPHE) A and B class recommendations was low. However, more female than male physicians reported high coverage of women patients for female-specific preventive care measures (i.e., Pap smears, breast examinations, and mammography) and for blood pressure measurement. Female physicians appeared to question more patients about a greater number of health risks. Often, sex of physician was the most salient factor affecting whether preventive care services thought effective by the CTFPHE were offered. However, when evidence for effectiveness of preventive services was equivocal or lacking, male and female physicians reported similar levels of coverage. CONCLUSION: Female primary care physicians are more likely than their male colleagues to report that their patients eligible for preventive health measures as recommended by the CTFPHE take advantage of these measures.

a.Woodward CA, Ferrier B, Cohen M, Brown J. Professional activity. How is family physicians' work time changing? Can Fam Physician. 2001 Jul;47:1414-21.

OBJECTIVE: To examine hours worked professionally, work preferences, and changes in both of these and their correlates. DESIGN: Repeated surveys done in 1993 and 1999. SETTING: Ontario family practices. PARTICIPANTS: Cohort of physicians certified in family medicine between 1989 and 1991 after family medicine residency who were surveyed in 1993 when they resided in Ontario. MAIN OUTCOME MEASURES: Self-reported hours spent weekly on professional activities, desired hours of professional work, and balance between work and other activities. RESULTS: Fifty-three percent (293) of 553 physicians responded to the 1999 survey; 91% had remained family physicians; 85% of these had participated in the 1993 survey. The difference between the hours that family physicians preferred to work professionally and their actual hours of work had increased since 1993. Childless physicians, women physicians

with preschool children, and women physicians married to other physicians worked fewer hours professionally than other physicians in 1999. Female physicians and physicians without children worked closer to their preferred hours than other physicians. Reporting a preference to work fewer hours professionally in 1993 was linked with a reduction in professional activities by 1999. CONCLUSION: Greater attention should be paid in physician resource planning to the family life cycle of female physicians. Lifestyle changes could lead to a reduction in professional activity among these physicians.

b.Woodward CA, Cohen M, Ferrier B, Brown J. Physicians certified in family medicine. What are they doing 8 to 10 years later? Can Fam Physician. 2001 Jul;47:1404-10.
OBJECTIVE: To determine field of medicine and location of a cohort of physicians certified in family medicine between 1989 and 1991 and residing in Ontario in 1993 and to gather information on the scope of practice of family physicians in the cohort in 1999. DESIGN: Responses to a mailed questionnaire sent in 1999 were compared with responses to a 1993 survey of this group. SETTING AND PARTICIPANTS: All family physicians in Ontario in 1993 who received certification in 1989, 1990, or 1991 after completing a family medicine residency. Seven of 557 respondents to the 1993 survey were ineligible; 293 physicians (53%) responded to the 1999 survey. MAIN OUTCOME MEASURES: Field, location, and scope of practice. RESULTS: About 91% of the cohort were still practising family medicine, although 11% of these had restricted their practices to certain areas within family medicine. Physicians migrated from Ontario (6%) in nearly equal numbers to other provinces and other countries, predominantly the United States. More family physicians offered counseling, shared antenatal care, and newborn care in 1999 than in 1993. Those with restricted family practices provided fewer types of services and were less likely to provide antenatal or intrapartum care or to provide in-hospital services. CONCLUSION: Receiving certification in family medicine does not guarantee that physicians will remain in family practice 8 to 10 years later. Loss from general family medicine to restricted practices within family medicine and specialization was greater than loss from migration.

Woodward, CA. When a physician marries a physician: Effect of physician-physician marriages on professional activities. Can Fam Physician 2005;51:850-51.
OBJECTIVE To determine whether more Canadian family physicians are marrying other physicians and to examine the influence of physician-physician marriages on FPs' professional activities. DESIGN Secondary analysis of a population survey (mailed questionnaire) using regression analysis. SETTING Canadian family medicine. PARTICIPANTS Family physicians who responded to the 2001 National Family Physician Workforce Survey conducted by the College of Family Physicians of Canada (CFPC) (13 088 respondents; 51.2% response rate). MAIN OUTCOME MEASURES The main outcome measure was self-reported hours spent on professional activities during a typical week. Other information used in this analysis included marital status (currently married or not), hours spent providing dependent care each week, age (65 and older or younger than 65), sex, practice location (rural or not), and age of youngest child (younger than 6 or not). These factors were previously reported to affect amount of time spent on professional activities. Decade of graduation was used descriptively; having a physician spouse was considered a variable in the regression. RESULTS About 86% of FPs were married; 16% of these were married to other physicians. The proportion of physician-physician marriages increased over time, mainly because male physicians increasingly married female physicians. The

youngest cohort had the highest proportion of physician-physician marriages (20%). Having a physician spouse significantly reduced the hours devoted to professional practice. After taking into account the effects of other factors known to influence extent of professional activities, on average, female FPs in physician-physician marriages worked about 5 hours less weekly than other female physicians, and male FPs worked about 3 hours less weekly than other male physicians. The effect of other factors was consistent with previous reports of their influence on professional activities. CONCLUSION These findings have implications for medical human resource planning. The cumulative effect on physicians' work time that physician-physician marriages have must be considered. Two physicians married to each other might be a marker for a couple with high discretionary income that allows them to make a lifestyle choice of reducing work time. If this is the case, reduction in professional activities is more likely to be found among FPs whose spouses can command a high salary.

Zelek B, Phillips SP. Gender and power: Nurses and doctors in Canada. Int J Equity Health. 2003 Feb 11;2(1):1.

BACKGROUND: The nurse-doctor relationship is historically one of female nurse deference to male physician authority. We investigated the effects of physicians' sex on female nurses' behaviour. METHODS: Nurses at an urban, university based hospital completed one of two forms of a vignette-based survey in January, 2000. Each survey included four clinical scenarios. In form 1 of the questionnaire the physicians described were female, male, female, and male. In form 2, vignettes were identical but the physician sex was changed to male, female, male, and female. Differences in responses to questions based on the sex of the physician in each vignette were studied RESULTS: 199 self-selected nurses completed the survey. The responses of 177 female respondents and 11 respondents who did not specifiy their sex, and were assumed to be female based on the overall sex ratio of respondents, were analysed. Persistent sex-role stereotypes influenced the relationship between female nurses and physicians. Nurses were more willing to serve and defer to male physicians. They approached female physicians on a more egalitarian basis, were more comfortable communicating with them, yet more hostile toward them. CONCLUSION: When nurses and doctors are female, traditional power imbalances in their relationship diminish, suggesting that these imbalances are based as much on gender as on professional hierarchy. The effects of this change on the authority of the medical profession, the role of nurses, and on patient care merit further exploration.

Chapter Three

Women Physicians in Academic Medicine

Executive Summary

A. General Overview

- There are many women entering academic family medicine
- However, most are located at the lower rungs of the academic ladder

B. Status, Promotion and Tenure of Women Faculty

- Women more frequently have lower academic rankings compared to men
- Many women faculty are part-time, leading to complex issues surrounding promotion
- Tenure difficulties for faculty with family responsibilities or part-time status
- Increased attrition rates of women faculty compared to men
- Lower publication productivity of women academicians

C. Gender differences in compensation

- Women earn less on average than men, even at the same level of productivity
- Women may not value a high income to the same extent as men, and be less aggressive in demanding higher remuneration
- Even small salary increases can result in significant increases in morale

D. Gender Bias in competitive evaluations

- There is some evidence that women must be more productive than men to be perceived as equally successful
- Some studies show that women reviewers of manuscripts tend to favor women authors
- Women fellowship applicants were shown to be less successful in one study compared to men, however their background of fewer high impact publications may have accounted for this
- Women clinical supervisors may be seen as less competent by residents than men supervisors

E. Role models and mentorship

- Importance of mentorship is well accepted
- Women report difficulties finding a suitable mentor- female or male

- Women may be better able to relate personally to a woman mentor who has experience with dual career/family roles
- Women report dissatisfaction with mentorship relationship more often than men
- Qualities of kindness and approachability in a mentor may be more important for women than for men, and this may affect the relationship

F. Research career

- Academic women spend more time on teaching and clinical work, and less on research and administration compared to men
- This may be due to less grant support, institutional funding, and protected time among women faculty
- The topics that often are of interest to women researchers (e.g. issues of women's health) are often marginalized
- Grants have specific time frames and are not flexible for parental leave or part-time work

G. Lack of Institutional Support

- Academic medical institutions created to support men with full time help at home
- After hours meetings and weekend obligations exclude some women from important information and networking

H. Women in academic administrative leadership

- Lack of women in academic medicine leads to small number for academic leadership
- Women leaders may experience isolation
- Women in junior ranks feel that women leaders are 'superhuman' and may be discouraged from seeking leadership
- Men may be reluctant to be supervised by a woman
- Work may be devalued if a woman is granted a leadership position to fill an 'affirmative action' quota

I. Family Responsibilities

- Academic career often requires long and variable hours of work
- The implicit expectation that after-hours work is routine, conflicts with women's family and personal priorities
- Women physicians are often married to other physicians or professionals with busy careers
- Women experience slower career progression compared to men due to family priorities

- Women choose part-time status in academia to accommodate family responsibilities, but part-time status is perceived with less respect
- Like all working mothers, academic women physicians require maternity leave provisions and child care

J. Sexual harassment, gender discrimination and stereotyping

- Gender bias, discrimination and harassment in academia may set a poor example for trainees
- Women in academic medicine report experiencing more sexual harassment and discrimination than men
- Although institutional policies have led to declines in harassment in some settings, there are still higher levels of sexual harassment and gender discrimination reported in academia than in the community
- Women more often than men report informal networking that excludes them
- Women are expected to exhibit traditionally feminine qualities such as kindness and nurturing, yet by being so, they are seen as less assertive and ambitious
- Women often feel unwelcome in their relationships with men in academia
- Harassment, discrimination, and stereotyping are counter-productive to women's careers and can negatively impact on productivity and costs to the profession

K. Culture and class discrimination

- Women minority physicians are drastically under-represented, leading to lack of representation of these groups
- Minority faculty are less likely than white faculty to be promoted, even after controlling for tenure and productivity
- Minority women faculty may experience isolation and have difficulty finding a mentor
- Minority women faculty may face difficulties in research productivity

L. Tokenism

- Over-burdening of women asked to participate in multiple tasks to justify political needs for representation

Literature Review: Women Physicians in Academic Medicine

Introduction

As discussed in topic #2, the proportion of women in medicine is increasing internationally. Representation and leadership by women in academic medicine are important to facilitate gender sensitive decision-making, teaching and research.

Women bring a tremendous value as successful leaders and teachers in academic medicine. They are representative of half of the population, represent the roles and interest of about half of the student and resident population and teach and research within their own life experiences. Women have been and continue to be very successful academics, finding great joy in their professional lives. However, many women face barriers to achieving their potential. In reviewing published literature, we found that the studies focus mainly on the barriers and obstacles that are present in various settings, and highlight the differences between men and women using quantitative surveys or other data. Thus the literature unfortunately presents a negative picture of the status of women, and does not often highlight the strengths and contributions of women, especially in light of how comparisons between men and women are often based on men's attributes and work styles as the norm.

General Overview

Despite the increased proportion of women entering medical training in the United States, women faculty members comprise just over one quarter of the total academic population (Bickel, 2000a, AAMC, 2006). Even when women enter an academic stream, they are concentrated at the lowest ranks. In the U.S., women are increasing their numbers in training and entry-level academic medical positions, but are not advancing to higher-level positions (Kaplan et al., 1996; Schafer, 1997, Ash, 2004). Although the bulk of research comes from the US, internationally women are advancing into academic medicine, but in small numbers within the lowest ranks. Women in academic medicine in Israel are a growing population, but are also concentrated at the lowest ranks (Notzer & Brown, 1995) as are the academic women in Canada (Smedstad & Cohen, 1991; Miedzinski et al, 2003), Australia (Hart, 1996) and Norway (Kvaerner et al., 1999).

In a U.S. study, women were found to be significantly more likely to choose a career in academic medicine, with 14% of women and 10% of men medical students reporting an intention to choose this career path upon graduation (Nonnemaker, 2000). However, a report by the AAMC project implementation committee, found that the interest women residents have in pursuing a career in academic medicine is declining at a rate substantially greater than that of men (Bickel et al, 2002).

In order to better understand why women physicians are underrepresented in academic medicine, we reviewed the literature with respect to status, promotion and tenure, compensation, role models and mentorship, research, administrative leadership, balancing family life, institutional support, sexual harassment and discrimination, culture and class issues, and finally, tokenism. The literature predominantly reflects the North American perspective; however, we have presented alternate perspectives when available.

Status, Promotion and Tenure of Women Faculty

Women academics are mainly concentrated in the lower ranks of academia (Bickel et al 2002l; Reichenbach, 2004). In the U.S. in 2006, women represented 16% of full professors, and 38% of assistant professors (AAMC, 2006). Similarly, in Switzerland, 11% of full professors and 23% of associate professors were women (Reed & Buddeberg-Fischer, 2001). The gender differential in academia has not changed substantially within the last 20 years, with the proportion of women in the U.S. reaching the full professor level increasing by only 1% over 15 years (Bickel et al, 2002). These differences persist even after adjustment for confounding variables such as tenure status, academic department and hours worked (Nonnemaker, 2000). This trend is also seen in different areas of the world, with countries such as Israel reporting even slower rates of advancement than in North America. (Notzer & Brown, 1995)

Tesch and colleagues (1995) conducted a survey to examine the promotion rates of men and women academic physicians in U.S. medical schools over eleven years. Upon initial appointment to the faculty, there was no significant difference in qualification and experience, and both men and women felt equally prepared and motivated to pursue an academic career. However, only 5% of women achieved full professor rank and 59% achieved associate professor rank, while the proportions of men achieving these ranks were 23% and 83% respectively. In addition, the AAMC report found that women remain less likely to be promoted; even after taking into account publication productivity and number of grant awards (Bickel et al. 2002). In 24 randomly selected medical schools in the U.S., 66% of men and 47% of women faculty with similar seniority were full professors (Ash, 2004). In a survey of women faculty members at Columbia University in the U.S., only 10% of survey respondents reported that they perceived gender fairness in promotion decisions (Bennett & Nickerson, 1992). It appears that an important factor in the differential participation in academic medicine may be the differential promotion rates between the genders.

In addition to differences in promotion, women academic physicians are also significantly less likely to hold tenured positions. The criteria for achieving tenure traditionally include the amount of grant support obtained and number of academic publications. Recent figures from the AAMC reveal that 23% of male faculty had tenure status, compared to 14% of women faculty (Bickel et al, 2002). This discrepancy results in part because women drop out of the tenure track, or choose not to enter, because of perceptions about the incompatibility of the lifestyle with family and child rearing responsibilities (Bennett & Nickerson, 1992; McGuire, 2004). As a result, women are increasingly dominating non-tenure clinical tracks (Bickel & Kopriva, 1993). These findings highlight the need for institutions to assess these trends, in order to prepare for the increasing numbers of women entering medical school. Tenure policies need revision, to allow, for example, an extended time frame to complete the requirements, thereby offering flexibility for faculty members who have family responsibilities. Some universities may already have progressive and revised policies; for example, Yale Medical School has extended the traditional seven-year tenure clock to ten years to accommodate faculty who wish to work part-time for three years (Schafer, 1997). However even lengthening tenure and the creation of part-time options in academia may not resolve the problem; in a survey to deans of U.S. medical schools in 2005, 69% of schools offered tenure clock-stopping and part-time tenure policies but only one to two faculty per school on average had used these policies (Bunton, 2007).

Lastly, women academic physicians tend to have higher attrition rates than their male colleagues. Academic medicine in general tends to have high resignation rates, with one study finding that over 50% of faculty members appointed between 1979 and 1981 had left the institution and were no longer in academic medicine by 1991 (Tesch et al, 1995). However, attrition rates differ significantly by gender, with annual rates of 9.1% for women and 7.7% for men (Bickel et al, 2002). These figures indicate that in addition to factors inhibiting the promotion and tenure of women physicians; important gender differences also exist with respect to retention.

Gender Differences in Compensation

In the U.S, it has been estimated that highly productive men faculty at the associate professor level earn an average of $122 172 annually, while highly productive women faculty at the same level have an average annual income of $102 189 (Kaplan et al, 1996). Similar results have been found in another U.S. survey of 24 medical faculties (Ash, 2004). Differences have been found to persist even after adjusting for confounding variables, such as discipline, rank, academic productivity, and hours worked (Schafer, 1997). Surveys of women in academic medicine indicate a general recognition of this gender differential in compensation, with only 19% of women reporting a perception of equitable salaries for equivalent positions (Bennett & Nickerson, 1992). This perception increased with more senior rank, correlating with increasing salary differential.

One reason for these discrepancies in salary is that women faculty may not be as aggressive at negotiating as male faculty (Schafer, 1997). Women may also expect that institutions will provide compensation proportional to worth, as opposed to having to negotiate for what one is worth (Schafer, 1997). Assumptions that women are more likely to be in a two-income family may lead to beliefs that salary increases are not as necessary for women as they are for men faculty, who are more likely to be earning the sole family income (Bickel & Kopriva, 1993). Women physicians may also rank salary and prestige lower on a value scale than their men colleagues, indicating that salary differences may not be a major concern (Schafer, 1997). Despite this, institutions correcting gender differences in compensation report that relatively small salary increases result in a disproportionate increase in the morale and career satisfaction of women faculty members (Bickel et al, 2002).

Gender Bias in Competitive Evaluations

Gender bias may shape careers by influencing evaluations of grant or fellowship applications, peer-reviewed publications, and supervisory skills.

In the U.S. and Sweden, the presence of gender bias has been suggested in peer-reviewed scores for postdoctoral fellowship applications; women applicants were required to be 2.5 times more productive than the average man to receive the same competence score (Wenneras, 1997, Bickel, 2001). A study of fellowships awarded by the National Health and Medical Research Council of Australia found no difference in the proportion of men and women who succeeded in their applications, although there were 2.5 times more men applicants than women (Ward, 1998). The authors note that self-selection may explain the relatively fewer women fellowships. In a study of biology fellowships in Sweden, women were 20% less likely to be awarded a fellowship; however

their publications were found to be higher in number but lower in impact compared to men applicants (Gannon, 2001).

In a study of men and women reviewing fictitious research abstracts authored by men and women, there were no author gender differences in the ratings of scientific merit of quantitative studies; however women reviewers rated qualitative abstracts written by women more highly, compared to men reviewers who rated qualitative abstracts similarly for men and women authors (Johansson EE, 2002). Another study found that men reviewers of manuscripts did not favor men authors over women; however women reviewers favored women authors (Lloyd, 1990).

Learners may also rate women clinical supervisors differently than men. One study of psychiatry residents in Canada found that women supervisors were rated significantly lower on ability and knowledge than men supervisors (deGroot, 2003).

Role Models and Mentorship

The prospects for physicians in academic medicine are greatly enhanced by the presence of effective mentors (Levinson, 1989; Lefebvre 1993; Schafer, 1997). Mentoring relationships provide physicians at junior ranks with professional guidance and support (Lefabvre, 1993). The largest perceived obstacle to progressing up the ranks is the lack of an effective mentor (Schafer, 1997). In fact, over 94% of women in academic medicine feel that a successful tenured mentor is a necessity for women medical students with academic aspirations (Levinson et al, 1989). An effective mentoring relationship potentially increases success in salary and benefit negotiations, assists with research, provides networking opportunities with influential people, and offers encouragement and constructive criticism of academic pursuits. As well, faculty members who identify mentors have a higher overall career satisfaction, higher publication productivity, and greater confidence in research and professional capabilities (Levinson et al, 1991). Faculty members with mentors also have a significantly increased likelihood of receiving research grants (Palepu et al, 1998). For women, the presence of a successful role model who provides advice and guidance for both professional and personal contexts is strongly associated with overall career satisfaction (Levinson et al, 1991).

Some studies report that women are less likely than men to find an effective mentor (Bickel, 2000b; Foster et al, 2000) while other studies do not (Palepu et al, 1998). Only 31% of academic women surveyed in the United States reported having a current professional mentor, with the likelihood increasing with decreasing rank (Levinson et al, 1991). Women academic physicians face greater career obstacles than their men colleagues and as such, have more need for a mentor to help sustain their careers. Nevertheless, women may not seek out mentors as aggressively as men and may not recognize the importance for their career development (Schafer, 1997). In addition, mentors tend to choose their protégés based on perceived similarities, which may be a disadvantage for women faculty (Levinson et al, 1991). Women also report difficulty in finding a mentor successful in both professional and personal capacities (Levinson et al, 1989). It is unknown whether the gender of the mentor has implications for the success of the relationship. Women faculty with children may have difficulty relating to a man mentor who does not have the same degree of time constraints due to family obligations. However, limiting mentoring relationships to someone of the same gender may exacerbate the gender biases currently present

in academic medicine (Yedidia & Bickel, 2001). Furthermore, over 80% of women survey respondents indicated that the gender of a mentor was irrelevant (Palepu et al, 1998).

Men and women physicians may perceive and utilize the mentoring relationship differently. A U.S. study has found that in cardiology, women faculty compared to men were more likely to be dissatisfied with mentoring relationships and were less likely to report that their mentor was a positive role model (Limacher, 1998). Also in the US, writes Bickel (2000a), "women tend to view relationships in terms of support and affiliation, while men more often use them for competition and advancement." As a result, women may make less strategic use of professional relationships by assuming that hard work and dedication are the only factors required for success (Benz, 1998). Women are also more likely to look for qualities such as kindness and approachability that are not necessarily essential qualities in a successful mentor (Bickel et al, 2000b). Unconscious paternalism and even abuse of authority are risks when power and gender coalesce along traditional lines; men mentors are three times more likely to use a woman protégé's work to further their own careers rather than the protégé's (Benz, 1998). Such exploitation is rarely visible to the wider academic community.

Overall, inadequate mentoring is a major obstacle to career advancement for women academic physicians. Efforts to improve mentoring opportunities are necessary for women to realize their full potential. The "Beyond Parity" conference and symposium at the University of Illinois, Chicago, noted that a major strategy for reducing barriers is the availability of effective mentors who can assist with obtaining funding, advising about research, and recognizing achievements (Beyond Parity Workbook for Action). While the gender of the mentor may be irrelevant for some women academics, men mentors may pose a risk for other women protégés. Mentoring of women physicians by powerful men supervisors needs further examination and research.

Research Career

Significant differences exist between men and women with respect to academic productivity. In the US, women on average spend 7% of professional time in academic research, compared with 12% for men (Carr et al, 1992). The increased proportion of time spent in research and decreased proportion spent in patient care and teaching is correlated with higher academic productivity. The differential allocation of time between men and women physicians is most pronounced in the junior ranks (Kaplan et al, 1996). This factor could potentially play a role in the disparity in promotion rates between men and women faculty. Women publish significantly fewer journal articles, book chapters, and reviews, and are not asked to give guest lectures as frequently as their men colleagues (Kaplan et al, 1996). In a survey of 24 U.S. medical schools in 1995, women published two-thirds as many papers as men, and differences persisted after controlling for career motivation (Barnett et al, 1998). Furthermore, significant differences in publication rates exist between men and women faculty members with children, even after adjustment for seniority, hours worked per week, and hours of family obligations (Carr et al, 1998). However, citation rates have been found to be significantly higher for publications by women physicians, indicating that women may publish less, but have a greater impact per publication (Schafer, 1997).

Gender differences in research time may reflect the greater institutional support for men, with respect to protected research time (Carr et al, 1992). In addition, women medical researchers have substantially less access to research space, research assistants, and support staff (Kaplan et

al, 1996). Men and women do have an equal likelihood of receiving research grants; however women academic physicians are significantly less likely to receive institutional funding (Carr et al, 1998). Both men and women report a similar desire to increase the amount of time dedicated to research activities; however increased time constraints on women and lack of institutional support may prevent them from doing so (Carr et al, 1993). In addition, deadlines for completing research do not take into account part-time status or maternity leaves. Women also report a lower perception of research skill, despite training and qualifications similar to their men colleagues (Carr et al, 1993), suggesting limitations in confidence.

Differential rates of publications and grants have serious implications for promotion and tenure opportunities because academic productivity accounts for the greatest age-adjusted variation in academic rank (Kaplan et al, 1996). Differences in support (time and resources) for women researchers must be addressed if more women are to become highly productive faculty members

Institutional Support

Academic medical institutions have traditionally addressed the professional needs of men physicians with full time support at home. Persisting obsolete policies function today to systematically hinder the career progression of women academic physicians (Schafer, 1997). Significant numbers of women faculty feel that the medical school environment is not welcoming and that they do not have equal academic opportunities (Foster et al, 2000). Over 59% of academic women physicians believe that women do not pursue careers in academic medicine due to a lack of institutional support, and 74% feel that institutions inadequately address the needs of women with children (Bennett & Nickerson, 1992). This opinion persists between different academic ranks, suggesting a general consensus among women academics. Supporting their perception is the finding that women faculty with children receive reduced institutional research funding and less secretarial support (Carr et al, 1998). These differences persist even after comparing women faculty with children to women colleagues without children and men colleagues with children. It is unknown whether the decreased professional productivity of women with family obligations is the result or the cause of inequitable institutional support (Carr et al, 1998).

Both men and women academic physicians find meetings held after hours (before 8:00 am or after 5:00 pm) to be an obstacle to academic participation (Benz, 1998), but these barriers particularly affected women. (Foster et al, 2000). After hours meetings exclude women from important information and networking opportunities because they shoulder an increased proportion of domestic responsibilities (Benz, 1998). Other obstacles include work related travel and weekend work obligations (Carr et al, 1998). These issues may also be significant to men faculty with children; however women are more affected by institutional incompatibility and are more sensitive to role strain between family and career (Bennett & Nickerson, 1992).

Women in Academic Administrative Leadership

A major consequence of the low number of women reaching the top ranks of academic medicine is the resulting small pool of women available for academic leadership. As of 2001, only 8% of U.S. medical school department chairs were women (Bickel et al, 2002), and only four of the 125 U.S. medical schools had a woman dean (Richman et al, 2001). This trend is seen in other parts

of the world as well, with only 5.1% of academic women physicians holding leadership positions in Norway, compared with 14.6% of men (Kvaerner et al, 1999). The proportion of women in leadership has not increased appreciably over the last 20 years, with numbers increasing from less than one woman leader per medical school to one per school on average (Richman et al, 2001). These statistics vary by academic discipline, with the probability of leadership correlating with the proportion of women in the specialty (Kvaerner et al, 1999). Departments of Family Medicine seem to have made more progress in this area than other specialties, as a recent survey of member organizations of WONCA indicates that 45.8% of responding institutions had ever had a woman chair of family medicine (Leopando, 2003). Despite this, an overall scarcity of women academic leaders exists, resulting in a lack of unity and collegial support, and feelings of loneliness and isolation for the few who reach the top ranks (Benz, 1998). Furthermore, women at more junior academic ranks report a perception of successful academic women as "superhuman" (Yedidia & Bickel, 2001), perhaps leading them to report lower overall interest in academic leadership than men (Kvaerner et al, 1999).

Traditional gender role stereotypes can affect the number of women in academic leadership. Leadership characteristics thought desirable in men, such as independence, assertiveness and power, tend to be viewed negatively when applied to women (Conley, 1993). In fact, women are often discouraged from behavior conducive to advancing rank, and are often viewed with contempt if such behavior is displayed (Yedidia & Bickel, 2001). Men subordinates may be threatened by a woman leader and may be reluctant to be supervised by a woman (Bickel et al, 2002). Women leaders are not taken as seriously as their male counterparts, face an overall lack of recognition, and often have their work devalued by both men and women colleagues who may assume they fill an "affirmative action quota" (Benz, 1998). The dedication of women academic leaders may also be questioned if family obligations appear to be conflicting with commitment to professional life (Yedidia & Bickel, 2001).

A failure to overcome gender bias may result in overlooking qualified women candidates (Benz, 1998). Such neglect results in a profound loss to academic departments, as women's leadership style tends to foster consensus and collaboration (Bickel et al, 2002). However, interventions aimed at increasing the advancement of women to higher academic ranks by building confidence, proposing management strategies and providing networking opportunities have led to an increase in leadership among participants from 38% to 80% within five years (Richman et al, 2001). As well, recent Canadian policies requiring universities to provide a rationale for the sex distribution of nominees for chair positions has almost doubled the percentage of women awarded these positions (Kondro, 2002). These data suggest that women could succeed in academic leadership at a much higher rate if provided with adequate opportunities and support.

Family Responsibilities

The 'Beyond Parity' conference workbook describes the need for institutional change from the old academic 'norm' in which "The standard by which faculty commitment is measured is still based on the age-old model of paying for the services of one while receiving the benefits of two- a man and his wife" (Beyond Parity Workbook for Action, page 4). Women in academic medicine attempt to balance patient care, teaching, research, academic work, publications, and promotion and tenure deadlines with raising a family (Carr et al., 1998; Levinson et al, 1989;

Levinson et al. 1992; Bellini et al., 2001; Kalet, 2006). While these issues may also be relevant for men physicians in academia, women generally spend more time on family responsibilities and are less able to expand working hours due to personal obligations (Carr et al, 1998). Full time status in academic family medicine often involves a workweek of much greater than 40 hours, and these obligations may force women to choose between their personal and professional lives. Women who attempt to fill both roles fully may feel that they are both neglecting family responsibilities and lacking commitment as a professional (Palepu & Herbert, 2002). Nevertheless, they may feel the need to present themselves as unburdened by this role strain in order to compete with men colleagues, who very often have full-time support at home (Bennett & Nickerson, 1990). Schafer reports that "tenure policies are written as if the person who was going up for tenure has a full time support person at home, doing all the other work like cooking meals and taking care of parents etc" (1997).

As mentioned in Topic #2, studies from both North America and Australia have predicted that half of all physicians will soon be married to other physicians (Tesch, 1992; Harari, 1998; Sobecks, 1999; Smith, 2002). Therefore, not only do women physicians lack full time support at home; they are also often married to other physicians who face the same burdens and work expectations. The gender imbalance at home contributes to the gender imbalance at work as women's extra home duties result in an increased need for part-time academic positions (Bellini et al, 2001). Women spend significantly more hours per week on childcare responsibilities than men colleagues with children.

While part-time work is one answer to the problem of conflicting responsibilities, institutions need to foster part-time status of faculty members. Women hold 49% of part-time positions in academic family medicine (Lewis-Stevenson, 2001). Although women choose part-time work primarily to accommodate family responsibilities, men choose part-time status in academia because of competing professional activities (Socolar et al, 2000). In one study in the U.S., among faculty reported to be working part-time, women worked an average of 35 hours per week and men worked 51 hours per week, all of which was comprised of patient care and teaching (Levinson et al, 1993). Both men and women choosing this track perceive a lack of respect from colleagues and reductions in salary and benefits (Levinson 1993). Moreover, since traditional promotion and tenure policies center on research productivity, the majority of part-time faculty are distributed in the lower academic ranks (Lewis-Stevenson, 2001).

Maternity leave is a major issue for academic women starting a family (Palepu & Herbert, 2002). When surveyed in 1989, 46.5% of women in academic medicine listed in the Association of American Medical Colleges reported delaying their childbearing until after the training period (Levinson et al, 1989). The majority of these mothers also took no time off before the birth of their children and returned to work within six weeks, with over 84% returning to full time work due to pressure to maintain teaching responsibilities and continue research (Levinson et al, 1989). Many new mothers find their research suffers, as it becomes the easiest area of responsibility to set aside (Levinson & Tolle, 1986). The rapid return to work resulted in difficulties such as psychological stress, altered mood during the postpartum period, fatigue from interrupted sleep, and a feeling of guilt due to conflict between personal and professional needs (Levinson & Tolle, 1986). Levinson and Tolle have suggested implementing maternity leave policies similar to those in place for sabbatical leaves in order to ensure compensation and coverage of responsibilities

and to minimize disruption to research and teaching responsibilities. Also, they indicate that new mothers be permitted to return to work in a gradual fashion, with a flexible start date and sensitivity to the needs of nursing women (Levinson & Tolle, 1986).

Lack of on-site childcare can be problematic for women in academic medicine with young children (Carr et al. 1998; Foster et al, 2000; Bellini et al, 2001). Other areas of concern are the availability of emergency childcare (Levinson et al, 1989; Bellini et al, 2001), and difficulty attending meetings held before 8 am and after 5 pm (Carr et al, 1998; Benz, 1998; Foster et al, 2000).

Mothers in academic medicine generally perceive their career advancement and progress as hindered by having children (Schafer, 1997; Levinson et al, 1989, De Angelis, 2000). Nevertheless, in 1989, most women surveyed by Levinson et al, reported being satisfied with their decision to have children, despite the slowed career progress. Institutions need to make provisions to accommodate academic mothers, because when conflict occurs between career and family, women are more inclined to leave academic medicine altogether. This exodus is an unfortunate loss of talent and potential role models for future women physicians (Bennett & Nickerson, 1990).

Creating balance between academic medicine and personal and family life is a persisting theme for academic women physicians. Women chosen as Robert Wood Johnson clinical scholars in their early careers, when surveyed at mid-career, at least 15 years later, articulated clearly that they had to define success for themselves. Success, was not confined to the medical arena, but rather included "making life work," and "making work work." The more satisfied among this group of women had clear goals and a sense of control over time, while the less satisfied underscored the persistent struggle to gain balance in their lives and the institutional barriers to their success. This study suggests that for academic women, the achievement of balance is a definition of success. (Kalet et al, 2006)

Sexual Harassment, Gender Discrimination, and Stereotyping

Although sexual harassment and gender discrimination are prevalent at all levels of medical practice, academic medicine sets the standard for the educational and workplace environment, while faculty members set an example for future health care practitioners. Consequently physicians in training may begin to perceive gender bias and sexual harassment occurring within academic medicine as normal or acceptable (Conley, 1993).

Although the policies of academic institutions that overtly perpetuate gender discrimination have been abolished (Bernstein & Cock, 1994), women physicians in academic medicine still report more sexual harassment and gender discrimination than their women colleagues practicing within the community (Carr et al, 2000). As a result of the implementation of institutional policies, occasions of overt sexual harassment are on the decline (Benz, 1998). On the other hand, gender discrimination remains pervasive within the academic environment and can potentially be more damaging than sexual harassment. (Jacobs et al, 2000) In a survey study of 24 randomly selected medical schools in the contiguous United States, women physicians were 2.5 times more likely to perceive a sexually hostile academic environment than their men colleagues (Carr et al., 2000). 77% of women and 30% of men faculty perceived

gender discrimination within the institution, and 52% of women faculty and 5% of men faculty reported sexual harassment by a colleague or supervisor (Carr et al, 2000). Furthermore, women faculty report that such behavior is a serious barrier to career advancement (Foster et al, 2000). Additionally, 24% of women perceived an informal system of colleague networking that systematically excluded women on the basis of gender, while only 6% of men perceived such a network (Foster et al, 2000). While perceptions are not necessarily accurate reflections of reality, gender differences in perception are potentially problematic for the recruitment and retention of women academic physicians (Hostler & Gressard, 1993).

Stereotyped gender roles also have a negative impact on the career progress of women faculty. The unspoken expectation of women to be less ambitious and assertive than men is confining, and women professors who are not perceived as "kind" and "nurturing" are judged more harshly and negatively than men professors with similar personality traits (Bickel, 1997). These gender expectations could potentially limit the career opportunities and career progress for women physicians. Additionally, women physicians report the academic environment to be less welcoming, and often feel ignored in their interactions with men colleagues and superiors (Bickel, 1997). This unfriendly environment interferes with working relationships with men colleagues, prevents effective collaboration, and potentially compromises patient care.

Institutional interventions aimed at reducing sexual harassment and diminishing gender discrimination can significantly decrease reports of perceptions of sexual harassment, gender insensitivity, and gender discrimination among men and women faculty (Jacobs et al, 2000). Institutions have both a moral and a fiscal obligation to decrease such behavior because sexual harassment and gender discrimination have an impact on productivity, collegiality among faculty members, and financial costs (Jacobs et al, 2000).

Culture and Class Discrimination

Women minority physicians face issues that differ from those of their white women colleagues. The familiar concerns of white women in academic medicine may not be relevant to women from different cultural, ethnic or class origins (Bernstein & Cock, 1994).

Women minority physicians face problems of lower numbers and promotion rates, but to a greater extent than non-minority women colleagues. Of greatest concern is the under-representation of women physicians from minorities including African, Native American, Mexican, or Puerto Rican descent. These groups comprise almost one quarter of the American population but only 3.9% of full-time faculty members at U.S. medical schools (Cohen, 1998). The proportion of white women in U.S. faculties of all disciplines rose from 24% to 28% between 1981 and 1991, while the proportion of non-white women rose from 3% to only 4% during the same time period (Bernstein & Cock, 1994). Of the 27% of women full time faculty in U.S. medical schools in 1999, the approximate breakdown by race was 75% white, 11% Asian, 4% black, and less than 1% Native American (Bickel, 2000a). These figures indicate that ethnic and racial issues may compound the gender issues faced by women academic physicians.

Minority faculty remain significantly less likely than their majority colleagues to be promoted, with only 1% of under-represented minority faculty reaching senior ranks (Lewis-Stevenson et al, 2001). White faculty members are promoted at twice the rate of Asian faculty, and three

times the rate of under-represented minority faculty, even after controlling for confounding variables such as publication productivity, tenure track, and grant funding (Palepu et al, 1998). Although family medicine may be better than other faculties in recruiting and retaining minority faculty members --the proportion of underrepresented minority faculty in family medicine is significantly higher than in medical school faculties overall (Lewis-Stevenson et al, 2001)--family medicine has made very little advancement at promoting them to higher ranks and there is no indication of this disparity improving over time (Fang et al, 2000).

No significant correlation exists between ethnic and racial status and aspirations to achieving rank; therefore it is unlikely that a lack of ambition is responsible for the promotion discrepancy between minority and majority academic physicians (Palepu et al, 1998). Women minority faculty members are likely to feel particular isolation within the academic community as a result of the lack of minority colleagues, creating additional disadvantage (Cohen, 1998). Along with isolation, minority women may have even greater difficulties in finding a suitable mentor or role model, especially if a mentor of similar gender and race is preferred (Lewis-Stevenson et al., 2001). A significant proportion of minority women faculty feel that men are recruited more frequently and mentored more effectively for faculty positions (Cain et al, 2001). Approximately 60% of minority residents perceived this racial bias, while over 56% of white residents did not. However, almost all survey respondents agree that minority women residents are most likely to perceive condescending attitudes from their supervisors and mentors (Cain et al, 2001). Perceptions such as these influence students' career decisions regarding academic medicine and such trends may further forestall increasing the numbers of minority women faculty.

In addition to inadequate mentoring, or possibly as a result of it, minority women academics also face difficulties in research. While minority faculty members work a similar number of hours per week as their colleagues (Palepu et al, 2000), they spend significantly more time on clinical activities than research (Palepu et al, 2000). Minority faculty have significantly lower publication productivity (Palepu et al, 1998), are less likely to be on tenure tracks, and are less likely to receive research grants (Fang et al, 2000).

Under-represented minority faculty members have significantly lower levels of career satisfaction than their majority colleagues. This difference persists after controlling for possible confounding variables such as department, rate of compensation, and rank. Furthermore, 58% of minority faculty members stated that they have considered leaving academic medicine within the next five years (Palepu et al, 2000). In a concerted effort to recruit and retain more minority women physicians, academic departments of medicine need to evaluate current promotion criteria, address any obstacles and ensure that external reviewers are impartial to race for evaluation of faculty qualifications (Palepu et al, 1998).

Tokenism

Tokenism occurs when a small number of people who are usually excluded from a group or organization are accepted into the group to give the appearance of representation. While the token members appear to have achieved success, "access is systematically denied for the vast majority of disqualified disadvantaged group members" (Wright & Taylor, 1998). Token representation of women in academic medicine may result in women being overburdened with invitations to serve on various committees and participate in multiple tasks in an attempt to

satisfy institution equity policies. For example, women in senior academic positions receive more invitations to speak at conferences and chair committees simply because there are fewer of them (Schafer, 1997). Women may also be invited as candidates for senior positions in a token effort by search committees to balance the pool with respect to gender without the intention of changing appointment outcomes (Yedidia & Bickel, 2001).

Token members may serve the function of demonstrating to others that the organization is inclusive, with the implication that other applicants should simply work harder to achieve success. This gives the appearance that the institution follows non-discriminatory hiring practices (Yoder, 1985). Interestingly, once a woman 'token' has been accepted, she is not expected to act in ways that are characteristic of women, but rather is expected to assimilate to the norms of the dominant group (Yoder, 1985, Floge & Merrill 1986). In a study of men nurses and women physicians, men nurses were given more responsibility, considered more competent, and treated as equals by men physicians, whereas women physicians were often isolated from social functions and expected to perform roles usually assigned to nurses (Floge & Merrill, 1986). This study suggests that the expectation of male characteristics from men tokens has different consequences from the expectation of female characteristics from women tokens.

Sincere and persistent commitment to change within institutions will be necessary for the development of a more welcoming climate for women within academic medicine. The dramatic effect of a decision of single department of medicine to commit itself to the promotion of women faculty reveals that significant change can occur even within a five year period. (Fried et al, 1996) After Johns Hopkins identified that women faculty received lower salaries and fewer promotions, the chair of the department of medicine appointed a committee that documented that women in academic medicine were paid less, were less likely to be promoted, were less likely to have mentors and more likely that their mentors would use the women's research efforts; they found that women faced more isolation, more conflict between professional and personal responsibilities, more exclusion from informal networks, and more obstacles in the informal and institutional cultures. Interventions initiated from the department chair included the development of leadership in favor or women's academic development, the education of faculty in the need for these changes, salary equalization, systematic identification of women eligible for promotion, and lengthening of term limits for each academic rank. After 5 years, the results of this intervention, planned to last 15 years, included a 550% increase in the number of women promoted to associate professor with an increase from 9% to 41% of the proportion of women at the associate professor level. Improved attention to mentoring, career development, and the gender climate led to improved optimism among women faculty and improved retention in academia. While more work remains, this landmark project demonstrated the feasibility of making institutional changes to rectify women's position in academic medicine in settings where the leadership fully commits itself to this goal. (Fried et al, 1996)

Conclusion

Academic medicine is a challenging setting for women physicians. This literature review highlights specific areas of difficulty. Academic medicine must address changes in the system of promotion and tenure to be more equitable to women physicians and must assure that compensation guarantees equal pay to men and women. Flexible childcare, opportunities for

part-time work, and meetings scheduled during working hours will further aid women in academic medicine. Women academics need mentoring and must be encouraged to take on mentorship roles themselves. Increases in flexible research opportunities, increased opportunities for women in academic leadership, and personal encouragement for women to strive for such positions will help address the current gaps. Increased awareness of sexual harassment, cultural and class issues, and the effects of tokenism will contribute to an environment where women can succeed in academic medicine.

Abstracts and Summaries: Women Physicians in Academic Medicine

Association of American Medical Colleges. Analysis in Brief, October 2006;6(7).
Summary: The proportion of women medical students in the U.S. has stabilized at approximately half, from 2002 to 2006. The proportion of women residents in each specialty has remained stable over the past few decades. With increasing academic rank, there is a decreasing proportion of women. In 2005-2006, women represented 38% of assistant professors and 16% of full professors. In leadership, 10% of department chairs were women. In the year of this report, every U.S. medical school had at least one woman department chair or a dean. Women continue to be under-represented in the highest positions in the U.S.

Arlene S. Ash, PhD; Phyllis L. Carr, MD; Richard Goldstein, PhD; and Robert H. Compensation and Advancement of Women in Academic Medicine: Is There Equity? Friedman, MD. Annals of Internal Medicine 2004;141(3):205-212.
Background: Women have been entering academic medicine in numbers at least equal to their male colleagues for several decades. Most studies have found that women do not advance in academic rank as fast as men and that their salaries are not as great. These studies, however, have typically not had the data to examine equity, that is, do women receive similar rewards for similar achievement? Objective: To examine equity in promotion and salary for female versus male medical school faculty nationally. Design: Mailed survey questionnaire. Setting: 24 randomly selected medical schools in the contiguous United States. Participants: 1814 full-time U.S. medical school faculty in 1995–1996, stratified by sex, specialty, and graduation cohort. Measurements: Promotion and compensation of academic medical faculty. Results: Among the 1814 faculty respondents (response rate, 60%), female faculty were less likely to be full professors than were men with similar professional roles and achievement. For example, 66% of men but only 47% of women ($P < 0.01$) with 15 to 19 years of seniority were full professors. Large deficits in rank for senior faculty women were confirmed in logistic models that accounted for a wide range of other professional characteristics and achievements, including total career publications, years of seniority, hours worked per week, department type, minority status, medical versus nonmedical final degree, and school. Similar multivariable modeling also confirmed gender inequity in compensation. Although base salaries of nonphysician faculty are gender comparable, female physician faculty have a noticeable deficit (–$11 691; $P = 0.01$). Furthermore, both physician and nonphysician women with greater seniority have larger salary deficits (–$485 per year of seniority; $P = 0.01$). Limitations: This is a cross-sectional study of a longitudinal phenomenon. No data are available for faculty who are no longer working full-time in academic medicine, and all data are self-reported. Conclusions: Female medical school faculty neither advance as rapidly nor are compensated as well as professionally similar male colleagues. Deficits for female physicians are greater than those for nonphysician female faculty, and for both physicians and nonphysicians, women's deficits are greater for faculty with more seniority.

Barnett RC, Carr P, Boisnier AD, Ash A, Friedman RH, Moskowitz MA, Szalacha L. Relationships of gender and career motivation to medical faculty members' production of academic publications. Acad Med 1998 Feb;73(2):180-6.
PURPOSE: To evaluate the relationships between both internal and external career-motivating factors and academic productivity (as measured by the total numbers of publications) among full-time medical faculty, and whether these relationships differ for men and women. METHOD: In 1995 a 177-item survey was mailed to 3,013 full-time faculty at 24 randomly selected U.S. medical schools stratified on area of medical specialization, length of service, and gender. Two-tailed t-tests and regression analyses were used to study the data. RESULTS: A total of 1,764 faculty were used in the final analyses. The women had published two thirds as many articles as had the men (mean, 24.2 vs. 37.8). Intrinsic and extrinsic career motivation were rated similarly (on a three-point scale) by the women and the men: intrinsic career motivation was rated higher (women's mean rating: 2.8, men's mean rating: 2.9) than was extrinsic career motivation (mean rating: 2.1 for both). The main findings of the regression analyses were (1) intrinsic career motivation was positively associated, and extrinsic career motivation was negatively associated, with the number of publications; (2) publication rates were higher for the men than for the women after controlling for career motivation; and (3) there was no significant effect of gender on these relationships. CONCLUSION: The women faculty published less than did their men colleagues, but this difference cannot be accounted for by gender differences in career motivation. Further research on institutional support, family obligations, harassment, and other factors that could affect academic productivity is necessary to understand the gender difference in numbers of publications.

Bellini LM, Abbuhl S, Grisso JA, Lavizzo-Mourey R, Shea JA. Stresses and workplace resources for academic junior faculty: track and gender comparisons. Acad Med 2001 Oct;76(10 Suppl):S62-4.
Despite the increasing numbers of women at all levels of academic medicine, women remain significantly less likely than are men to achieve senior rank or leadership positions. Possible explanations for the differences include limited access to mentoring, fewer rewards such as promotions, lower salaries, and less appropriate recognition. The slower progress of women faculty has also been related to fewer hours worked and decreased academic productivity related to childbearing, although studies have disputed this finding. The academic track has also been the focus of recent studies. Faculty with more than 50% clinical activity have less time, resources, and mentoring for academic career development. As academic medical centers have become more dependent on clinical revenue, expectations for clinical productivity of faculty have increased. Faculty in clinician-educator tracks might feel more stresses than those in more research-oriented tracks. Accordingly, the purpose of this study was to examine the experiences of assistant professors with respect to both gender and academic track to determine whether previously documented differences persist. We were also interested in examining how home responsibilities and support systems related to stress and productivity.

Bennett NM, Nickerson KG. Women in academic medicine: perceived obstacles to advancement. J Am Med Womens Assoc 1992 Jul-Aug;47(4):115-8.
To investigate perceived obstacles to the advancement of women in academic medicine, we sent a questionnaire assessing perceptions of the fairness and supportiveness of the academic

environment to the 229 female teaching and research faculty of the School of Physicians & Surgeons at Columbia University. The overall response rate was 85%. Forty-six percent believed that they had not had the same professional opportunities as their male colleagues, 52% believed that salaries were not equivalent for men and women in similar positions, and 50% believed that promotions were awarded in a biased manner. Thirty percent reported that sexist behavior was common and that sexual harassment occurred in the workplace. Eighty-one percent experienced conflicts between their professional and personal lives and most believed that the institution failed to adequately address the needs of women with children. This survey indicates that there are significant perceived obstacles to the advancement of women in academic medicine that must be addressed.

Benz, EJ. Increasing Academic Internal Medicine's Investment in Female Faculty Am J Med 1998; 105(6): 459-63.
CONTEXT: In recent years the number of female medical school graduates has steadily been increasing. Interestingly, only 5% of women have achieved full professor status, compared to 23% of men, despite similar initial academic rank, board certification and type of tenure track. OBJECTIVE: In 1994, the Association of Professors of Medicine (APM) Members Services Committee was charged with addressing the needs of departments of internal medicine. The committee has chosen to focus on the low numbers of female physicians in the upper echelons of academic internal medicine. This report discusses what they found. DESIGN: Literature was reviewed to determine what factors contribute to the infrequency with which women are advanced to the highest ranks of faculty. MAIN OUTCOME MEASURES: The report looks at why women are less likely to be promoted, why it is an important issue to address and what potential answers exist. RESULTS: It was found that discrimination, lack of research opportunities, insufficient mentoring, inflexible structure, isolation and selection biases are all factors that inhibit the advancement of women in internal medicine. To remedy the situation, local as well as national solutions were discussed. Locally they found that supporting faculty in their professional activities, addressing the structural issues, decreasing isolation, eliminating selection biases and improving mentoring opportunities would be beneficial. Nationally they found that the APM should assume leadership with respect to gender based issues, ensure that the appropriate number of women occupy leadership positions, promote women in upcoming national meetings and include discussions of these issues in future conferences. In addition, a clearinghouse of related materials should be organized for dissemination to departments of internal medicine. CONCLUSION: The report advises that departments of internal medicine should make addressing gender based issues a high priority for their future success.

Bernstein A, Cock J. A troubling picture of gender equity. Chronicle of Higher Education 1994 June 15; Pull-Out Section 2.
On first glance, the past 30 years have shown great improvements to gender equity in academe. Statistics show that female representation in academic forums has increased greatly, equaling or sometimes surpassing the male presence. However, statistics can often be misleading. The claim of increased gender equity in academe focuses greatly on the presence of white, greatly advantaged women, and all but ignores the issues of race, class, age, and ethnicity. This article addresses these issues in relation to gender equity and academe, and more specifically, the development of women's studies programs across North America.

Beyond Parity: Workbook for Action. Transforming academic medicine through women's leadership. The University of Illinois at Chicago, U.S. Department of Health and Human Services, and the Office on Women's Health, Region V. http://www.uic.edu/orgs/womenshealth/page1.htm

The Beyond Parity Conference was organized to encourage coordinated activism on the part of women and men who wish to promote institutional change through women's leadership in academic medicine. It includes background literature on the status of women in academic medicine and the benefits of their participation, identification of the structural and cultural barriers that impede women's advancement, descriptions of successful efforts to dismantle these barriers, and redefinition of traditional notions of success.

Bickel J, Kopriva PR. A statistical perspective on gender in medicine. J Am Med Women's Assoc 1993 Sep-Oct;48(5):141-4.

As is true for women in most of the professions, women in medicine have made considerable gains in recent years. The increase in the numbers of women in or about to enter the profession has been dramatic – 18% of all physicians and 42% of medical students are now women. Women are working at all levels of the profession and hold an increasing number of high positions in government, public health, health policy management, practice administration, and organized medicine. While the career patterns of men and women physicians look more alike now than in earlier eras, large disparities remain in the professional advancement of women and men, especially in academic medicine. Women enter the primary care specialties at a higher rate than men and work fewer hours per week. But these factors alone do not explain the lower incomes earned by women physicians. While many young men physicians are playing a more active role in child rearing than their fathers did, women continue to bear primary responsibility for family care-giving. While significant progress has been made in adding flexibility to traditional structures, the lack of better parental leave and child care options still hampers the progress of many women.

Bickel J. Gender stereotypes and misconceptions: unresolved issues in physicians' professional development. JAMA 1997 May 7;277(17):1405, 1407.

This article lists and examines some commonly held misconceptions leading to gender bias in medicine, such as: "Since most physicians and educators are fair minded, the gender related stereotypes and biases they may have are innocuous;" "Few differences remain between men's and women's experiences in medical education;" and "Women and men have equal opportunities for professional advancement in academic medicine."

Bickel J. (a) Women in academic medicine. J Am Med Womens Assoc 2000;55(1):10-2, 19.

Women now constitute 43% of US medical students, 37% of residents, and 27% of full-time medical school faculty. Less than 11% of women faculty are full professors, however, compared to 31% of men, and these proportions haven't changed in more than 15 years. Since the proportion of women reaching the top ranks remains relatively low, the pool of women available for leadership positions in academic medicine is still small. This review article first summarizes recent data on women's representation in academic medicine and then discusses why they are not succeeding at the same pace as men. Reasons include a complex combination of women's choices, sexism, cultural stereotypes, constraints in combining family responsibilities with professional opportunities, and lack of effective mentoring. Multiple approaches are required to overcome

these "cumulative disadvantages," among them improving the gender climate at academic medical centers; the mentoring of women faculty, residents, and students; and skill-building opportunities for women.

Bickel J, Clark V. (b) Encouraging the advancement of women. JAMA 2000 Feb 2;283(5):671.
Cohort studies comparing men and women faculty have found that women remain substantially less likely than men to be promoted to senior ranks, even after adjusting for number of publications, grant support, tenure versus other academic tracks, hours worked, and specialty. One possible cause of this discrepancy is that women receive inadequate mentoring and encouragement in their career development. To improve the likelihood of women progressing to senior ranks, there needs to be an increased emphasis on leadership skill-building opportunities and ways to improve the academic climate for women. Bickel elaborates on this solution and addresses the work of a number of committees dedicated to promoting gender equity in academic medicine.

Bickel J. Gender equity in undergraduate medical education: a status report. J Women's Health Gend Based Med. 2001 Apr;10(3):261-70.
This status report summarizes recent data on and studies of women's experiences as medical students. Women medical students in the United States now number over 29,000--44% of enrollees. Despite large increases in the numbers of women students, harassment and gender stereotyping continue to detract from their education and opportunities. Moreover, specialty choices have remained remarkably stable, with comparatively few women entering surgery and most subspecialties. Because equal opportunity has not yet been achieved, medical schools need to monitor the experiences of their trainees and to target interventions where problems still exist in order to ensure that progress toward gender equity continues.

Bickel J, Wara D, Atkinson BF, Cohen LS, Dunn M, Hostler S, Johnson TR, Morahan P, Rubenstein AH, Sheldon GF, Stokes E; Association of American Medical Colleges Project Implementation Committee. Increasing women's leadership in academic medicine: report of the AAMC Project Implementation Committee. Acad Med 2002;77(10):1043-61.
The AAMC's Increasing Women's Leadership Project Implementation Committee examined four years of data on the advancement of women in academic medicine. With women comprising only 14% of tenured faculty and 12% of full professors, the committee concludes that the progress achieved is inadequate. Because academic medicine needs all the leaders it can develop to address accelerating institutional and societal needs, the waste of most women's potential is of growing importance. Only institutions able to recruit and retain women will be likely to maintain the best housestaff and faculty. The long-term success of academic health centers is thus inextricably linked to the development of women leaders. The committee therefore recommends that medical schools, teaching hospitals, and academic societies (1) emphasize faculty diversity in departmental reviews, evaluating department chairs on their development of women faculty; (2) target women's professional development needs within the context of helping all faculty maximize their faculty appointments, including helping men become more effective mentors of women; (3) assess which institutional practices tend to favor men's over women's professional development, such as defining "academic success" as largely an independent act and rewarding unrestricted availability to work (i.e., neglect of personal life); (4) enhance the effectiveness of search committees to attract women candidates, including assessment of group process and of

how candidates' qualifications are defined and evaluated; and (5) financially support institutional Women in Medicine programs and the AAMC Women Liaison Officer and regularly monitor the representation of women at senior ranks.

Cain JM, Schulkin J, Parisi V, Power ML, Holzman GB, Williams S. Effects of perceptions and mentorship on pursuing a career in academic medicine in obstetrics and gynecology. Acad Med 2001;76(6):628-34.

PURPOSE: To understand the perceptions of residents and Fellows in obstetrics and gynecology about the impacts of race or ethnicity, gender, and mentorship experiences on pursuing careers in academic medicine. METHOD: Two surveys were administered: one to a sample of 2,000 Fellows of the American College of Obstetricians and Gynecologists, and one to the 4,814 obstetrics and gynecology residents taking the 1998 in-training examination. The questionnaires asked about demographics, perceptions about careers in academic medicine, and residents' experiences with mentorship. RESULTS: Response rates were 96.8% for residents and 40.6% for FELLOWS: Of the residents, 26.1% indicated they would not consider a career in academic medicine. First-year women residents were more inclined to pursue careers in academic medicine than were first-year men (p =.042), but their interest declined during residency. Women residents (43%)-especially minorities-felt that men were mentored and recruited more for faculty positions, while men (38%) felt that women were mentored and recruited more. Fellows' reports of recruitment did not differ by gender. Most white residents did not perceive racial or ethnic bias in mentoring or recruiting, while most non-white residents did. Almost one third of non-white women residents felt that supervisors were more likely to condescend to women and minority individuals. CONCLUSIONS: It is likely that neither men nor women residents in obstetrics and gynecology receive adequate mentorship for careers in academic medicine. Perceptions of bias are a serious barrier to developing racial, ethnic, and gender diversity in leadership positions.

Carr PL, Ash AS, Friedman RH, Szalacha L, Barnett RC, Palepu A, Moskowitz MM. Faculty perceptions of gender discrimination and sexual harassment in academic medicine. Ann Intern Med 2000;132(11):889-96.

BACKGROUND: Gender-based discrimination and sexual harassment are common in medical practice and may be even more prevalent in academic medicine. OBJECTIVE: To examine the prevalence of gender-based discrimination and sexual harassment among medical school faculty and the associations of gender-based discrimination with number of publications, career satisfaction, and perceptions of career advancement. DESIGN: A self-administered mailed questionnaire of U.S. medical school faculty that covered a broad range of topics relating to academic life. SETTING: 24 randomly selected medical schools in the contiguous United States. PARTICIPANTS: A random sample of 3332 full-time faculty, stratified by specialty, graduation cohort, and sex. MEASUREMENTS: Prevalence of self-reported experiences of discrimination and harassment, number of peer-reviewed publications, career satisfaction, and perception of career advancement. RESULTS: Female faculty were more than 2.5 times more likely than male faculty to perceive gender-based discrimination in the academic environment (P < 0.001). Among women, rates of reported discrimination ranged from 47% for the youngest faculty to 70% for the oldest faculty. Women who reported experiencing negative gender bias had similar productivity but lower career satisfaction scores than did other women (P< 0.001). About half of female faculty but few male faculty experienced some form of sexual harassment. These

experiences were similarly prevalent across the institutions in the sample and in all regions of the United States. Female faculty who reported being sexually harassed perceived gender-specific bias in the academic environment more often than did other women (80% compared with 61 %) and more often reported experiencing gender bias in professional advancement (72% compared with 47%). Publications, career satisfaction, and professional confidence were not affected by sexual harassment, and self-assessed career advancement was only marginally lower for female faculty who had experienced sexual harassment (P = 0.06). CONCLUSION: Despite substantial increases in the number of female faculty, reports of gender-based discrimination and sexual harassment remain common.

Carr PL, Ash AS, Friedman RH, Scaramucci A, Barnett RC, Szalacha L, Palepu A, Moskowitz MA. Relation of family responsibilities and gender to the productivity and career satisfaction of medical faculty. Ann Intern Med. 1998;129(7):532-8.
BACKGROUND: Studies have found that female faculty publish less, have slower career progress, and generally have a more difficult time in academic careers than male faculty. The relation of family (dependent) responsibilities to gender and academic productivity is unclear. OBJECTIVE: To describe dependent responsibilities by gender and to identify their relation to the aspirations, goals, rate of progress, academic productivity, and career satisfaction of male and female medical school faculty. DESIGN: 177-item survey questionnaire. SETTING: 24 randomly selected medical schools in the contiguous United States. PARTICIPANTS: 1979 respondents from a probability sample of full-time academic medical school faculty. MEASUREMENTS: The main end point for measuring academic productivity was the total number of publications in refereed journals. Perceived career progress and career satisfaction were assessed by using Likert scales. RESULTS: For both male and female faculty, more than 90% of time devoted to family responsibilities was spent on child care. Among faculty with children, women had greater obstacles to academic careers and less institutional support, including research funding from their institutions (46% compared with 57%; P < 0.001) and secretarial support (0.68 full-time equivalents compared with 0.83 full-time equivalents; P = 0.003), than men. Compared with men with children, women with children had fewer publications (18.3 compared with 29.3; P < 0.001), slower self-perceived career progress (2.6 compared with 3.1; P < 0.001), and lower career satisfaction (5.9 compared with 6.6; P < 0.001). However, no significant differences between the sexes were seen for faculty without children. CONCLUSIONS: Compared with female faculty without children and compared with men, female faculty with children face major obstacles in academic careers. Some of these obstacles can be easily modified (for example, by eliminating after-hours meetings and creating part-time career tracks). Medical schools should address these obstacles and provide support for faculty with children.

Carr PL, Friedman RH, Moskowitz MA, Kazis LE. Comparing the status of women and men in academic medicine. Ann Intern Med 1993;119(9):908-13.
OBJECTIVE: To explore the status and academic productivity of women compared with men in academic internal medicine. DESIGN: Mail survey done in 1986. SETTING: A total of 107 major teaching hospitals in the United States. PARTICIPANTS: Full-time (1693 of 2510) faculty in cardiology, rheumatology, and general internal medicine; 67% of eligible men and 70% of eligible women. MEASUREMENTS: Academic productivity defined as research grants awarded, abstracts accepted, and papers published in refereed journals; academic advancement

as determined by academic rank and tenure status; and monetary compensation. RESULTS: Women entered academic medicine with shorter periods of fellowship training and were less likely to be members in the Alpha Omega Alpha honor society, but they had job descriptions similar to those of men, with similar allocation of work between research, clinical, and teaching activities. After adjustment, women and men were similar in the numbers of research grants funded as principal investigator (1.9 compared with 2.0), abstracts accepted (6.8 compared with 6.1), and papers published in refereed journals (28.8 compared with 29.2; all with $P > 0.20$). Women were as likely as men to have tenure, but they had lower academic rank (full or associate professor; 33% compared with 47%, $P < 0.001$) and received less compensation ($72,000 compared with $79,600 annually; $P < 0.001$). CONCLUSION: Although women do similar professional tasks and achieve similar levels of academic productivity, they receive fewer rewards for their work, both in academic rank and monetary compensation.

Carr P, Friedman RH, Moskowitz MA, Kazis LE, Weed HG. Research, academic rank, and compensation of women and men faculty in academic general internal medicine. J Gen Intern Med 1992 Jul-Aug;7(4):418-23.

OBJECTIVE: To evaluate the status of men and women faculty in academic general internal medicine, including their professional training, faculty responsibilities, research performance, academic rank, and compensation, to determine whether systematic differences exist by gender. DESIGN/SETTING: The authors analyzed responses to a 55-part questionnaire sent to all full-time general internal medicine faculty at the major teaching hospitals in the United States. Unadjusted means were generated for men versus women faculty in demographics, training background, hours of work, professional time allocations, institutional support, professional self-assessment, research performance, academic rank, and compensation. Means were recalculated after adjusting for other variables using multivariate methods. RESULTS: The authors found no significant difference in the frequency of fellowship training between men and women faculty. Women and men perform similar professional activities, but even after multivariate adjustment, women devote less time to research and perceive less research skill and institutional support for their research, but have similar numbers of grants, abstracts, and publications in refereed journals and have similar academic ranks. Women faculty, however, receive lower compensation than do men faculty, even after adjustment. CONCLUSION: While the characteristics of men and women faculty are quite similar, including those defining their academic productivity, important differences exist in research time, perceived institutional support, and compensation. These differences cannot be explained by such obvious factors as age differentials, academic rank, or hours of work per week.

Cohen JJ. Time to shatter the glass ceiling for minority faculty. JAMA 1998 Sep 2;280(9):821-2.

We all know that several sizeable subgroups of the American population – principally African Americans, Native Americans, Mexican Americans, and mainland Puerto Ricans – remain severely underrepresented in the medical profession. Although they comprise almost a quarter of our countrymen and women, these subgroups of our population constitute less than 8% of practicing physicians. For academic medicine, the figures are even more disconcerting. Individuals from these underrepresented minority groups make up barely 3% of full-time faculty members in the US medical schools (excluding historically black and Puerto Rican medical schools). Now

comes word that this small group of minority scholars suffers from more than loneliness in our nation's medical schools; evidence is now at hand suggesting that underrepresented minority faculty with academic credentials comparable to their nonminority colleagues also have less success in gaining the upper rungs of the academic ladder.

Conley FK. Toward a more perfect world--eliminating sexual discrimination in academic medicine. N Engl J Med 1993 Feb 4;328(5):351-2.

We all live with a social concept, tacitly accepted by both men and women, that in the medical profession men are dominant and women subservient. It is because of long standing legacies like this one that sexual harassment is difficult to define and detect. Often, sexual harassment goes unnoticed until it effects the career of one powerful man, regardless of how many women or men of less stature have been affected in the past. Conley discusses definitions of, types of, circumstances surrounding, role stereotyping's role in, explanations for, and prevention of harassment in medicine.

Cujec, B, Oancia, T, Bohm, C, and Johnson, D. Career and parenting satisfaction among medical students, residents and physician teachers at a Canadian medical school. CMAJ 2000;162(5):637-40.

BACKGROUND: Studies of career and parenting satisfaction have focused separately on medical students, residents and practising physicians. The objective of this study was to compare satisfaction across a spectrum of stages of medical career. METHODS: A survey of incoming medical students, current medical students, residents and physician teachers at the University of Saskatchewan was conducted in the spring of 1997. Response rates were 77% (43/56), 81% (177/218), 65% (134/206) and 39% (215/554) respectively. Factors assessed in the stepwise regression analysis were the effect of sex, parenting and level of training on the likelihood of recommending parenting to medical students or residents, and on parenting dissatisfaction, job dissatisfaction, career dissatisfaction and the importance of flexibility within the college program to accommodate family obligations. RESULTS: More male than female physician teachers had partners (92% v. 81%, $p < 0.01$) and were parents (94% v. 72%, $p < 0.01$). Female physician teachers spent equal hours per week at work compared with their male counterparts (mean 52 and 58 hours respectively) and more than double the weekly time on family and household work (36 v. 14 hours, $p < 0.01$). Physician teachers were the most likely respondents to recommend parenting to residents and their peers. Residents were the most dissatisfied with their parenting time. At all career stages women were less likely than men to recommend parenting, were more dissatisfied with the amount of time spent as parents and were more likely to regard flexibility within the college program as beneficial. There were no sex-related differences in job dissatisfaction and career dissatisfaction. However, married women were more dissatisfied with their jobs than were married men. Job dissatisfaction was greatest among medical students, and career dissatisfaction was greatest among residents. INTERPRETATION: The optimal timing of parenthood appears to be upon completion of medical training. Women were less likely to recommend parenting, less satisfied with the time available for parenting and more likely to value flexibility within the college program to accommodate family needs. These differences did not translate into women experiencing more job or career dissatisfaction.

De Angelis, CD. Women in academic medicine: new insights, same sad news. The New England Journal of Medicine, 2000;342(6):426-427.
No abstract available.

de Groot J, Brunet A, Kaplan AS, Bagby M. A comparison of evaluations of male and female psychiatry supervisors. Acad Psychiatry. 2003 Spring;27(1):39-43.
OBJECTIVE: To assess whether male and female psychiatry supervisors are evaluated differently by psychiatry residents. METHODS: The University of Toronto Department of Psychiatry compiled anonymous supervisor evaluations completed semiannually by psychiatry residents over a period of 3 years. Male and female psychiatry supervisors' ratings were compared by using t-tests, effect estimates, and chi-square analyses. Results from these ratings were discussed in a resident focus group. RESULTS: Female psychiatry supervisors (n=76) were rated significantly lower than male supervisors (n=222), both overall (P<0.05) and in the areas of enthusiasm (P<0.05), clarity (P<0.05), and knowledge (P<0.001). CONCLUSIONS: Future studies comparing evaluations of supervision by male and female psychiatrists must control for academic rank, numbers of publications, and hours of teaching. Comparing evaluations of the various male-female supervisory pairs will be useful to assess for gender biases.

Fang D, Moy E, Colburn L, Hurley J. Racial and ethnic disparities in faculty promotion in academic medicine. JAMA 2000 Sep 6;284(9):1085-92.
CONTEXT: Previous studies have suggested that minority medical school faculty are at a disadvantage in promotion opportunities compared with white faculty. OBJECTIVE: To compare promotion rates of minority and white medical school faculty in the United States. DESIGN AND SETTING: Analysis of data from the Association of American Medical Colleges' Faculty Roster System, the official data system for tracking US medical school faculty. PARTICIPANTS: A total of 50,145 full-time US medical school faculty who became assistant professors or associate professors between 1980 and 1989. Faculty of historically black and Puerto Rican medical schools were excluded. MAIN OUTCOME MEASURES: Attainment of associate or full professorship among assistant professors and full professorship among associate professors by 1997, among white, Asian or Pacific Islander (API), underrepresented minority (URM; including black, Mexican American, Puerto Rican, Native American, and Native Alaskan), and other Hispanic faculty. RESULTS: By 1997, 46% of white assistant professors (13,479/28,953) had been promoted, whereas 37% of API (1123/2997; P<.001), 30% of URM (311/1053, P<.001), and 43% of other Hispanic assistant professors (256/598; P =.07) had been promoted. Similarly, by 1997, 50% of white associate professors (7234/14,559) had been promoted, whereas 44% of API (629/1419; P<.001), 36% of URM (101/280; P<.001), and 43% of other Hispanic (122/286; P =.02) associate professors had been promoted. Racial/ethnic disparities in promotion were evident among tenure and nontenure faculty and among faculty who received and did not receive National Institutes of Health research awards. After adjusting for cohort, sex, tenure status, degree, department, medical school type, and receipt of NIH awards, URM faculty remained less likely to be promoted compared with white faculty (relative risk [RR], 0.68 [99% confidence interval CI, 0.59-0.77] for assistant professors and 0.81 [99% CI, 0.65-0.99] for associate professors). API assistant professors also were less likely to be promoted (RR, 0.91 [99% CI, 0.84-0.98]), whereas API associate professors and other Hispanic assistant and associate professors were promoted at comparable rates. CONCLUSION: Our data

indicate that minority faculty are promoted at lower rates compared with white faculty. JAMA. 2000;284:1085-1092

Floge L, Merrill, DM., Tokenism Reconsidered: Male nurses and female physicians in a hospital setting. Social forces 1986;64(4):925-947.
Examined how gender as a status characteristic interacts with the effects of tokenism in 2 occupations where 1 gender group is in an extreme minority. Data were gathered by observation and interviewing at 2 hospitals, each having both male nurses and female physicians. It was hypothesized that the occupational advancement of males would be aided, rather than hindered, by the perceptual tendencies arising from tokenism (i.e., heightened visibility, contrast, assimilation). Findings indicate gender interacted with tokenism, resulting in more positive outcomes for men and more negative outcomes for women. Several organizational and occupational factors are identified that affect the importance of tokenism and its interactions with gender.

Foster SW, McMurray JE, Linzer M, Leavitt JW, Rosenberg M, Carnes M. Results of a gender-climate and work-environment survey at an academic health center. Acad Med 2000 Jun;75(6):653-60.
PURPOSE: To determine how faculty's perceptions of medical school gender climate differ by gender, track, rank, and departmental affiliation. METHOD: In 1997, a 115-item questionnaire was sent to all University of Wisconsin Medical School faculty to assess their perceptions of mentoring, networking, professional environment, obstacles to a successful academic career, and reasons for considering leaving academic medicine. Using Fisher's exact two-tailed test, the authors assessed gender differences both overall and by track, rank, and departmental cluster. RESULTS: Of the 836 faculty on tenure, clinician-educator, and clinical tracks, 507 (61%) responded. Although equal proportions of men and women had mentors, 24% of the women (compared with 6% of men; $p < .001$) felt that informal networking excluded faculty based on gender. Women's and men's perceptions differed significantly ($p < .001$) on 12 of 16 professional environment items ($p < .05$ on two of these items) and on five of six items regarding obstacles to academic success. While similar percentages of women and men indicated having seriously considered leaving academic medicine, their reasons differed: women cited work-family conflicts (51%), while men cited uncompetitive salaries (59%). These gender differences generally persisted across tracks, ranks, and departmental clusters. The greatest gender differences occurred among clinician-educators, associate professors, and primary care faculty. CONCLUSIONS: Women faculty perceived that gender climate created specific, serious obstacles to their professional development. Many of those obstacles (e.g., inconvenient meeting times and lack of child care) are remediable. These data suggest that medical schools can improve the climate and retain and promote women by more inclusive networking, attention to meeting times and child care, and improved professional interactions between men and women faculty.

Fried, L P. Francomano, C A. MacDonald, S M. Wagner, E M. Stokes, E J. Carbone, K M. Bias, W B. Newman, M M. Stobo, J D. JAMA. 276(11):898-905, 1996.
OBJECTIVE: To determine the gender-based career obstacles for women in an academic department of medicine and to report the interventions to correct such obstacles (resulting from the evaluation) and the results of these interventions. DESIGN: Intervention study, before-after trial, with assessment of faculty concerns and perceived change through structured,

self-administered questionnaires. SETTING: The Department of Medicine, The Johns Hopkins University School of Medicine, Baltimore, Md. PARTICIPANTS: Full-time faculty. INTERVENTIONS: Multifaceted intervention from 1990 through 1995 to correct gender-based career obstacles reported by women faculty, including problem identification, leadership, and education of faculty, and interventions to improve faculty development, mentoring, and rewards and to reduce isolation and structural career impediments. MAIN OUTCOME MEASURES: Retention and promotion of deserving women faculty, salary equity, quality of mentoring, decreased isolation from information and colleagues, integration of women faculty into the scientific community, and decreased manifestations of gender bias. RESULTS: Junior women were retained and promoted, reversing previous experience, with a 550% increase in the number of women at the associate professor rank over 5 years (from 4 in 1990 to 26 in 1995). Interim 3-year follow-up showed a 183% increase in the proportion of women faculty who expected they would still be in academic medicine in 10 years (from 23% [7/30] in 1990 to 65% [30/46] in 1993). One half to two thirds of women faculty reported improvements in timeliness of promotions, manifestations of gender bias, access to information needed for faculty development, isolation, and salary equity. Men also reported improvements in these areas. CONCLUSIONS: The outcomes reported here indicate that it is possible to make substantive improvements in the development of women's careers, that an institutional strategy to this end can be successful in retaining women in academic medicine, and that such interventions are likely to benefit all faculty. Long-term interventions appear essential.

Gannon F, Quirk S, Guest S. Searching for discrimination. Are women treated fairly in the EMBO postdoctoral fellowship scheme? EMBO Rep. 2001 Aug;2(8):655-7.
In response to Wenneras & Wold's 1997 study on gender bias in awarding postdoctoral fellowships in Sweden, the European Molecular Biology Organization (EMBO) analyzed their own evaluation scheme to determine whether there was a similar bias in their process. They determined that for the years 1996-2001, female applicants were 20% less successful than their male colleagues in being awarded long-term fellowships. It was also found that the women applicants had published more papers than the men, and this was especially true for the successful applicants (7.1 vs. 5.8). But upon further examination, it was found that the men had papers of higher impact factor and had more first author papers as compared to the female candidates. If the selection committee gave more importance to the quality of the publications instead of the number, it could be concluded that the female applicants were of lower quality than the male applicants. Therefore it was concluded that women needed more publications to be successful, but men required a higher impact factor to be successful. The authors observed that there might not be any clear discrimination or bias against the women applicants, but there is something wrong with a system that continually results in lower proportions of successful female applicants.

Harari E. The doctor's troubled marriage. Aust Fam Physician 1998 Nov;27(11):999-1004.
BACKGROUND: Reports about the health of doctors have included claims of an increased risk of unhappy marital and family relationships. Recent studies cast doubt on these pessimistic conclusions but certain patterns of troubled marriages seem to exist, as do certain stressors, to which doctors may be particularly susceptible. Especially for doctor doctor marriages, in which half of female physicians participate. OBJECTIVE: To describe the individual and interpersonal

dynamics of problematic marriages commonly encountered among medical practitioners and to review some common stressors in medical marriages in general. DISCUSSION: Three commonly encountered patterns of troubled marriages are described and the ways they develop in the context of medical training and practice. The large increase in the number of women doctors in the past 20 years has brought new challenges to women and men seeking to balance their family and professional commitments. Often physicians marry to cope with the heavy burdens of medical school, but then once they graduate, they no longer share any common ground. Female physicians in dual physician marriages are also more likely to work part-time or choose a generalist career.

Hart P. Women in medical research; headaches and hurdles. J Gastroenterol Hepatol 1996;11(9);885-7.

Very few women have professorial status in Australian medical schools. However, there are approximately equal numbers of male and female PhD students in biomedical research at Australian universities. At Flinders University of South Australia, females comprise approximately 25% of academics in the School of Medicine, with 75% of general staff (including research staff without academic status, e.g. research assistants, research officers) being female. Females comprise 29% of Fellows in the highly competitive Career Awards Scheme of the National Health and Medical Research Council of Australia (NHMRC; 26% excluding those of the lowest rank, namely RD Wright Fellows). In both systems, a higher percentage of women are appointed to the lower levels. The statistics suggest that the main hurdle for women in medical research is the inability to progress in the postdoctoral ranks (e.g. appointment to, or promotion from, academic Level A/B positions (Tutor/Lecturer) or appointment to the NHMRC Research Fellowships Scheme). This may reflect the conflicts that women face in their debate of the priorities of family (children and partner) versus career, or research versus teaching and professional activities. All medical research is time-demanding and continuing research funds are difficult to obtain. Women and men have similar success rates for obtaining funds from the NHMRC. However, a greater percentage of women academics do not apply for grants. Why? Can women be helped to play a larger role in medical research?

Hostler SL, Gressard, RP. Perceptions of the gender fairness of the medical education environment. J Am Med Womens Assoc 1993 Mar-Apr;48(2):51-4.

Many medical institutions are making an effort to create "gender-fair" environments. Perceptions of the current state of the environment may have implications for progress toward this goal. We surveyed faculty, housestaff, and medical students at the University of Virginia School of Medicine (UVASOM) to determine their perceptions of the status of women at that institution. The results showed that women perceived their environment as significantly more inequitable and sexist than their male counterparts did. Women faculty perceived significantly more inequity and sexism than women housestaff or students. Comments from both women and men at UVASOM focused on the need to eliminate discrimination of all kinds and to recruit more women faculty as leaders, mentors, and role models. The UVASOM is now implementing recommendations that should significantly reduce the discrepancy in perceptions of its environment.

Jacobs CD, Bergen MR, Korn D. Impact of a program to diminish gender insensitivity and sexual harassment at a medical school. Acad Med 2000 May;75(5):464-9.
PURPOSE: To measure the effect of an intervention to reduce gender insensitivity and sexual harassment at one medical school. METHOD: Stanford University School of Medicine undertook a multifaceted program to educate faculty and students regarding gender issues and to diminish sexual harassment. The authors developed a survey instrument to assess the faculty's perceptions regarding environment (five scales) and incidences of sexual harassment. Faculty were surveyed twice during the interventions (1994 and 1995). RESULTS: Between the two years, the authors measured significant improvements in mean ratings for positive climate (p = .004) and cohesion (p = .006) and decreases in the faculty's perceptions of sexual harassment (p = 0006), gender insensitivity (p = .001), and gender discrimination (p = .004). The faculty also reported fewer observations of harassing behavior during the study period. CONCLUSIONS: An intervention program to diminish gender insensitivity and sexual harassment can measurably improve a medical school's environment.

Johansson EE, Risberg G, Hamberg K, Westman G. Gender bias in female physician assessments. Women considered better suited for qualitative research. Scand J Prim Health Care. 2002 Jun;20(2):79-84.
OBJECTIVE: To analyse whether physician assessment of scientific quality is biased by gender. DESIGN: Two fictive research abstracts on back pain treatment were constructed, one with a quantitative and one with a qualitative design. Authorship was assigned to either a woman or a man. SUBJECTS: 1637 randomly selected Swedish physicians were asked to judge the scientific quality of the two designs in a structured assessment form. MAIN OUTCOME MEASURES: The assessments of 1364 abstracts (286 female and 394 male assessors) were analysed by chi-square test and logistic regression. RESULTS: The quantitative design was judged the same, regardless of the gender of the author or assessor. The qualitative design, however, was ranked as more accurate, trustworthy, relevant and interesting with a female author. Women assessors upgraded female authors more than male authors, while male assessors reflected no gender differences. Assessor specialty interacted with judgment; physicians in primary care appreciated the qualitative abstract more than hospital physicians did (OR 2.78; 95% CI 1.97-3.92). CONCLUSION: Gender seems to affect scientific evaluations. The results are worth considering in situations where research is judged and interpreted, in medical tutoring, research guidance, peer reviewing and certainly in forming evaluation committees for research funding.

Kalet AL, Fletcher KE, Ferdman DJ, Bickell NA. Defining, navigating and negotiating success. The experiences of mid-career Robert Wood Johnson clinical scholar women. J Gen Intern Med 2006;21:920-5.
BACKGROUND: We studied female graduates of the Robert Wood Johnson Clinical Scholars Program (CSP, Class of 1984 to 1989) to explore and describe the complexity of creating balance in the life of mid-career academic woman physicians. METHODS: We conducted and qualitatively analyzed (κ 0.35 to 1.0 for theme identification among rater pairs) data from a semi-structured survey of 21 women and obtained their curricula vitae to quantify publications and grant support, measures of academic productivity. RESULTS: Sixteen of 21 (76%) women completed the survey. Mean age was 48 (range: 45 to 56). Three were full professors, 10 were associate professors, and 3 had left academic medicine. Eleven women had had children (mean

2.4; range: 1 to 3) and 3 worked part-time. From these data, the conceptual model expands on 3 key themes: (1) defining, navigating, and negotiating success, (2) making life work, and (3) making work work. The women who described themselves as satisfied with their careers (10/16) had clarity of values and goals and a sense of control over their time. Those less satisfied with their careers (6/16) emphasized the personal and professional costs of the struggle to balance their lives and described explicit institutional barriers to fulfillment of their potential. CONCLUSION: For this group of fellowship-prepared academic women physicians satisfaction is achieving professional and personal balance.

Kaplan SH, Sullivan LM, Dukes KA, Phillips CF, Kelch RP, Schaller JG. Sex differences in academic advancement. Results of a national study of pediatricians. N Engl J Med 1996 Oct 24;335(17):1282-9.

BACKGROUND: Although the numbers of women in training and in entry-level academic positions in medicine have increased substantially in recent years, the proportion of women in senior faculty positions has not changed. We conducted a study to determine the contributions of background and training, academic productivity, distribution of work time, institutional support, career attitudes, and family responsibilities to sex differences in academic rank and salary among faculty members of academic pediatric departments. METHODS: We conducted a cross-sectional survey of all salaried physicians in 126 academic departments of pediatrics in the United States in January 1992. Of the 6441 questionnaires distributed, 4285 (67 percent) were returned. The sample was representative of U.S. pediatric faculty members. Multivariate models were used to relate academic rank and salary to 16 independent variables. RESULTS: Significantly fewer women than men achieved the rank of associate professor or higher. For both men and women, higher salaries and ranks were related to greater academic productivity (more publications and grants), more hours worked, more institutional support of research, greater overall career satisfaction, and fewer career problems. Less time spent in teaching and patient care was related to greater academic productivity for both sexes. Women in the low ranks were less academically productive and spent significantly more time in teaching and patient care than men in those ranks. Adjustment for all independent variables eliminated sex differences in academic rank but not in salary. CONCLUSIONS: Lower rates of academic productivity, more time spent in teaching and patient care and less time spent in research, less institutional support for research, and lower rates of specialization in highly paid subspecialties contributed to the lower ranks and salaries of female faculty members.

Kondro W. Affirmative action needed to give women fair shot at research chairs? CMAJ 2002 Oct 15;167(8):910.

Canada's universities will soon be asked to justify why more women aren't being nominated for lucrative Canada Research Chair positions. Part of this move will include a suggestion for universities to provide written rationales for the gender distribution of nominees in future competitions for chairs. This article discusses the current circumstances surrounding the status of women in medicine and the projected outcomes of this new suggestion.

Kvaerner KJ, Aasland OG, Botten GS. Female medical leadership: cross sectional study. BMJ 1999 Jan 9;318(7176):91-4.

OBJECTIVE: To assess the relation between male and female medical leadership. DESIGN: Cross sectional study on predictive factors for female medical leadership with data on sex,

age, specialty, and occupational status of Norwegian physicians. SETTING: Oslo, Norway. SUBJECTS: 13 844 non-retired Norwegian physicians. MAIN OUTCOME MEASURE: Medical leaders, defined as physicians holding a leading position in hospital medicine, public health, academic medicine, or private health care. RESULTS: 14.6% (95% confidence interval 14.0% to 15.4%) of the men were leaders compared with 5.1% (4.4% to 5.9%) of the women. Adjusted for age men had a higher estimated probability of leadership in all categories of age and job, the highest being in academic medicine with 0.57 (0.42 to 0.72) for men aged over 54 years compared with 0.39 (0.21 to 0.63) for women in the same category. Among female hospital physicians there was a positive relation between the proportion of women in their specialty and the probability of leadership. CONCLUSION: Women do not reach senior positions as easily as men. Medical specialties with high proportions of women have more female leaders.

Lefebvre, Y. Women's health and gender issues in academic medicine. Can J Ob/Gyn Women's Health Care 1993;5(5):499-507.
More women becoming involved in academic medicine improves not only equal opportunity but also enhances the unique contributions that women bring to the practice of medicine. These issues were addressed by a task force of the Faculty of Medicine, University of Ottawa, beginning in 1991. The follow highlights of the Task Force report focus on women's health issues in medical and graduate education and research, and the integration of women into the faculty of medicine.

Leopando, ZE. Women leadership in family medicine: Experience of member organizations of the Wonca World Organizations of Family Doctors 2001. Unpublished, 2003.
The World Organization of Family Doctors (Wonca) is the organization which represents the discipline of Family Medicine/General Practice around the world. At the global level, it has a world council as the highest governing body which meets every three years. In the interim, it has an elected World Executive Committee which makes decisions. When this survey was done between February to April in 2001, there were 65 member organizations affiliated with Wonca. During the last three consecutive World Council meetings of Wonca (1995, 1998, 2001) there were more men than women in the World Council and World Executive Committee. As part of the workshop on Women and Leadership in Family Medicine held in Durban, South Africa in May, 2002, the author conducted a survey with the aim of determining the degree of participation of women in family medicine in various organizations. It also aimed to determine the participation of women in family medicine in decision making and leadership. Lastly, it aimed to determine the enablers and barriers in women's participation as leaders. Survey was done mainly through email from February to April 2001. There were 35 responses from the same number of member organizations. The average length of existence of member organization was 25.6 years; the average percentage of women members was 47.7%. 88.6% of member organizations had elected women to their council, 42.9% had elected women presidents, and 34.3% had sent women to be their representative to Wonca Council. 25.7% had elected women to the three positions. 45.8% had women chairs of departments of family medicine. The enablers who facilitated the assumptions of women to leadership positions were categorized into qualities of women, organizational practices and culture of society. The barriers, which hindered the participation of women in leadership positions, were categorized into culture of society, family responsibilities. Conditions in society, which promoted gender sensitivity, were

the political climate and legislation, culture and social conditions. However, culture also played a very important part in promoting discrimination against women. There is a need to improve the participation of women in decision making. It is envisioned that the newly organized working party for women in Wonca will play an advocacy role for women and enhance women's participation in decision-making.

Levinson W, Kaufman K, Clark B, Tolle SW. Mentors and role models for women in academic medicine. West J Med 1991 Apr;154(4):423-6.
Senior mentors and role models have a positive influence on the career advancement of junior professionals in law, business, and medicine. In medicine an increasing number of women are pursuing academic careers, but available senior mentors to provide career guidance are often lacking. We report on the results of a national survey of 558 full-time faculty women, aged 50 years and younger, in departments of medicine in the United States, regarding their experience with role models and mentors. Women with mentors report more publications and more time spent on research activity than those without mentors. Women with a role model reported higher overall career satisfaction. This report, with illustrative examples, may be helpful to other women pursuing academic careers and to physicians who serve as mentors or role models to others.

Levinson W, Kaufman K, Tolle SW. Women in academic medicine: strategies for balancing career and personal life. J Am Med Womens Assoc 1992 Jan-Feb;47(1):25-8.
We conducted a national survey to explore how women in academic medicine balance career and family responsibilities. A questionnaire was mailed to all women 50 years of age and under who held full-time appointments in departments of medicine (N = 862) as listed in the faculty roster of the Association of American Medical Colleges. This paper describes the types of coping strategies the respondents use to balance career and personal life. Seventy-seven percent of respondents (430) reported at least one coping strategy. The 1,117 strategies were grouped into 4 general categories: changing structural aspects of their lives, increasing efficiency, limiting personal expectations, and social support. Illustrative examples of each of the categories and their subcategories are provided. In addition, the association between respondent demographics and coping methods is examined. This study describes the diverse and creative methods women faculty use to balance career and personal lives. We believe that sharing the coping strategies of these respondents will be helpful to other physicians who face similar challenges in their lives and to women medical students planning careers in academic medicine.

Levinson W, Tolle SW. Academic general medicine and motherhood: in search of a balance. J Gen Intern Med 1986 Nov-Dec;1(6):421-2.
Academic general medicine encompasses long and unpredictable hours, and as more women enter the field of general medicine, it is becoming more important to address the issues surrounding general medicine and motherhood. Levinson and Tolle recount their experiences at the workplace six weeks following childbirth, and offer suggestions to better the transition for new mothers and new fathers alike.

Levinson W, Tolle SW, Lewis C. Women in academic medicine. Combining career and family. N Engl J Med 1989 Nov 30;321(22):1511-7.
We conducted a national survey to explore how women in academic medicine balance career and family responsibilities. A questionnaire was mailed to all women 50 years of age and under

who held full-time appointments in departments of medicine (n = 862), as listed in the faculty roster of the Association of American Medical Colleges. The survey included questions about childbearing and child rearing, attitudes about personal and professional issues, and role models. Of the 694 questionnaires that were delivered, over 80 percent were completed (n = 558). The mean age of the respondents was 38.1 years, and 63 percent had children. The 350 mothers had a mean of 1.9 children; only 3 had 4 or more children. Approximately half the respondents with children had their first child after completing medical training (mean age, 30.6 years), and they were absent from work for a median of 6 weeks post partum; 72 percent took no time off before labor and delivery, and 83 percent were back at work within 12 weeks. The majority were satisfied with their decision to have children and with their careers, despite the fact that 78 percent believed that their career progress had been slowed or markedly slowed by their having had children. We conclude that it is possible for women to combine motherhood with a fulfilling career in academic medicine, but it is difficult, and most such women believe that motherhood slows the progress of their careers.

Levinson W, Kaufman K, Bickel, J. Part-time faculty in academic medicine: present status and future challenges. Annals of Internal Medicine 1993;119(3):220-5.
OBJECTIVE: To determine the number, personal and professional characteristics, and attitudes of part-time medicine faculty. PARTICIPANTS: Part-time faculty in departments of medicine were identified by the chairs of medicine and faculty roster representatives of the Association of American Medical Colleges for each U.S. medical school and by a survey of faculty. MEASUREMENTS: A 79-item questionnaire including questions about working conditions, attitudes toward professional and personal issues, and institutional policies. RESULTS: A total of 245 eligible questionnaires were returned (69% of the estimated number of eligible part-time faculty). Sixty-three percent were men and 27% were women. Women faculty worked an average of 35 h/wk, combining their careers with childbearing, whereas men worked 51 h/wk, divided between their faculty position and private practice. Respondents' work time was devoted to teaching and patient care, with no time dedicated for research. Most faculty (86%) were in nontenured track positions; approximately one half (47%) developed the position themselves. Only 8% reported that existing institutional policies allowed part-time faculty more time to reach promotion and tenure standards. A high degree of career satisfaction existed (mean score, 8.6 on a 10-point scale) even though faculty believe that part-time status makes promotion more difficult and negatively influences colleagues' perceptions of them. CONCLUSION: We estimate that more than 400 faculty work part time in departments of medicine in U.S. medical schools. The majority are men who combine academic careers with private practice. Most part-time faculty work as clinician/teachers in nontenure track positions and are satisfied with their careers.

Lewis-Stevenson S, Hueston WJ, Mainous AG 3rd, Bazell PC, Ye X. Female and underrepresented minority faculty in academic departments of family medicine: are women and minorities better off in family medicine? Fam Med 2001 Jun;33(6):459-65.
BACKGROUND: Several studies have shown that the percentage of women represented in senior academic positions at US medical schools is lower than the percentage of men in senior positions. Similarly, the percentage of minority faculty members represented in senior academic positions is lower than that of their majority counterparts. This study assessed whether these findings were also present in departments of family medicine and identified any factors related

to the institution or department that favored academic success for women and minorities. METHODS: Data regarding faculty workforce composition, including faculty rank and rank for women and underrepresented minorities, were extracted from a comprehensive survey of departments of family medicine at US allopathic medical schools. The data are based on faculty workforce in 1997 and include responses from 58 (51%) of all schools with a department of family medicine. RESULTS: Faculty in departments of family medicine were more likely to be female (41% versus 25%) and an underrepresented minority (9% versus 4%), compared with all academic medicine disciplines. However, women in full-time positions were less likely than men, and minorities were less likely than nonminorities, to be either an associate or full professor. We could find no institutional or departmental characteristics that were associated with academic success for women or minority faculty members. CONCLUSIONS: While women and underrepresented minorities are more common to the faculty workforce in family medicine, members of both of these groups are not well represented in senior faculty ranks.

Limacher MC, Zaher CA, Walsh MN, Wolf WJ, Douglas PS, Schwartz JB, Wright JS, Bodycombe DP. Journal of the American College of Cardiology. 1998;32(3):827-35. The ACC professional life survey: career decisions of women and men in cardiology. A report of the Committee on Women in Cardiology. American College of Cardiology.
OBJECTIVES: This survey was conducted to learn how the career decisions of women and men in cardiology influenced their professional and personal lives. BACKGROUND: Women represent only 5% of practicing adult cardiologists and 10% of trainees. Yet, women and men now enter medical school at nearly equal numbers. The factors that contribute to career satisfaction in cardiology should be identified to permit the development of future strategies to ensure that the best possible candidates are attracted to the profession. METHODS: A questionnaire developed by the Ad Hoc Committee on Women in Cardiology of the American College of Cardiology (ACC) was mailed in March 1996 to all 964 female ACC members and an age-matched sample of 1,199 male members who had completed cardiovascular training. RESULTS: Women were more likely to describe their primary or secondary role as a clinical/noninvasive than invasive cardiologist ($p < 0.0001$ women vs. men). Men and women both reported a high level of satisfaction with family life, but women were less satisfied with their work as cardiologists (88% vs. 92%, $p < 0.01$) and with their level of financial compensation. Compared with men, women expressed less overall satisfaction (69% vs. 84%) and more dissatisfaction with their ability to achieve professional goals (21% vs. 9%). These differences were most pronounced for women in academic practice. Women reported greater family responsibilities, which may limit their opportunities for career advancement. Women were more likely to alter training or practice focus to avoid radiation. A majority of women (71%) reported gender discrimination, whereas only 21% of men reported any discrimination, largely due to race, religion or foreign origin. CONCLUSIONS: Women cardiologists report overall lower satisfaction with work and advancement, particularly within academic practice. They report more discrimination, more concerns about radiation and more limitations due to family responsibilities, which may ultimately explain the low percentage of women in cardiology. Attention to these issues may result in programs to improve professional satisfaction and attract the best candidates into cardiology in the future.

McGuire LK, Bergen MR, Polan ML. Career advancement for women faculty in a U.S. school of medicine: perceived needs. Acad Med. 2004;79(4):319-25.
PURPOSE: The percentage of women faculty at the professor level has remained at approximately 11%. The medical community could benefit from knowing what is required to attract, retain, and advance women in the academy. METHOD: The Committee on Women in Medicine and Science at Stanford University School of Medicine was charged with improving career success and well-being of women faculty. In 2001-02, a survey instrument including both needs and perceived school climate was sent to 309 women faculty. Responses were analyzed using one-way analyses of variance with Tukey follow-up tests. RESULTS: A total of 163 (53%) faculty responded. The highest ranked needs were a flexible work environment without negative consequences for women with young children (mean = 4.37 on a five-point scale); a three-month sabbatical from clinical and administrative duties (mean = 4.15); departmental mentoring for academic career development (mean = 4.13); and school/departmental administrative secretarial support for grant and manuscript preparation (mean = 4.11). Climate data obtained in 2002, compared to data from similar surveys in 1994 and 1995, showed a nonsignificant decrease in mean ratings for sexual harassment, gender discrimination, and gender insensitivity in the intervening years. Mean ratings for positive climate and cohesion increased between 1994 and 1995 but remained stable from 1995 to 2002. Results of the survey were presented to the dean, faculty, and staff of the medical school. CONCLUSION: Women faculty members were able to clearly indicate specific interventions that would improve their career success and sense of well-being. Since administrators are committed to serious consideration of these recommendations, this was a key step in advancing women's careers in academic medicine at Stanford.

Nonnemaker L. Women physicians in academic medicine: new insights from cohort studies. N Engl J Med 2000;342(6):399-405.
BACKGROUND: I conducted a study to determine whether women who graduate from medical schools are more or less likely than their male counterparts to pursue full-time careers in academic medicine and to advance to the senior ranks of medical school faculties. METHODS: The rates of advancement to the ranks of assistant, associate, and full professor for all U.S. medical school graduates from 1979 through 1993 and for all members of U.S. medical school faculties from 1979 through 1997 were studied. Cohorts were defined on the basis of the year of graduation from medical school, track (tenure or nontenure), and academic department. Within each cohort, the number of women who advanced to a senior rank was compared with the number that would be expected on the basis of parity between men and women, and 95 percent confidence intervals were calculated. RESULTS: Women were significantly more likely than men to pursue an academic career. During the study period, 634 more women became faculty members than expected. The numbers were higher in the older cohorts than in the younger cohorts. The numbers of women who advanced to the ranks of associate and full professor were significantly lower than the expected numbers. This was true for both tenure and nontenure tracks, even after adjustment for the department. A total of 334 fewer women advanced to associate professor than expected, and 44 fewer women advanced to full professor than expected. CONCLUSIONS: Disparities persist in the advancement of men and women on medical school faculties. However, the numbers of women physicians at all levels of academic medicine are increasing.

Notzer N, Brown S. The feminization of the medical profession in Israel. Med Educ 1995;29(5):377-81.
Two factors have caused major changes in the gender composition of the Israeli medical profession in recent years: (i) a wave of immigration from the former USSR, which increased the doctor population by approximately 70% and which included a majority of women physicians, and (ii) the entry of more Israeli women into medical school. This report presents the current gender status of the Israeli medical profession, regarding students and physicians, and the choice of medical specialty and academic seniority, and compares gender differences in Israel with those in other countries. Traditional patterns of specialization persist in Israel, with women still concentrated in primary care (family medicine, paediatrics and psychiatry). In addition, women still face obstacles in entering the more prestigious (mainly surgical) specialties. Whilst the number of women in academic medicine has increased over the last decade, women are still concentrated in the lowest echelons of academic medicine. However, the steady trend towards the feminization of medicine will inevitably lead to an increase of women in all areas of the medical profession. Because cross-cultural studies have repeatedly revealed that women doctors have a more humanistic and personalized approach to patient care, a higher ratio of women in the profession should have a qualitative effect in this direction, despite the bureaucratic and fiscal constraints incumbent upon practising doctors. As more women become role models for medical students, their approach will influence the education of the doctors of the future.

Palepu A, Carr PL, Friedman RH, Amos H, Ash AS, Moskowitz MA. Minority faculty and academic rank in medicine. JAMA 1998;280(9):767-71.
CONTEXT: Previous studies have found that fewer minority medical school faculty hold senior professorial ranks than do majority faculty and may not be promoted as rapidly. OBJECTIVE: To determine whether minority faculty were as likely as majority faculty to have attained senior rank (associate professor or full professor) after adjusting for other factors that typically influence promotion. DESIGN: A self-administered mailed survey of US medical school faculty using the Association of American Medical Colleges database. The sample was stratified by department, graduation cohort, and sex. PARTICIPANTS: A stratified random sample of 3013 full-time faculty at 24 representative US medical schools. All underrepresented minority faculty at these schools were sampled. MAIN OUTCOME MEASURE: Attainment of senior academic rank (associate professor or full professor). RESULTS: Of 3013 faculty surveyed, 1807 (60.0%) responded, including 1463 white (81.0%), 154 black (8.5%), 136 Asian (7.5%), and 54 Hispanic (3.0%). Overall, 980 faculty (54%) had attained senior academic rank, including 47 (30.5%) of 154 black faculty, 59 (43.4%) of 136 Asian faculty, 22 (40.8%) of 54 Hispanic faculty, and 852 (58.3%) of 1463 white faculty. White faculty had significantly more first-authored and total peer-reviewed publications than the other groups. After adjusting for the medical school, department, years as medical school faculty, number of peer-reviewed publications, receipt of research grant funding, proportion of time in clinical activities, sex, and tenure status, we found that the odds ratios of holding senior rank relative to white faculty were 0.33 (95% confidence interval [CI], 0.17-0.63) for black faculty, 0.36 (95% CI, 0.12-1.08) for Hispanic faculty, and 0.58 (95% CI, 0.30-1.12) for Asian faculty. CONCLUSIONS: Minority faculty were less likely than white faculty to hold senior academic rank. This finding was not explained by potential confounders such as years as a faculty member or measures of academic productivity.

Palepu A, Carr PL, Friedman RH, Ash AS, Moskowitz MA. Specialty choices, compensation, and career satisfaction of underrepresented minority faculty in academic medicine. Acad Med 2000;75(2):157-60.
PURPOSE: Despite efforts to increase the numbers of underrepresented minorities (URMs), only 3.9% of medical school faculty are URMs. The authors compared the specialty choices, compensation, and career satisfaction of minority faculty with those of their majority counterparts to determine whether there were differences that might affect the recruitment and retention of minority faculty. METHOD: In 1995, the authors mailed a self-administered survey to a stratified random sample of 3,013 eligible full-time salaried faculty in 24 randomly selected medical schools. Those schools, which had at least 200 faculty, did not include the Puerto Rican or historically black medical schools. RESULTS: Of the eligible faculty surveyed, 1,807 (60%) responded; 1,463 were majority faculty, 195 were URM faculty, and 149 were other-minority faculty. Similar proportions of the three groups were in the primary care specialties. Only 11% of the URM respondents were in basic science departments. There was no significant difference in adjusted mean compensation between majority, URM, and other-minority faculty. However, URM faculty were significantly less satisfied with their careers (adjusted scores: 60 versus > 65; $p = .001$) and more often considered leaving academic medicine within five years (58% versus < 45%). CONCLUSION: Given the demographic changes of the U.S. population, these issues should be addressed by deans and department heads in order to enhance recruitment and facilitate retention of URM faculty in academic medicine.

Palepu A, Friedman RH, Barnett RC, Carr PL, Ash AS, Szalacha L, Moskowitz MA. Junior faculty members' mentoring relationships and their professional development in U.S. medical schools. Acad Med 1998;73(3):318-23.
PURPOSE: To determine (1) the prevalence of mentoring relationships for U.S. medical school junior faculty; (2) the quality of these mentoring relationships; (3) any variation by gender or race; and (4) the relationship between mentoring and junior faculty members' perceptions of institutional professional support; research-, teaching-, and clinical-skills development; allocation of time to professional activities; and career satisfaction. METHOD: In 1995 a 177-item survey was mailed to 3,013 full-time faculty at 24 randomly selected U.S. medical schools stratified on an area of medical specialization, graduation cohort, and gender. Mentoring was defined as "dynamic reciprocal relationship between an advanced career incumbent (the mentor) and a junior faculty member (the protege) aimed at fostering the development of the junior person/protege." Because mentoring is most crucial for junior faculty, the study focused on mentoring relationships within the previous three years ("recent mentoring") for faculty who were not full professors. Chisquare tests, analysis of variance, and principal-components analysis were used to analyze the data. RESULTS: In all, 1,808 (60%) of the 3,013 faculty surveyed, of whom 72% were junior faculty, returned completed questionaires. Fifty-four percent of the junior faculty had had a recent mentoring relationship. There was no significant difference between the men and the women faculty or between majority and minority faculty in the prevalence and quality of the mentoring relationships. The faculty with mentors rated their research preparation and research skills higher than did the faculty without mentors. Most of the women faculty (80%) and the minority faculty (86%) who had had mentors reported that it was not important to have a mentor of the same gender or minority group. CONCLUSION: Mentoring relationships are prevalent in academic medicine and should be promoted to support the career growth of junior faculty.

Palepu A and Herbert, CP. Medical Women in academia: the silence we keep. CMAJ 2002;167(8):877-879.
It is not uncommon for female physicians to experience "fatigue, stress, guilt, and 'role strain,' when going back to work following childbirth. Female physicians/mothers often feel they have to be "superwoman" and do it all: be the perfect physician and the perfect mom. Unfortunately, policies and workplace planning neglects to address key issues surrounding the professional/ parent dichotomy experienced by many women, and now many men, in academic medicine. Today, being both a physician and a parent presents both great practical and emotional issues. Palepu and Herbert discuss personal experiences and the experiences of others to demonstrate the strain women feel in academic medicine today. Furthermore, they discuss the issue of sexual harassment in the workplace. This piece also offers suggestions to remedy some of the issues surrounding women, parenthood, harassment, and academic medicine.

Reed V, Buddeberg-Fischer B. Career obstacles for women in medicine: an overview. Med Educ. 2001;35(2):139-47.
PURPOSE: This article describes the current position of women in the field of medicine. PROCEDURES: Material was gathered using a MEDLINE search for recent articles on women's career progress in medicine and data from the Association of American Medical Colleges. MAIN FINDINGS: Although women now make up a large proportion of the medical student body in industrialized nations, they are still under-represented in a number of disciplines and in the higher echelons of medicine. A number of possible obstacles to career goals that presumably act synergistically include domestic responsibilities, rigidity in career structures and discrimination. CONCLUSIONS: Organizations in the field of medicine can look to the business world for 'best practices' aimed at advancing women to incorporate in their own organization. Medical schools and other institutions are taking the issue seriously as can be seen from the variety of government and institution-based initiatives directed at improving the role of women in medicine.

Reichenbach, L, Brown, H. Gender and academic medicine: impacts on the health workforce. BMJ 2004:329:792-5.
Summary: This article examines three sections of academic training that affect the health workforce: enrolment, curriculum and promotion. Women have almost achieved gender equality in the number of women enrolling in medical schools. Unfortunately, the medical profession may become less powerful and influential as it becomes increasingly feminized. In the curriculum, training materials in academic medicine endorse a patriarchal view that neglects women's healthcare needs. In promotion, women advance more slowly than men, particularly in academic medicine, and there are far fewer women in leadership positions. Women also have fewer mentors and professional networks and less collegial support while in the academic medical system. A closer look at gender equity and the underlying injustices in the professional opportunity structure is required.

Richman RC, Morahan PS, Cohen DW, McDade SA. Advancing women and closing the leadership gap: the Executive Leadership in Academic Medicine (ELAM) program experience. J Womens Health Gend Based Med 2001;10(3):271-7.
Women are persistently underrepresented in the higher levels of academic administration despite the fact that they have been entering the medical profession in increasing numbers for at least

20 years and now make up a large proportion of the medical student body and fill a similar proportion of entry level positions in medical schools. Although there are no easy remedies for gender inequities in medical schools, strategies have been proposed and implemented both within academic institutions and more broadly to achieve and sustain the advancement of women faculty to senior level positions. Substantial, sustained efforts to increase programs and activities addressing the major obstacles to advancement of women must be put in place so that the contributions of women can be fully realized and their skills fittingly applied in meeting the medical education and healthcare needs of all people in the 21st century.

Schafer J. Despite progress women in academic medicine find glass ceiling still in place. J Investig Med 1997;45(5):211-20.
As female representation in medical school is now almost equal to that of men, the fact that women comprise only about 10 percent of leadership positions in academic medicine continues to be an issue. The opinions regarding tenure policies, leadership opportunities, family life and professional life, old boy's clubs, mentoring, salary differences, the "glass ceiling", the "double-edged sword," and suggestions for the future from a number of female doctors across the U.S. are reviewed throughout this article. The doctors include: Dr. Andrea Dunaif, Senior Director, Diabetes, Department of Medical and Scientific Affairs, Parke-Daivs; Dr. Janet Bickel Associate Vice President, Association of American Medical Colleges; Dr. Veronica Catanese, Assistant Professor of Internal Medicine, New York University School of Medicine; Dr. Laurie Glimcher, Irene Heinz Professor of Immunology, Harvard School of Public Health; Bernadine Healy, Dean, Ohio State University School of Medicine; and many others.

Smedstad K, Cohen M. Growing number of women physicians not reflected in academic medicine. CMAJ 1991;144(10):1313-5.
The CMA is currently studying the impact growing numbers of women physicians will have on the practice of medicine. In the following edited excerpts taken from a longer paper, Dr. Kari Smedstad, past president of the Federation of Medical Women of Canada, and Dr. May Cohen, who chaired the CMA's Ad Hoc Committee on Women's Issues, discuss two major issues facing women doctors and the medical profession in general: the shortage of women in the field of academic medicine and women's relationship to the health care system.

Smith C, Boulger J, Beattie K. Exploring the dual-physician marriage. Minn Med 2002;85(3):39-43.
A substantial number of female physicians marry fellow doctors, yet little is known about these dual-physician couples. In an effort to identify these couples, surveys were sent to 1,695 female physician members of the Minnesota Medical Association. Women who were or had been married to a physician were asked to complete the survey. The majority of women responding (n = 203) were between the ages of 36 and 45 and had married during medical school. 11% had married before medical school, 45% married during medical school and 25% married in residency. Only a small percentage (11.3%) were divorced, and medicine was reported to play a role in 69.6% of those separations. Questions were asked regarding work and family life, and job satisfaction levels. Despite many positive responses to the questionnaire, some problems existed in these marriages. Overall, however, responses indicated that the advantages of being married to another physician for outweigh the disadvantages.

Sobecks NW, Justice AC, Hinze S, Chirayath HT, Lasek RJ, Chren MM, Aucott J, Juknialis B, Fortinsky R, Youngner S, Landefeld CS. When doctors marry doctors: a survey exploring the professional and family lives of young physicians. Ann Intern Med 1999;130(4 Pt 1):312-9.

BACKGROUND: Soon, half of all physicians may be married to other physicians (that is, in dual-doctor families). Little is known about how marriage to another physician affects physicians themselves. OBJECTIVE: To learn how physicians in dual-doctor families differ from other physicians in their professional and family lives and in their perceptions of career and family. DESIGN: Cross-sectional survey. SETTING: Two medical schools in Ohio. PARTICIPANTS: A random sample of physicians from the classes of 1980 to 1990. MEASUREMENTS: Responses to a questionnaire on hours worked, income, number of children, child-rearing arrangements, and perceptions about work and family. RESULTS: Of 2000 eligible physicians, 1208 responded (752 men and 456 women). Twenty-two percent of male physicians and 44% of female physicians were married to physicians ($P < 0.001$). Men and women in dual-doctor families differed ($P < 0.001$) from other married physicians in key aspects of their professional and family lives: They earned less money, less often felt that their career took precedence over their spouse's career, and more often played a major role in child-rearing. These differences were greater for female physicians than for male physicians. Men and women in dual-doctor families were similar to other physicians in the frequency with which they achieved career goals and goals for their children and with which they felt conflict between professional and family roles. Marriage to another physician had distinct benefits ($P < 0.001$) for both men and women, including more frequent enjoyment from shared work interests and higher family incomes. CONCLUSIONS: Men and women in dual-doctor families differed from other physicians in many aspects of their professional and family lives, but they achieved their career and family goals as frequently. These differences reflect personal choices that will increasingly affect the profession as more physicians marry physicians.

Socolar RR, Kelman LS, Lannon CM, Lohr JA. Institutional policies of U.S. medical schools regarding tenure, promotion, and benefits for part-time faculty. Acad Med 2000;75(8):846-9.

PURPOSE: To collect data on institutional policies regarding tenure, promotions, and benefits for part-time faculty at U.S. medical schools and determine the extent to which part-time work is a feasible or attractive option for academic physicians. METHOD: In July 1996, the authors sent a 29-item questionnaire regarding tenure, promotions, and benefit policies for part-time faculty to respondents identified by the deans' offices of medical schools in the United States and Puerto Rico. Responses were analyzed using descriptive statistics and chi-square analyses. RESULTS: Respondents from 104 of 126 medical schools (83%) completed the questionnaire; 58 responded that their schools had written policies about tenure, promotion, or benefits for part-time faculty. Tenure. Of the 95 medical schools with tenure systems, 25 allowed part-time faculty to get tenure and 76 allowed for extending the time to tenure. Allowable reasons to slow the tenure clock included medical leave (65), maternity leave (65), paternity leave (54), other leave of absence (59). Only 23 allowed part-time status as a reason to slow the tenure clock. Policies written by the dean's office and from schools in the midwest or west were more favorable to part-time faculty's being allowed to get tenure. Promotions. The majority of respondents reported that it was possible for part-time faculty to serve as clinical assistant, assistant, associate, and full professors. Benefits. The majority of schools offered retirement benefits and health, dental, disability, and life

insurance to part-time faculty, although in many cases part-time faculty had to buy additional coverage to match that of full-time faculty. CONCLUSIONS: Most medical schools do not have policies that foster tenure for part-time faculty, although many allow for promotion and offer a variety of benefits to part-time faculty.

Tesch BJ, Osborne J, Simpson DE, Murray SF, Spiro J. Women physicians in dual-physician relationships compared with those in other dual-career relationships. Acad Med 1992;67(8):542-4.

This study compared the career and domestic responsibilities of women physicians whose domestic partners were physicians (WP-Ps) with those of women physicians whose domestic partners were not physicians (WP-NPs). They hypothesize that soon half of al female physicians will be involved in medial marriages. In 1988 the authors surveyed 602 women physicians in a large midwestern city regarding their career and domestic roles; 390 were physicians in training (students and residents), and 212 were physicians in practice (academic medicine and private practice). Overall, 382 (63%) responded; of the 382, 247 (65%) had domestic partners; of these 247, 91 (37%) were WP-Ps and 156 (63%) were WP-NPs. The WP-Ps were found to be twice as likely as the WP-NPs to interrupt their careers to accommodate their partners' careers. The WP-Ps also assumed significantly more domestic responsibilities and worked fewer hours practicing medicine than did the WP-NPs. The 163 women physicians in training (44-48%-of the WP-Ps and 119-76%-of the WP-NPs) demonstrated a more egalitarian division of labor overall, with no significant differences between the WP-Ps and the WP-NPs. The authors recommend that longitudinal studies be undertaken to determine whether women physicians in training continue this trend as they enter the practice of medicine.

Tesch BJ, Wood HM, Helwig AL, Nattinger AB. Promotion of women physicians in academic medicine. Glass ceiling or sticky floor? JAMA 1995;273(13):1022-5.

OBJECTIVE--To assess possible explanations for the finding that the percentage of women medical school faculty members holding associate or full professor rank remains well below the percentage of men. DESIGN--Cross-sectional survey of physician faculty of US medical schools using the Association of American Medical Colleges (AAMC) database. SUBJECTS--Surveyed were 153 women and 263 men first appointed between 1979 and 1981, matched for institutions of original faculty appointment. MAIN OUTCOME MEASURES--Academic rank achieved, career preparation, academic resources at first appointment, familial responsibilities, and academic productivity. RESULTS--After a mean of 11 years on a medical school faculty, 59% of women compared with 83% of men had achieved associate or full professor rank, and 5% of women compared with 23% of men had achieved full professor rank. Women and men reported similar preparation for an academic career, but women began their careers with fewer academic resources. The number of children was not associated with rank achieved. Women worked about 10% fewer hours per week and had authored fewer publications. After adjustment for productivity factors, women remained less likely to be associate or full professors (adjusted odds ratio [OR] = 0.37; 95% confidence interval [CI], 0.21 to 0.66) or to achieve full professor rank (adjusted OR = 0.27; 95% CI, 0.12 to 0.63). Based on the AAMC database, 50% of both women and men originally appointed as faculty members between 1979 and 1981 had left academic medicine by 1991. CONCLUSION--Women physician medical school faculty are promoted more slowly than

men. Gender differences in rank achieved are not explained by productivity or by differential attrition from academic medicine.

Ward JE, Donnelly N. Is there gender bias in research fellowships awarded by the NHMRC? Med J Aust. 1998 Dec 7-21;169(11-12):623-4.
OBJECTIVE: To assess whether there is gender bias in the allocation of research fellowships granted by the Research Fellowships Committee of the National Health and Medical Research Council. DATA SOURCES: Anonymous data from applications for a research fellowship from 1994 to 1997. RESULTS: More men than women apply for research fellowships (sex ratio, 2.5:1), but there is no difference in the proportion of male or female applicants who succeed in their application. Among new applicants, men tend to apply for a higher level of fellowship than women. CONCLUSIONS: Lack of data about the numbers of eligible men and women means that we cannot draw conclusions about self-selection biases among potential applicants. However, the selection procedures of the Committee appear to be unbiased. The gender of applicants does not influence the outcome of their application.

Wenneras C, Wold A. Nepotism and sexism in peer-review. Nature. 1997 May 22;387(6631):341-3.
This study presents an analysis of peer-review scores for postdoctoral fellowship applications from the Swedish Medical Research Council (MRC). It was observed that female scientists have been half as successful as male applicants in applying for postdoctoral fellowships at the MRC during the 1990s. The authors suggested that this was due to peer reviewers overestimating male achievements and/or underestimating female performance. In a multiple-regression analysis, the females scored especially low in a 'scientific competence' parameter, and it was hypothesized that this was because women were less productive than men. But upon further analysis, it was revealed that peer reviewers gave female applicants lower scores than male applicants who displayed the same level of scientific productivity. In fact, a female applicant had to be 2.5 times more productive than the average male applicant to receive the same competence score as he. It concluded that the combined handicap of being of the female gender and lacking personal connections was such a detriment that it could hardly be compensated for by scientific productivity alone.

Wright SC & Taylor DM. Responding to Tokenism: Individual action in the face of collective injustice. European Journal of Social Psychology 1998;28:647-667.
Tokenism is defined as an intergroup context in which very few members of a disadvantaged group are accepted into positions usually reserved for members of the advantaged group, while access is systematically denied for the vast majority of disqualified disadvantaged group members. In a laboratory experiment, Wright, Taylor and Moghaddam (1990) found that when disadvantaged group members are denied upward mobility because of a policy of tokenism they did not respond with socially disruptive forms or collective action. Instead, they chose a more benign individual non-normative response. The robustness of this unexpected response to tokenism is explored in two experiments. In Experiment 1 the use of a relevant real world ingroup as the target of tokenism resulted in a pattern of responses consisten with Wright et al's (1990) findings. In Experiment 2, interaction with other disadvantaged group members prior to the imposition of the policy of tokenism also did not alter participants' behavioural responses. These findings support the robustness of this pattern of response to tokenism, and strengthen

concerns that tokenism may be an effective tool for reducing the likelihood of collective action directed against the discriminatory practices of the advantaged group.

Yedidia MJ, Bickel J. Why aren't there more women leaders in academic medicine? the views of clinical department chairs. Acad Med 2001;76(5):453-65.
PURPOSE: A scarcity of women in leadership positions in academic medicine has persisted despite their increasing numbers in medical training. To understand the barriers confronting women and potential remedies, clinical department chairs with extensive leadership experience were interviewed. METHOD: In 1998-99, open-ended interviews averaging 80 minutes in length were conducted with 34 chairs and two division chiefs in five specialties. Individuals were selected to achieve a balance for gender, geographic locale, longevity in their positions, and sponsorship and research intensity of their institutions. The interviews were audiotaped and fully transcribed, and the themes reported emerged from inductive analysis of the responses using standard qualitative techniques. RESULTS: The chairs' responses centered on the constraints of traditional gender roles, manifestations of sexism in the medical environment, and lack of effective mentors. Their strategies for addressing these barriers ranged from individual or one-on-one interventions (e.g., counseling, confronting instances of bias, and arranging for appropriate mentors) to institutional changes (e.g., extending tenure probationary periods, instituting mechanisms for responding to unprofessional behavior, establishing mentoring networks across the university). CONCLUSION: The chairs universally acknowledged the existence of barriers to the advancement of women and proposed a spectrum of approaches to address them. Individual interventions, while adapting faculty to requirements, also tend to preserve existing institutional arrangements, including those that may have adverse effects on all faculty. Departmental or school-level changes address these shortcomings and have a greater likelihood of achieving enduring impact.

Yoder JD. An academic woman as a Token: A case study. Journal of Social Issues 1985;41(4):61-72.
Through a case history of the author's experiences as one of the first civilian faculty members at an United States military academy, tokenism under extreme circumstances and its effects on an individual are described. Hypotheses for future work in the area are proposed, and coping strategies are explored. Women's support groups, psychotherapists, social psychologists, sociologists, and policymakers are exhorted to be aware of tokenism and to work together to break the downward spiral of debilitating events that tokenism creates.

Chapter Four

Women Physicians in Organizational Medicine

Executive Summary

A. Why women are under-represented in organizational medicine

- Balancing career and family - women with families often take on the majority of work in child-rearing, resulting in the inability to devote the extended hours to organizational commitments, especially when meetings take place outside regular work hours
- Women may not have the opportunity to develop leadership skills and may lack assertiveness in competing for these positions- in specialties with large numbers of women, there are more women leaders and vice versa
- The lack of representation of women results in lack of role models and mentoring
- Women experience harassment and discrimination and opposition from the "old boys' club" mentality
- Financial issues such as dues for organizations and lower pay for women compared to men, have been reported to be barriers for some women

B. Importance of Women's Contributions to Organized Medicine

- Women have different practice and communication styles than men that can benefit organizational medicine
- The presence of women in positions of power in public office brings more attention to the issues of women and children
- When women are well represented in high positions, women medical students are more likely to see that career as an option

C. Need for equal gender representation

- By increasing the representation of young women physicians, the organizations hope to significantly increase the level of gender sensitivity throughout their organization
- Recently women physicians in the UK have been calling for more recognition of the need to balance work and family, more flexibility in work hours and more women representation on committees
- Many organizations in North America are beginning to systematically include more women in organizational positions

- Many organizations are developing policies for harassment, equity, maternity leaves, and child-care
- Women need to be educated about the importance of belonging to organized medicine, and fully integrated and encouraged once they express interest
- Gender equality cannot be achieved solely by a focus on the problems of women, but must also change the attitudes of men and the public, with respect to assumptions that professional leadership leads to long hours, sacrifice of personal life and stereotypes of managerial style

D. Development of women's caucuses and projects

- The International Medical Women's Association has been in existence since 1919 and has 70 member countries from 5 continents
- A few country specific examples: Women in Medicine project of American Medical Association (AMA); Women Physicians' Congress of AMA; annual leadership conference for women in medicine, Canadian Medical Association (CMA); American Academy of Family Physicians (AAFP) committee on Women in Family Medicine; Committee to increase women's leadership in academic medicine (Association of American Medical Colleges); Medical Women's International Association
- Also several specialty-specific associations for women physicians (e.g., radiology, surgery, ophthalmology, dermatology, endocrinology, urology)

E. Conclusions

- There is reason to be optimistic about the increasing role of women in organizational medicine, as their strengths have the potential to bring positive changes for the profession and for women's health
- Substantial changes in the current ideology may be required for women's contributions to be fully realized

Literature Review: Women Physicians in Organizational Medicine

Introduction

Organizational medicine can be defined as any organizational body that makes decisions affecting medicine, be it through administration or in practice. Numerous articles document how women's visibility in organizational medicine is not growing at the rate that women are entering the field of medicine (Callan, 1986; McDonald, 1988; Nadelson, 1991; Jonasson, 1993; Rafuse, 1995; AAFP, 1995). This chapter will address the issues of women's lack of participation, the lack of role models and mentors, tokenism, and how the "old boys'" network hinders women's participation. We will address women's specific needs, the need for equal gender representation, and the development of separate organizations specifically for women. Women bring special contributions to organizational medicine and their participation should be encouraged.
The Medical Women's International Association and its membership in associated country organizations and medical women's organizations in Canada and the US, are well described, but there are very few publications on medical women's organizations in other countries. With that limitation in mind, we will discuss the role of women in organizational medicine.

Why women are under-represented in organizational medicine

Although women have been entering medicine in the same numbers as men in recent years, women are still under-represented in organizational medicine. In 1995, in Canada, 24.3% of doctors were women, and 23% were members of the Canadian Medical Association (CMA) (Burns, 1995; Rafuse, 1995) but less than 7% of the CMA councils and committees were women, and only one woman sat on the 26-member board of directors (Burns, 1995; Rafuse, 1995). In the United States the situation is similar. According to the American Medical Association's (AMA) home page (http://www.ama-assn.org/), in 2004, 26.6% of physicians, not including medical students, were women, and 4 of the 21 (19%) members of the board of trustees for the AMA were women (AMA, 2008; http://www.ama-assn.org/ama/pub/category/2221.html).

Balancing Career and Family

As in other aspects of medicine, a primary reason for the disparity between the involvement of men and women in organizational medicine is the role pressure of balancing career and family responsibilities (Callan, 1986; Nadelson, 1991; Burns, 1995; Rafuse, 1995; AAMC, 1996; AAFP, 1995; Leopando, 2003). Women report difficulties in taking on the extra responsibilities involved in being a part of a medical organization, while maintaining their home lives as well. Lack of spousal support has been reported to be a barrier for advancement for some women (Burns, 1995; AAFP, 1995). In the AAFP Discussion Paper on Women in Family Medicine (1995), it was noted that 64.1% of AMA nonmember women physicians were married to other physicians, and 85.5% were married to a physician or other professional. In dual-physician relationships, women spend considerably more time on family responsibilities compared to men (Jonasson, 1993; Burns, 1995; Kvaerner, 1999; Leopando, 2003). Most organizational meetings take place after hours, either in the mornings or in the evenings, and being away from the children for additional time when one has already been away all day can hinder women's involvement.

Leadership skills

Lack of programs for the development of leadership skills, a longer time to reach the leadership position and women's lack of assertiveness in competing for the positions may also be factors preventing women from participating in organized medicine (Callan, 1986). In surgery organizations, women's entry into the field may have been so recent that they have not caught up with men in participation at the organizational level (Jonasson, 1993). More recently, good leadership programs for junior, mid-career and executive medical women with different leadership styles women have become accessible in the United States and Canada

Lifestyle, personal choice, and financial issues

Lifestyle and personal choices are also thought to play a large part in dissuading women from greater participation. Other factors influencing women's desire to participate in organizational medicine include financial concerns, such as the high dues associated with joining such organizations and lower personal income when compared to their men colleagues (Nadelson, 1991; Rafuse, 1995; AAFP, 1995)

Lack of Role Models and Mentoring

The American Academy of Family Physicians, concerned with the low numbers of women involved in the AMA, conducted a survey to assess why women were not more involved (AAFP, 1995). They only received a 12.9% response rate, but of those respondents, the most noted reason for not joining the AMA was that it did not adequately represent women physicians. The lack of adequate role models was the issue most respondents felt the Academy should address (AAFP, 1995).

Role models and mentors can increase participation in specific areas (Jonasson, 1993). Women must be involved at the highest ranks of a specialty before they will be routinely selected to fill the leadership positions at all levels (Jonasson, 1993). Currently, men are more likely to be in leadership roles overall, but in medical specialties with high proportions of women already involved, there are more women leaders (Kvaerner, 1999). Therefore, a deliberate effort must be made to encourage senior women physicians to encourage and mentor incoming women (Isenhart, 1994). Several organized efforts have been made to support mentoring. These have included mini-internships with women who have clearly established themselves in organized medicine (Rafuse, 1995), as well as organized mentor pilot programs within specific medical schools (McDonald, 1988).

Old Boys' Network

Women entering organized medicine have encountered informal hurdles, discrimination and sexism resulting in a failure to be included and/or welcomed into organizational medicine (Jonasson, 1993; AAMC, 1996; AAFP, 1995; Leopanda, 2003). For example, at the CMA's annual meeting in Montreal in 1994, a man delegate from the floor stated that he "refused to bow to the tyrannical feminist minority" when discussing changing the term "chairman" to the more gender neutral term "chair" (Burns, 1995). One author contends that men are in fact reluctant to allow women into the "inner circle" of the profession for fear that the profession itself may become viewed as "women's work", resulting in loss of prestige, income and authority

(Lorber, 1991). Women acknowledge feeling excluded or intimidated because organizational medicine was an "old boys' network" (McDonald, 1988; Rafuse, 1995; Cooper, 1996; AAFP, 1995).

Importance of Women's Contributions to Organized Medicine

As was discussed in Topic 2 (Women in Practice) women have a distinct style of practicing medicine. These characteristics are likely to apply to women's involvement in organizational medicine as well. In the AAFP Discussion Paper of Women in Family Medicine (1995), the issues that arose specifically for women in organizational medicine were similar to those in other aspects of medicine. As their numbers increase, women need to be involved in the organizational aspect of medicine to ensure that their specific needs are met (McDonald, 1988; Jonasson, 1993; Cooper, 1996).

The presence of women in positions of power in public office brings more attention to the issues of women and children (Morahan, 2001), and it could be extrapolated that a parallel effect could be expected for women in powerful organizational medicine positions. When women are well represented in high positions, women medical students are more likely to see that career as an option (Jonasson, 1993). Another benefit of participation in organizational activities for women is the potential career advancement. Those women who serve on editorial boards and specialty medical journals are often promoted because of the national recognition they receive (Kennedy, 2001).

Need for Equal Gender Representation

In order for the benefits of participation by women in organizational medicine to be realized, organizational bodies need to take responsibility to ensure equal representation. In the UK, Dr. Carol Black, president of the Royal College of Physicians, in August 2004, recently highlighted this issue. She commented that for medicine to maintain its professional status while incorporating the increasing number of women in medicine, a number of initiatives must be put in place: finding ways to help women balance family and work, more flexibility in work hours, and more representation by senior women on government and political committees. (BBC News, 2004. http://news.bbc.co.uk/1/hi/health/3527184.stm, accessed January 21, 2008).

The role of women in organizational medicine appears to be increasing in Canada, with a woman director of the Royal College of Physicians and Surgeons, and at various times, women presidents of the Canadian Medical Association, College of Family Physicians of Canada, and the Ontario College of Family Physicians (Cohen, 1997). The AMA has developed guidelines on maternal leave, childcare, sexual harassment and gender neutral language, and sponsors an annual Women in Medicine month (Cohen, 1997). When surveyed about why certain women did take a leadership position in medicine, women leaders stated that their primary motive was to solve problems and to fulfill their desire for organizational involvement (Isenhart, 1994). By increasing the representation of young women physicians, the organizations hope to increase the level of gender sensitivity throughout their organization (Rafuse, 1995). To attract more physician mothers to their meetings, the American Academy of Family Physicians has offered childcare at annual sessions and has tried explicitly to incorporate women in organized medicine (President's Column, 2000; AAFP, 1995). At the same time, women themselves need to be educated

about the importance of belonging to organized medicine, and fully integrated and encouraged once they express interest (Callan, 1986; Burns, 1995). Regional boards must recognize and accommodate the difference in practice patterns between men and women in the credentialing decisions (Cohen, 1997). In Norway, a recent thoughtful analysis suggested that gender equality cannot be achieved solely by a focus on the problems of women, but must also change the assumptions of men and the public that professional leadership requires long hours, sacrifice of personal life and stereotypical managerial style (Showalter, 1999).

Seven diverse medical schools in the U.S. developed programs to advance the success and leadership of women faculty (Morahan, 2001). Four major features of success included: 1) obtaining support from the academic leadership of the institution, 2) completing a needs assessment, data acquisition and evaluation in order to maximize credibility, 3) adapting the faculty development efforts to the institutional contexts and 4) leveraging resources and support (Morahan, 2001). The two themes that arose in the unsuccessful situations were 1) focusing on too large a menu of short term, resource driven issues and 2) a lack of sustainable effort over the long run (Morahan, 2001).

Development of Women's Caucuses and Projects

The Medical Women's International Association (MWIA), established in 1919, is an association of medical women representing women doctors from 70 countries in all five continents. Its aims and goals are:

- to promote the cooperation of medical women in different countries;
- to develop friendship and understanding between medical women throughout the world;
- to actively work against gender related inequalities in the medical profession between female and male doctors including career opportunities and economical aspects;
- to offer medical women the opportunity to meet so as to confer upon questions concerning the health and well-being of humanity; and
- to overcome gender-related differences in health and healthcare between women and men, between girl-child and boy-child throughout the world.

The association has been actively involved since the early 1950's with the United Nations as a Non-Governmental Organization (NGO). Today MWIA maintains official working relations with the World Health Organization (WHO), Category II Status with the Economic and Social Council (ECOSOC) and is involved in the Immunization Programmes of the United Nations Children's Fund (UNICEF). MWIA is represented in all three of the United Nation Centers, New York and Geneva by permanent representatives. As a founding member, the association is actively involved with the Council for International Organizations of Medical Sciences (CIOMS) (http://www.mwia.net– accessed 21 January 2008)

A number of countries are mentioned on the MWIA website as having associated medical women's associations. These include Denmark, Finland, Norway, Sweden, United Kingdom, Iceland Austria, Bulgaria, Georgia, Germany, Hungary, Poland, Romania, Switzerland Belgium,

France, Greece, Israel, Italy, Canada, United States of America, Argentina, Bolivia, Brazil, Colombia, Mexico, Panama, Peru Cameroon, Egypt, Ghana, Nigeria, Sierra Leone, Tanzania, Uganda, Zambia, India, Thailand, Australia, Japan, Republic of Korea, Philippines, Taiwan ROC.

Some have their own websites:

> The Medical Women's Federation in the United Kingdom, promotes the personal and professional development of women in medicine and women's health issues. Founded in 1917, the MWF is an independent educational charity whose members are from every level of the medical profession. (http://www.medicalwomensfederation.org.uk/, accessed Jan 17, 2008)
>
> As the only women doctors' organization in Switzerland, the Swiss Medical Women's Association (SMWA) represents the interests of women during their university and postgraduate medical training as well as those of women doctors in all specialties and careers regardless of their employment status. SMWA supports the integration of professional, social and family responsibilities, favors individually suitable employment and career pathways and encourages women to self and gender awareness in their work. SMWA sees itself as a network for mutual support and as a platform for medical women in leading positions. SMWA provides counseling for female medical students and young doctors on training and career opportunities. (http://www.medicalwomen.ch/deutsch/mwia, accessed January 17, 2008).
>
> The Australian Federation of Medical Women was formed in 1927 to promote and develop the formal practice of medicine among women. It is a non-profit, non-government society with member bodies in each state. (http://www.afmw.org.au, accessed January 17th, 2008).
>
> The New Zealand Medical Women' Association (NZMWA) was formed in 1920. About 83 years later, in 2003, their website reported that because of an almost total lack of interest from younger women doctors, a remit was passed that the NZMWA go into recess, at least until the Annual General Meeting planned for July 2004. (http://www.nzmedicalwomens.co.nz/newsletter.html, accessed Sept. 14, 2004, not accessible in January 2008).
>
> The Federation of Medical Women of Canada actively promotes the roles and status of women physicians and the well being of all women (Cohen, 1997). In 1924, a group of women physicians, while attending the Canadian Medical Association's Annual General Meeting, met to found the Federation of Medical Women of Canada. (http://www.fmwc.ca, accessed January 17, 2008).
>
> The American Medical Women's Association (AMWA) was founded in 1915, at a time when women physicians were an under-represented minority. As women in medicine increase in numbers, new problems and issues arose that were not anticipated. AMWA has been addressing these issues for almost 90 years. (http://www.amwa-doc.org, accessed January 17, 2008).
>
> At the individual country level, numerous committees within medical associations have been organized to deal specifically with women's issues. In the United States, in 1979 an Ad Hoc

Committee on Women in Organized Medicine within the American Medical Association (AMA) was created to look at barriers to women's playing an active role in organizational medicine which resulted in examining maternity leave for residents and efforts to encourage women to participate more in organizational medicine (Callan, 1986; AAFP, 1995). Next they established a Women in Medicine project, an ongoing effort to provide direction and coordination for AMA activities involving women physicians (Callan, 1986). In 1983 the American Academy of Family Physicians created a committee on Women in Family Medicine (AAFP, 1995). In 1996 the Association of American Medical Colleges approved a committee to increase women's leadership in academic medicine, and for the last 25 years almost all medical schools in the US and Canada have appointed one or two AAMC Women Liaison Officers (Bickel, 2002). Currently on the AMA's website (http://www.ama-assn.org/ama/pub/category/2699.html, accessed January 17, 2008) there are 14 women physician family medicine and other specialty groups.

At the state level within the US, the California Medical Association formed a committee on women in medicine in 1986 in order to define and examine issues important or unique to women physicians, make recommendations about the ways organized medicine can serve women physicians and develop avenues that encourage the greater involvement of women physicians in organized medicine (McDonald, 1988). Many other state and county medical societies have caucuses and standing committees to address women's issues.

The Canadian Medical Association (CMA) has established an annual leadership conference for women in medicine, and has published a document called "Women in Medicine: The Canadian Experience" (Cohen, 1997). The gender issues committee has developed a template against which the organization can analyze proposed policies with respect to the gender of both physicians and patients (Cohen, 1997), and the CMA has a Women in Medicine Office (www.cma.ca, accessed 21 January 2008).

Several specialty organizations focus on the role of women in medicine, such as the American Association of Women Radiologists, Association of Women Surgeons, Ruth Jackson Society of Women Surgeons (orthopedics), Women in Cardiothoracic Surgery, Women in Endocrinology (oldest association), Women in Ophthalmology, Women's Dermatology Society, and Women in Urology. The activities of these specialty women physician groups may include: networking, consciousness raising, policies regarding pregnancy and part time work, academic achievement, equal opportunity, child care at meetings, health benefits for domestic partners, representation in professional societies, reconciling family and career responsibilities, and general survival tactics, as well as programs that inform and advance the specific subspecialty as a whole (Ulstad, 1993).

Conclusion

Traditionally women have not participated in organized medicine at a rate proportional to their numbers in the profession. Efforts around the world to increase women's involvement have led to the establishment of international and national women's physician organizations as well as committees focused on women within the traditionally male dominated medical organizations. The Working Party on Women and Family Medicine is an example of such a development within a general medical organization that had not previously addressed the issues of women physicians. Both general medical organizations and specialty organizations have developed committees to

focus on the particular needs of women; these changes will ultimately benefit not only women physicians, but also the profession and society as a whole.

Abstracts and Summaries: Women Physicians in Organizational Medicine

AAFP Discussion Paper on Women in Family Medicine. http://www.aafp.org/x15281.xml. Last updated: July, 1995. (Note: website link no longer available)
The Committee on Women in Family Medicine of the American Academy of Family Physicians was created in 1983 and charged by the Board of Directors to develop proposals to reflect the AAFP position in regard to the role for women family physicians and to develop proposals to identify ways of responding to special concerns of women family physicians. A summary of the history of the Committee, policies developed by the Committee, issues of concern for the Committee, and the development of programs by the Committee are included in this paper.

AAMC Project Committee on Increasing Women's Leadership in Academic Medicine. Acad Med 1996 July: 71(7): 801-811.
The project committee's overall funding are that even when they are as academically productive, women remain significantly less likely than men to climb the academic ladder; the reasons women in academic medicine are not succeeding at the same pace as men involve a complex combination of isolation, cultural stereotypes, and sexism, the difficulties of combining family responsibilities with professional demands; academic medicine and the public would benefit from increasing women's leadership share at all levels; and far-reaching systematic initiatives are needed to assure these increases.
Some of the pressures intensifying within academic medicine, for instance to downsize departments and to reduce expenditures, certainly add to the challenges of developing more women leaders. But opportunities are apparent as well, especially to organizations and individuals taking the long view. As competition for parents and other resource mounts, institutions best able to manage their human resources and to tap the leadership potential of women as well as men will enjoy an edge. Pressures to become more customer-focused also mean greater attention to the needs of women patients (since they outnumber men). But when women have no or only token representation on policy-making committees and boards, key perspectives will likely be missing, compromising medicine's fulfillment of its social contract as well as excellence.
The project committee directs a series of 14 recommendations to leaders of medical schools, teaching hospitals, academic medical societies, and the AAMC. Under the first major area – developing and mentoring women faculty, administrators, residents, and students – the committee recommends the addition of temporal flexibility to faculty policies, provision of job search assistance to partners of candidates for major positions, and design of leadership development programs, including workshops targeted at chief residents.
The second major area – improving pathways to leadership – recommends gathering the perspectives of major search firm heads and current women chairs on improvement to be sought, offering guidance to search committees regarding evaluation of nontraditional candidates, and helping department chairs improve their faculty development skills. The final area – fostering readiness to change – urges medical centers to conduct self-assessments of organizational climate, the Liaison Committee in Medical Education (LCME) to examine school's experience in promoting women faculty, and the AAMC to integrate the work espoused here into its on-going

programs and planning. An implementation sub-committee will issue reports highlighting "best practices" and problem areas.

American Association of Medical Colleges. Women in Medicine (WIM) www.aamc.org/members/wim/start.htm (accessed 23 January 2008)

Aiken, F. Leader of the Pack. Nurs Stand. 2000 Apr 26-May 2; 14(32): 61.
Profile of Dr. Nancy Nielsen: Dr. Nancy Nielsen, MD, has managed to continually crack, if not break through, the glass ceiling that exists for female physicians. Her list of accomplishments include: Assistant Dean of Academic and Curricular Affairs and clinical professor of medicine at the State University of New York, Buffalo School of Medicine and Biomedical Sciences, member of the Board of Directors of the National Patient Safely Foundation, member of the Advisory Board of the Society for the Advancement of Women's Health, vice speaker of the House of Delegates of the American Medical Association (the First women to ever hold the title), and, at 26, she was named chairman of the Biology Department at D'Youville College in Buffalo, where she was later hired to launch a new graduate program in clinical microbiology. In addition, she was the first female chief internal medicine resident at Buffalo General Hospital and later became the first woman elected president of the Medical/Dental staff there. Her first day at medical school, Dr. Nielsen pushed through the male/doctor change room door as a statement against a sexist discipline. She continues to make this statement day after day through her many accomplishments in the medical community.

American Medical Association. Women Physicians Congress (WPC) Statistics and History. http://www.ama-assn.org/ama/pub/category/171.html (accessed 21 January 2007)
These tables provide statistical information on women physicians and medical students. Income information in Table 11 and in Table 12 is available for AMA members only. Additional online statistics are available on the AMA's Data Resources Web site. Women in medicine history is also provided.

AMA General News: September is Women in Medicine Month. http://www.ama-assn.org/ama/pub/category/2221.html accessed 28 February 2008.
Each September the AMA commemorates Women in Medicine Month to recognize and celebrate the growing number and influence of women physicians in the profession and their communities.

American Medical Women's Association: History of AMWA. http://www.amwa-doc.org/index.cfm?objectid=C66146BA-D567-0B25-5CC8B2D8552EBF18 (accessed 21 January 2008).
The American Medical Women's Association is an organization which functions at the local, national, and international level to advance women in medicine and improve women's health. We achieve this by providing and developing leadership, advocacy, education, expertise, mentoring, and strategic alliances. The American Medical Women's Association (AMWA) is an organization of 10,000 women physicians and medical students dedicated to serving as the unique voice for women's health and the advancement of women in medicine. AMWA was founded by Dr. Bertha VanHoosen in 1915, at a time when women physicians were an under-

represented minority. As women in medicine increase in numbers, new problems and issues arise that were not anticipated. AMWA has been addressing these issues for 90 years.

Arnold, R.M., Martin, S.C., & Parker, R.M. Taking care of patients – does it matter whether the physician is a woman? West J Med 1988 Dec; 149(6): 729-33.
Researchers have recently begun to compare male and female physicians' attitudes toward patients, medical knowledge, and practice styles. Although women start medical school with more "humanistic views," the conservative effect of medical socialization on both male and female students attenuates these differences. While some studies suggested that men are more scientifically knowledgeable, recent studies showed no significant differences in physicians' medical knowledge. Male and female physicians also had comparable diagnostic and therapeutic behavior. In the intimate world of physicians and patients, however, there were notable differences. Women physicians seemed better able to communicate sensitivity and caring to patients, which may account for the common perception that women are more caring and empathic physicians. Medical educators may wish to study more closely female physicians' communication styles to identify these behaviors and inculcate them into all physicians.

Australian Federation of Medical Women http://www.afmw.org.au (accessed 21 January 2008)
The Australian Federation of Medical Women represents Australian medical women at national and international levels and is a valuable network for the medical profession. The AFMW is focussed on the development of leadership skills in medical women, mentoring undergraduates and junior medical officers and addressing discriminatory practices against medical women.

BBC News. Women Doctors Weaken Medicine Today. Monday 2nd August 2004. http://news.bbc.co.uk/1/hi/health/3527184.stm (accessed 23 January 2008).

Bickel, J., Wara, D., Atkinson, B.F., Cohen, L.S., Dunn, M., Hostler, S., Johnson, T.R., Morahan, P., Rubenstein, A.H., Sheldon, G.F., & Stokes, E. Increasing women's leadership in academic medicine: report of the AAMC Project Implementation Committee. Acad Med. 2002 Oct; 77(10): 1043-61.
The AAMC's Increasing Women's Leadership Project Implementation Committee examined four years of data on the advancement of women in academic medicine. With women comprising only 14% of tenured faculty and 12% of full professors, the committee concludes that the progress achieved is inadequate. Because academic medicine needs all the leaders it can develop to address accelerating institutional and societal needs, the waste of most women's potential is of growing importance. Only institutions able to recruit and retain women will be likely to maintain the best housestaff and faculty. The long-term success of academic health centers is thus inextricably linked to the development of women leaders. The committee therefore recommends that medical schools, teaching hospitals, and academic societies (1) emphasize faculty diversity in departmental reviews, evaluating department chairs on their development of women faculty; (2) target women's professional development needs within the context of helping all faculty maximize their faculty appointments, including helping men become more effective mentors of women; (3) assess which institutional practices tend to favor men's over women's professional development, such as defining "academic success" as largely an independent act and rewarding unrestricted availability to work (i.e., neglect of personal life); (4) enhance the effectiveness of

search committees to attract women candidates, including assessment of group process and of how candidates' qualifications are defined and evaluated; and (5) financially support institutional Women in Medicine programs and the AAMC Women Liaison Officer and regularly monitor the representation of women at senior ranks.

Birenbaum, R. Growing number of female physicians changing the face of Canadian medicine. CMAJ 1995 Oct 15; 153(8): 1164-6.
The growing number of female physicians is changing the way medicine is practised. One recent Canadian study found that "significant differences in practice characteristics and service mix and pattern between men and women." Another change involves differences in the way men and women communicate. One lawyer noted that most medical lawsuits involve a breakdown in communication between doctor and patient, and very few female physicians have been the target of malpractice suits--even in high-risk specialties such as obstetrics and anesthesiology.

Brotherton, S.E., Tang, S.F.S., & O'Connor, K.G. Trends in practice characteristics: analyses of 19 periodic surveys (1987-1992) of Fellows of the American Academy of Pediatrics. Pediatrics 1997 Jul:100(1): 8-18.
OBJECTIVE: To examine 6 years of practice characteristics data of Fellows of the American Academy of Pediatrics (AAP), focusing on sex differences for specialty area, primary activity, practice setting, and practice location. METHODS: We analyzed data from 19 Periodic Surveys that were fielded between 1987 and 1992. The Periodic Survey is used to survey AAP members regularly about current issues in pediatric practice. There are no duplicate respondents in these analyses of the first 19 Periodic Surveys. We collapsed the 19 surveys into the years in which they were fielded, and analyzed sex differences for each of the 6 years. In addition, we ran logistic regressions on several questions, including all 16 868 respondents, to examine how the characteristics of the specialty have been affected by the increase in the number of female pediatricians, controlling for survey year, age of respondents, and specialty area practiced. RESULTS: The proportion of nonresident AAP members who are female has grown throughout the 6 years; in 1987, 26.9% were female, and in 1992, 36.4% were female. For 5 of the 6 years there were sex differences in specialty area, usually concerning pediatric subspecialties. Substantial sex differences occurred in primary activity, in which each year women were more likely than men to be salaried. Men were more often in group practices, whereas women were generally more likely to practice in hospitals or clinics. Logistic regression demonstrated that there are sex differences in practice characteristics across time, but there is also a substantial change in practice characteristics accountable to survey year, eg, a pediatrician of either sex was 75% more likely to be salaried in 1992 than in 1987. CONCLUSIONS: Throughout the 6-year period, AAP members became increasingly more likely to practice general pediatrics, to be salaried, and to be younger-all effects independent of sex, all effects stronger for females. Rapid transformations in the health care system will likely reduce current sex differences in practice characteristics of the future.

Buckley, L., Kuhn, G., Eckler, M., Bodurtha, J. & Chin., J. Women in Medicine Update. 2000 Spring; 8(2): 1-4.
Five short articles featuring discussion of issues, events, and incidents surrounding women in medicine. The topics range from controversy surrounding the all male VCU Health Authority Board, to how to write and create an educator's portfolio, to community service.

Burns, R. It is time for organized medicine to put out the welcome mat for women. CMAJ 1995 Feb 1; 152(3): 392-3. Comment in: Can Med Assoc J 1995 Feb 1; 152(3): 394-7.
The medical profession faces a challenge as it tries to adapt old ways of delivering health care. If it is to adapt successfully, says Dr. Robert Burns, more female physicians must be involved in providing leadership within the profession. In this article Burns, executive director of the Alberta Medical Association, looks at ways organized medicine can be made more attractive to women.

Callan, C.M. Women and organized medicine. Comm Med 1986 Jul; 50(7); 475-6.
The numbers of women physicians is increasing every year and will continue to do so. Although their number is growing, their visibility is not. This is particularly evident in the ranks of organized medicine and is causing concern among its leadership.

Canadian Medical Association. Resolutions passed during the CMA's 1995 annual meeting. CMAJ 1995 Nov 1; 153(9): 1348-51.
CMA's 1995 meeting features three strategic session on the future of health and health care in Canada. This resulted in the creation of a "Blueprint for Action." The strategic sessions looked at key issues within the Canadian health care system. Dr. Tam put forth a motion, in regards to equal treatment of all physicians in Canadian medicine: "The the CMA support the following principles in health care polict reform: 1) the primary obligation of the medical profession as a whole is to meet the medical needs of Canadians. 2) All qualified, licensed physicians in Canada must be treated equitably based on training and competence, without differentiating treatment on the basis of age, gender, ethnic background, province/territory of origin of training, or years in practice."

Cohen, M. Cracking the glass ceiling. CMAJ 1997 Dec 15; 157(12): 1713-4.
In 1997, 26% of physicians in active practice in Canada were women. Even though this proportion is likely to increase, the percentage of women in differing specialties continues to vary. Furthermore, as reported by the Association of American Medical Colleges, the number of women in academic leadership positions is not at par with either the number of talented female faculty members or with the need to achieve gender equity. In Canada, there are no female deans in its 16 medical schools, but there are approximately 15 female associate deans. The number of female clinical department chairs range from zero to two per specialty, except in Family Medicine where there are four. However, organized medicine is slowly beginning to recognize the importance of having suitable female representation in its decision-making bodies. However, Canada still lags behind the United States. It is clear that women leaders have a significant impact on professional education, research, and women's health. Hence, organized medicine must ensure that gender issues are addressed in its policies and planning, must be more sensitive and responsive to the concerns of women physicians, must respect their professional well-being, and must accommodate differences in practice patterns between men and women.

Cotton, P. Women Physicians Target Barriers. JAMA 1993 Feb 24; 269(8): 965.
Since a 1990 Congressional General Accounting Office report documented the great extent to which the NIH has ignored women, significant progress has been made in the way of addressing the gender inequity in medical research. However, despite a $10 billion NIH budget, there is still no input from the people that take care of women in their reproductive years. This speaks to the attitude held by the NIH. There are many myths surrounding the notion of women versus

men doctors. Falsities surrounding "Best Intentions", "Question of Hours Worked," and "FDA, AAMC Targeted" are further discussed throughout this paper.

Dallas County Medical Society. 2001 DCMS President's Profile – Carolyn Evans, MD. http://www.dallas-cms.org/ss9/pres.pages/past01/01profile.html. (Accessed 23 January 2008)
Profile of the life and accomplishments of Dr. Carolyn Evans, president of DCMS, 2001.

Federation of Medical Women of Canada http://www.fmwc.ca (accessed 23 January 2008)

Fitzgerald, R.C. & Black, C. Women in hospital medicine: career choices and opportunities. Hosp Med 2001 Dec; 62(12): 778-9.
A significant number of women now enter hospital medicine. However, many do not make the expected progression within the medical specialties. The Royal College of Physicians set up a working party to examine and collect evidence on the career choices and progression of women in the hospital medical specialties under its remit and published a report of this evidence. This article outlines the findings of the report and the implications for hospital medicine.

Franks, P. & Clancy, C.M. Physician gender bias in clinical decision making: screening for cancer in primary care. Med Care 1993 Mar; 31(3): 213-8.
There has been increasing interest in gender disparities in clinical decisionmaking. Few studies have examined this issue in nationally representative samples or focussed on primary care. In addition, few of the studies have examined the role of physician gender. The 1987 National Medical Expenditure Survey was used to examine the relationship between physician gender and screening deficiency in women for three gender-sensitive tests (breast examinations, Papanicolaou tests, and mammograms) and one gender-neutral test (blood pressure checks). Women reporting a female physician as their usual provider compared with those reporting a male physician were less likely to be deficient for Papanicolaou tests and mammograms. There was a smaller, but nonsignificant similar trend for breast examinations. No gender bias was evident for blood pressure checks. These results persisted after multivariate adjustment for patient age, race, education, income, insurance status, subjective health status, other health behaviors, and attitude toward health care and health insurance. The results confirm the existence of physician gender bias in clinical decision making and represent one area for quality improvement.

Fryhofer, Sandra Adamson. ACP President's Column: A look at the College's success in promoting gender diversity. From the September 2000 ACP-ASIM Observer, copyright © 2000 by the American College of Physicians-American Society of Internal Medicine. http://www.acponline.org/journals/news/sep00/president.htm. Last updated: 2003. (accessed 23 January 2008)
Recognizing the increase of women in organized medicine in general, and in internal medicine in particular, the American College of Physicians (ACP) is working to develop ways to encourage its female members to get involved. Through making ACP events more family-friendly (e.g. offering day-care services) and encouraging women to become more involved in leadership roles, the ACP feels its well on its way to achieving gender equity amongst its members, both in numbers and in leadership positions.

Gans, D.N. Women's work. MGMA Connex 2003 Apr; 3(4): 25-7.
Today, women represent 25% of medical doctors in the United States and 48% of first year medical students. In four years, this class will graduate and bring gender equity to the profession of medicine. This will have substantial impact, perhaps most importantly is the affect male and female productivity will have on the health care system. According to data adapted from the Medical Group Management Association (MGMA) Physician Compensation and Production Survey: 2002 Report Based on 2001 data, societal pressures on women differ significantly than those on men, and this data could reflect the multi-faceted aspects of a woman's life, competing demands of family, profession, and personal life. In addition, women doctor's have lower production than men doctors. This could be due in part to factors which are discussed in this paper.

Gray, J. The effect of the doctor's sex on the doctor-patient relationship. J R Coll Gen Pract 1982 Mar; 32(236): 167-9.
The differences between male and female doctors in investigated, and what patients expect from their doctors is examined. Some conclusions are drawn from the references which patients express for male and female doctors and from the different outcomes of male and female doctor-patient relationship.

Gruneberg, A. General Medical Council. BMA fails to attract women candidates. BMJ 1994 May 21; 308(6940): 1374.
The BMA has failed to attract women candidates seeking its sponsorship. The may be because candidates were chiefly sought from the BMA's representative body, which ash few women, and not from its members, roughly a third of whom are women. For the BMA to preserve its credibility, action is necessary. The BMA's publicity resources should be used to persuade doctors to vote and to vote with the need for balanced representation of the profession in mind.

Isenhart, M. Women physicians in medical leadership. Med Group Manage J 1994 Mar-Apr; 41(2): 20-1, 39-40.
The path to top management positions is other made more accessible with the aid of a mentor relationship. Myra Isenhart, Ph.D., shares the highlights of a structured mentoring program at Kaiser Permanente of Colorado where women physicians are encouraged to strive for medical leadership positions.

Jonasson, O. Women as leaders in organized surgery and surgical education. Has the time come? Arch Surg 1993 Jun; 128(6): 618-21.
Women have entered medicine in large numbers during the past three decades, and are increasing their representation in some surgical fields at a rapid pace. Few women are found in senior roles in organized surgery or at the senior ranks of academic surgical faculty. Factors influencing this imbalance include family demands, sexism, and stereotypes that hinder the advancement of women into leadership roles. Strategies for correcting this imbalance include affirmative recruitment of women into surgery, particularly into academic surgical faculties; support systems, such as child care and adjustment of promotion and tenure timetables; mentoring; and programs of career development that emphasize skills in management as well as research and teaching.

Kennedy, B.L., Lin, Y., & Dickstein, L.J. Women on the editorial boards of major journals. Acad Med 2001 Aug; 76(8): 849-51.
PURPOSE: To determine the percentages of women on the editorial boards of general and specialty medical journals in comparison with the numbers of women physicians in the journals' respective specialties. METHOD: The numbers of women editors, deputy editors, assistant editors, and members of editorial boards of 12 major journals in 1999 were counted and compared with the percentages of women physicians in the journals' specialties, as published by the American Medical Association. RESULTS: Parity between the percentages of women on editorial boards of specialty journals and women physicians in the journals' specialties was found for five journals. Only one journal had more women on the editorial board than there were women physicians in the specialty. CONCLUSIONS: Fewer than half of the journals studied had parity between the percentages of women members of editorial boards and the percentages of women physicians in the specialties. Parity should be maintained to accurately reflect the numbers of women physicians in these fields.

Kondo, D.G. & Judd, V.E. Demographic characteristics of US medical school admission committees. JAMA Sep 6; 284(9): 1111-3. Comment in: JAMA 2000 Sep 6; 284(9): 1138-9.
CONTEXT: Although concerns continue to be raised about the diversity of the US physician workforce, there has never been a nationwide survey of both the sex and underrepresented minority (URM) composition of medical school admission committees. OBJECTIVE: To document US medical school admission committee membership in several demographic domains, including sex and URM (African American, Mexican American, mainland Puerto Rican, Native American, Native Hawaiian, and Native Alaskan) status. DESIGN: Mailed survey. SETTING AND PARTICIPANTS: Deans or directors of admission at 85 US medical schools that were members of the Association of American Medical Colleges (response rate, 70%). MAIN OUTCOME MEASURES: Prevalence of 1999-2000 school-year committee members in demographic categories, such as sex, URM status, physician or medical student status; compensation status. RESULTS: The overall ratio of men to women on admission committees was 1.77 to 1. On average, 16% of committee members were from URM groups. Physicians with URM status comprised 8% of committee membership; 51% of committees had 1 or 0 URM physicians. Seventy-four percent of committees had at least 1 medical student; medical students comprised 15% of total membership. Ninety-one percent of committees operated on a volunteer basis. CONCLUSION: Although representation of women and persons with URM status on medical school admission committees has improved since 1972, URM membership, in particular, remains low.

Kvaerner, K.J., Aasland, O.G., & Botten, G.S. Female medical leadership: cross sectional study. BMJ 1999 Jan 9; 318(7176): 91-4. Comment in: BMJ 1999 Jan 9; 318(7176): 71-2.
OBJECTIVE: To assess the relation between male and female medical leadership. DESIGN: Cross sectional study on predictive factors for female medical leadership with data on sex, age, specialty, and occupational status of Norwegian physicians. SETTING: Oslo, Norway. SUBJECTS: 13 844 non-retired Norwegian physicians. MAIN OUTCOME MEASURE: Medical leaders, defined as physicians holding a leading position in hospital medicine, public health, academic medicine, or private health care. RESULTS: 14.6% (95% confidence interval 14.0% to 15.4%) of the men were leaders compared with 5.1% (4.4% to 5.9%) of the women.

Adjusted for age men had a higher estimated probability of leadership in all categories of age and job, the highest being in academic medicine with 0.57 (0.42 to 0.72) for men aged over 54 years compared with 0.39 (0.21 to 0.63) for women in the same category. Among female hospital physicians there was a positive relation between the proportion of women in their specialty and the probability of leadership. CONCLUSION: Women do not reach senior positions as easily as men. Medical specialties with high proportions of women have more female leaders.

Lefebvre, Yvonee. Women's health and gender issues in academic medicine. Can Journal of Ob/Gyn & Wom Health 1993; 5(5): 499-509.
More women becoming involved in academic medicine improves not only equal opportunity but also enhances the unique contributions that women bring to the practice of medicine. These issues were addressed by a task force of the Faculty of Medicine, University of Ottawa, beginning in 1991. The following highlights of the Task Force report focus on women's health issues in medical and graduate education and research, and the integration of women into the faculty of medicine.

Lenhart, S. Gender discrimination: a health and career development problem for women physicians. J Am Med Womens Assoc 1993 Sep-Oct; 48(5): 155-9.
The widespread publicity of the Thomas hearings and the resignation of Stanford University neurosurgeon Frances Conley, MD, brought a new burst of attention to the old enduring issue of gender discrimination in medicine. Media attention has led to an increased awareness of the problem, but unfortunately not to a heightened level of understanding. Instead, a climate of political correctness has evolved, driving many forms of overt discrimination underground but leaving behind subtle and tenacious varieties that are even harder to address. In addition, the increase in litigation brought by professional women against their institutions has created an atmosphere of polarization and bitter defensiveness between men and women as well as between women and their own female colleagues. This article seeks to modify this adversarial climate by providing a broad spectrum of information on gender discrimination and its impact on women professionals. Included are definitions of relevant terms, prevalence studies, risk factors intrinsic to the structure of medicine, conceptual models of discrimination applicable to medical settings, the career and health impact of discrimination on women medical professionals, and institutional and individual methods of redress.

Limacher, M., Zaher, C.A., Walsh, M.N., Wolf, W.J., Douglas, P.S., Schwartz, J.B., Wright, J.S., & Bodycombe, D.P. The ACC Professional Life Survey: Career Decisions of Women and Men in Cardiology. A Report on the Committee on Women in Cardiology. JACC 1998 Sept; 32(3): 827-835.
Objectives: This survey was conducted to learn how the career decision of women and men in cardiology influences their professional and personal lives. Background: Women represent only 5% of practicing adult cardiologists and 10% of trainees. Yes, women and men now enter medical schools at nearly equal numbers. The facts that contribute to career satisfaction in cardiology should be identified to permit the development of future strategies to ensure that the best possible candidates are attracted to the profession. Methods: A questionnaire developed by the Ad Hoc Committee on Women in Cardiology of the American College of Cardiology (ACC) was mailed in March 1996 to 964 female ACC members and an age-matched sample of 1 119 male members who had completed cardiovascular training. Results: Women were more likely to

describe their primary care or secondary role as a clinical/non-invasive than invasive cardiologist ($p<0.0001$ women vs. men). Men and women both reported a high level of satisfaction with family life, but women were less satisfied with their work as cardiologists (88% vs. 92%, $p<0.01$) and with their level of financial compensation. Compared with men, women expressed less overall satisfaction (69% vs. 84%) and more dissatisfaction with their ability to achieve professional goals (21% vs. 9%). These differences were more profound for women in academic practice. Women reported greater family responsibilities, which may limit their opportunities for career advancement. Women were more likely to alter training or practice focus to avoid radiation. A majority of women (71%) reported gender discrimination, whereas only 21% of men reported any discrimination, largely sue to race, religion, or foreign origin. Conclusions: Women cardiologists report overall lower satisfaction with work and advancement, particularly within academic practice. They report more discrimination, more concerns about radiation and more limitation due to family responsibilities, which may ultimately explain the low percentage of women in cardiology. Attention to these issues may result in programs to improve professional satisfaction and attract the best candidates into cardiology in the near future.

Lorber, Judith. Can Women Physicians Ever be True Equals in the American Medical Profession? Current Research on Occupations and Professions 1991 6: 25-37.
This paper will discuss the role of women physicians in American medicine in the 1980's and the 1990's, and will argue that the bureaucratization of medical practice and the increasing control of medical decisions by the government and other third-party payers will not impact equally on all members of the American medical profession. As in the past, while all physicians may have equal (albeit lesser) authority over and responsibility for their patients' treatment, women physicians will continue to be unequal in their control over medical resources and priorities. The two-tiered stratification within the medical profession allows all physicians to work; thus, women's training is not wasted, nor can the profession be accused of open discrimination. The policy-making positions of great authority, however, are still held by members of the socially dominant group (in the case of the U.S. medicine, middle-class white men).

Mark, A. Medical management: reflecting on some ripples in the pond. Health Manpow Manage 1994; 20(1): 18-20.
Using current research into the management training of doctors in the UK, looks at some of the personal rather than just the organizational issues which arise from the development of doctors as managers. The variety of interpretations of the role raises a number of questions, some of which are highlighted: for example, the status of the management activity for doctors; the option of professional retreat from, or isolation in, difficult managerial roles; part-time management; disempowerment of other professionals; re-entry needs to full-time professional clinical work; women doctors as managers and the double- or even triple-glazed ceilings which they face. Some positive trends are evident, e.g. the impact of successful female chief executives as role models, the impact of training, but no one solution has emerged and this trend itself is seen as encouraging, given the context of a complex and ever changing environment.

MacLeod, K. Isolation, excessive time demands and sexism face female MDs, CMA workshop told. CMAJ 1996 Mar 1; 154(5): 708-9.
Networking plays a critical role in the professional development of female physicians and meetings such as a recent CMA-sponsored workshop help encourage it, physicians attending

the workshop were told. Janet Bickel told the female doctors hat one of the key problems they face is overcoming structural inflexibility that does not allow a balance between personal and professional concerns: "Meetings like this one help you realize your own strengths, and get a new perspective on your expertise and values.

McDonald, L.L. Women physicians and organized medicine. West J Med 1988 Dec; 149(6): 777-8.

The number of participating female physicians continues to rise every year, but the proportion joining organized medicine does not increase accordingly. Thus, women physicians are not adequately represented in organized medicine. The Council of the California Medical Association formed a committee in 1986 on women in medicine to address the lack of female representation in organized medicine and to offer solutions to remedy the situation. The committee adopted the following goals: to define and examine issues that are important and unique to women physicians, to make recommendations about the ways organized medicine can better serve women physicians, and to develop avenues that encourage the greater involvement of women physicians in organized medicine. The Committee on Women in Medicine conducted a survey of 1 300 female physicians, 500 were part of their state medical association and 800 were not. The results failed to reveal why women do not join organized medicine, however the survey offered a better understanding of how female physicians view organized medicine and why they want organized medicine to do for them. Based on the survey results, the Committee developed a program to recruit female physicians in to the California Medical Association, to meet women physicians' needs, and to take a stand on matters that affect women generally. The ultimate goal of the Committee is to communicate that organized medicine is for all physicians, and women can no longer remain in the background.

Medical Women's Federation, UK. http://www.medicalwomensfederation.org.uk/about/index.html (accessed 23 January 2008)

Medical Women's International Association. www.mwia.net (accessed 23 January 2008)

Morahan, P.S., Voytko, M.L., Abbuhl, S., Means, L.J., Wara, D.W., Thorson, J., & Cotsonoa, C.E. Ensuring the success of women faculty at AMCs: lessons learned from the National Centers of Excellence in Women's Health. Acad Med 2001 Jan; 76(1): 19-31.

Since the early 1970s, the numbers of women entering medical school and, subsequently, academic medicine have increased substantially. However, women faculty have not advanced at the expected rate to senior academic ranks or positions of leadership. In 1996, to counter this trend, the U.S. Department of Health and Human Services (DHHS) Office on Women's Health included women's leadership as a required component of the nationally funded Centers of Excellence in Women's Health to identify effective strategies and initiate model programs to advance women faculty in academic medicine. The authors describe the experience of Centers at seven U.S. medical schools in initiating and sustaining leadership programs for women. The processes used for program formation, the current programmatic content, and program evaluation approaches are explained. Areas of success (e.g., obtaining support from the institution's leaders) and difficulties faced in maintaining an established program (such as institutional fiscal constraints and the diminishing time available to women to participate in mentoring

and leadership activities) are reviewed. Strategies to overcome these and other difficulties (e.g., prioritize and tightly focus the program with the help of an advisory group) are proposed. The authors conclude by reviewing issues that programs for women in academic medicine will increasingly need to focus on (e.g., development of new kinds of skills; issues of recruitment and retention of faculty; and increasing faculty diversity).

Nadelson, C.C. Advancing through the medical hierarchy. J Am Med Womens Assoc 1991 may-Jun; 46(3): 95-9.
Medicine has seen a dramatic change in the balance between men and women over the past two decades. The number of women in medical training has increased from less than 10% to almost 40% of medical school classes, and women make up about 18% of physicians in the United States. The women who chooses medicine is now taking a well-trodden path. As more women enter medical practice, the environment for them will change, along with the demographics of the field.
Although competing priorities exist for women in many fields, the structure of training and the inflexibility of time demands can create particular problems in medicine. While this may contribute to the relative paucity of women currently in leadership and policy-making positions in medicine, it is not sufficiently explanatory. Since criteria for promotion, tenure, and appointments can never be entirely objective, how one defines skills, scholarships, or "future promise" is not as specific as we often assume it to be. Advancement depends on many factors, including contacts, mentorship, and the choice of an area of specialization or inquiry. Theses issues must be addressed as we consider women's future roles in medicine.

New Zealand Medical Women's Association www.nzmedicalwomens.co.nz (last accessed September 14, 2004). (Note: website link no longer available).

Rafuse, J. Furore over language, shortage of womem leaders signs of need for change at CMA, committee says. CMAJ 1995 Feb 1; 152(3): 394-7. Erratum in: Can Med Assoc J 1995 Apr 1; 152(7): 1045. Comment in: Can Med Assoc J 1995 Feb 1; 152(3): 392-3.
Negative comments made recently about use of the term "chair" instead of "chairman," and the continuing shortage of women at decision-making levels of organized medicine are ample evidence that the work of the CMA's Gender Issues Committee (GIC) is not done, says the committee chair, Dr. May Cohen. At its fall meeting, the GIC said the CMA should actively promote greater representation by women physicians on its political and expert committees; a target of at least 25% membership within the next 2 to 5 years was suggested. The committee discussed other measures the CMA should consider in its attempts to become more representative of Canada's physician population.

Scherzer, E. & Freedman, J. Physician unions: organizing women in the year 2000. J Am Med Womens Assoc 2000 Winter; 55(1): 16-19.
Interest in physician unions is growing, but surprisingly little has been written about whether union membership addresses the particular needs and interests of women physicians. We begin by looking at the history of physician unions in the United States and then examine physician unions today, and how labor laws influence union membership of physicians. The third section looks at why women join unions, whether these reasons hold true for women physicians, and what role women are playing in physician unions. Finally, we give examples of union responses to

gender discrimination and such issues as maternity leave, salary inequities, sexual harassment, and promotions. Since women are prominent as leaders in physician unions, these unions seem to be responsive to the needs of their women members.

Showalter, E. Improving the position of women in medicine. BMJ 1999 Jan 9; 318(7176): 7102.
Norway is one of the world's most progressive nations in terms of gender equity. In the 1990s, half of Norwegian medical students were female, but this does not ensure that more female doctors will find themselves in leadership roles in the near future. Kvaener et al (1998) concluded that women are more likely to be in leadership roles where women make up more than 25% of the population, and where the regular working hours correspond with regular family hours. Although women doctors may have similar aspiration as other women and other doctors, challenging work and fulfilling social lives, traditional gender roles (i.e. women's conflict between career and family) may inhibit the achievement of these goals. Simple institutional changes, such as setting up childcare facilities or adjusting work hours for mothers, will not remedy this problem. In fact, the very structure of the medical profession, in that deviation from the norm spells weakness rather than leadership potential, creates an inhospitable atmosphere for women as leaders. The lack of women in leadership roles is present in many other professions, and sex equality cannot be achieved by focusing solely on the problems of women. The real challenge is to change the attitude of men and to transform the public profile of success and leadership.

Swiss Medical Women's Association http://www.vsae.ch/engl/index.html (accessed 23 January 2008)

Ulstad, V.K. How women are changing medicine. J Am Med Womens Assoc 1993 May-Jun; 48(3): 75-8.
Women are influencing the history and practice of medicine. Women are biologically different from men, socialized with different values, have different leadership styles and needs, and are a minority group in medicine. These differences and our increasing numbers are sparking dramatic changes in medicine.

Werker, D. Chauvinism in the medico-political arena. CMAJ 1988 Oct 15; 139(8): 702.
Although the number of women in medicine has been increasing and some specialties are becoming female dominated, there are still few women entering the arena of "power and politics." The chauvinistic attitudes of certain men at CMA meetings will continue to deter women from becoming involved. Without mutual respect between the sexes, there remains an enormous barrier that women must overcome in order to contribute.

Williams, A.P., Pierre, K.D., & Vavda, E. Women in medicine: toward a conceptual understanding of the potential for change. J Am Med Womens Assoc 1993 Jul-Aug; 48(4): 115-21.
In 1959 only 6% of Canadian medical school graduates were women, but by 1989 44% of graduating classes were female. Recent data indicate that women are more likely than men to work as general practitioners, in groups, in urban settings, and on salary; to work fewer hours per week and to see fewer patients. In this paper we address the ongoing discussion of the impact of women's progressive entry into medicine. We suggest that a shortcoming of the discussion thus

far has been its preoccupation with a descriptive examination of women physicians' professional characteristics and practices; sufficient attention has yet to be paid to the development of a clearer conceptual understanding of the nature of gender differences and the potential for change they imply. Using data from quantitative and qualitative phases of a national study of Canadian physicians, we address the relationship between gender differences in practice and underlying attitudes and values and identify alternative hypotheses about the potential for change created as more women enter medicine. We suggest that this potential goes beyond professional demographics and workloads to the doctor-patient relationship, but that the extent of change will be mediated by the socializing impact of medical school and the extent to which women physicians are included in or excluded from positions of power within the profession. We suggest also, that to meaningfully understand and document change, greater attention must be given to arguments that women and men view the world in qualitatively different ways.

Chapter Five

Women Physicians Caring for Themselves and Their Families

Executive Summary

A. Physical health

- Women physicians report high health status compared to the general population
- Women report healthier lifestyles as compared to men physicians; decreased use of alcohol and tobacco, better exercise and sleeping habits among women physicians compared to men physicians in some countries
- In some studies, women physicians report more chronic health problems and increased use of health care system compared to men

B. Mental health

- Women physicians might experience a higher level of psychological distress than men, for example, they might react to events such as divorce or illness in the family with greater distress than men physicians

C. Sources of occupational stress

- Despite many stresses women experience high work and life satisfaction – "paradox of the contented worker"
- Women's personality traits are a source of stress (for example, a strong sense of guilt, chronic self doubt and an excessive sense of responsibility)
- Workplace politics (competitiveness, power politics, loss of autonomy, workplace hours, drive to out-perform men, lack of role models, discrimination, etc) are a source of stress
- Marriage and childrearing are both a source of stress and of support for women physicians
- 85% of women physicians marry other professionals; 50 - 60% marry other physicians
- Women physicians are more likely than male physicians to be single or divorced when compared to their men colleagues
- Disagreement as to whether dual-physician marriages are successes or failures, although some studies show a lower divorce rates in physician marriages

- Many challenges face married partners in physician marriages (i.e. competition); but studies have shown that a supportive relationship with one's spouse contributes to the woman physician's well-being
- In spite of challenges, women physicians report higher levels of satisfaction with work and life; possibly due to different career expectations and values, greater interest in intrinsic versus extrinsic rewards, etc.

D. Burnout, depression, substance abuse and suicide

- Increased risk of burnout among women physicians as compared with men physicians, often resulting in negative coping mechanisms
- Higher frequency of depression among women physicians when compared with men physicians and the general female population
- Higher suicide rates among women physicians as compared with the general female population
- Lower likelihood of substance abuse problems when compared to men colleagues
- Knowledge of elevated rates of depression and suicide may increase awareness and assistance, but may also lead to more discrimination against women physicians. The atmosphere encountered during medical training and practice (lack of flexibility, competitiveness, power politics, discrimination, etc.) can pose a special challenge to women physicians; becoming a physician requires overcoming many systemic social barriers (harassment, discrimination)

E. Implications for health care

- Women physicians' personal lives appear to determine the organization of their professional lives, and may have consequences on the planning and distribution of medical resources and services
- Health care administrators must allow for flexible work schedules, part-time practice, and non-traditional on-call arrangements

F. Conclusions

- Despite all the challenges, women physicians report high job and life satisfaction
- Women physicians care for themselves by developing strategies to cope with their professional and personal lives
- These strategies have implications for the profession of medicine

Literature Review: Women Physicians Caring for Themselves and Their Families

Introduction

In this chapter we summarize the literature describing women's experiences with their own physical and mental health and occupational stresses. Sources of occupational stresses include women's personality traits, workplace politics and role strain associated with marriage and parenting. Women physicians experience increased burnout, depression and suicide. These occupational stresses have implications for health planning.

Physical health

Women physicians report high physical health status. Two studies assessing physician physical health, one conducted in Sweden (Sundquist and Johansson, 1999) and the other conducted in Canada (Roskies, 1992), revealed that, compared to the general population, women physicians rank high on physical health. This favourable health status may be due to their favoured socio-economic position.

A study of Quebec physicians by De Koninck (1995) showed that women physicians also report healthier lifestyles (with respect to smoking, drinking, exercise, and sleeping habits, as well as body weight) when compared to their male colleagues.

Women physicians in Canada and Sweden do, however, report more chronic health problems, have a significantly higher degree of impaired health status, and use more physical and health services than do their men colleagues (De Koninck, 1995; Sundquist and Johansson, 1999). The discrepancy between women physicians' reported healthier lifestyles and their poorer health indicates that their health status may be determined by factors other than personal health-related behaviour.

Mental health

Women physicians sometimes experience mental health problems. Medicine is an inherently stressful and emotionally taxing profession. A study examining the mental and emotional health status of women GPs in Sweden, has shown their health to be lower than that of the general female population (Sundquist and Johansson, 1999).

A Canadian study showed that women physicians might experience a higher level of psychological distress than men physicians (De Koninck, 1995), indicating that gender has a mediating effect on the manner in which the stresses of the medical profession are experienced. For example, women physicians might react with greater distress to events such as divorce or illness in the family than do men physicians.

Sources of occupational stress

Practicing medicine is a source of occupational stress for many women physicians. A survey of U.S. women physicians by Frank et al. (1999a) showed that more than three-quarters of respondents reported moderate to severe work stress.

Gross, in 1997, reviewed studies investigating sources of occupational stress as perceived by men and women physicians in the United States, Canada, and Britain. Since men and women experience different work environments with respect to career and opportunity structures, power, and benefits, it is not surprising that gender differences in sources of stress are found. However, studies in all three countries reveal ambiguous findings, some discovering gender-specific sources of stress among physicians and some not. Gender differences surfaced only where open-ended questions were asked and led to the discovery of stressors more specific to women relating to traditional role relationships, family responsibilities, compared to men who more often reported stresses relating to relationships with patients and clinical stresses (Gross 1997).

Unique work-related stresses for women physicians, include role conflict with marriage and parenting, prejudice and discrimination, token status, sexual harassment, social isolation, lack of women role models, and inadequate family and institutional support (North and Ryall, 1997; Gross, 1997; Harari, 1998; Frank et al., 1999a).

Despite the above mentioned stressors, studies have shown that women physicians do have relatively high life and work satisfaction (Ducker, 1994; Carroll, 1995; De Koninck, 1997). In a survey of women physicians by Frank et al. (1999a), 84% of respondents were usually, almost always or always satisfied with their careers. These findings concur with results from other studies of women professionals which describe a "paradox of the contented worker" with women generally having lower pay, status, and authority than men, yet consistently describing themselves as more satisfied. Some authors have hypothesized that this discrepancy may be due to different career expectations, different values regarding job and career, greater interest in intrinsic versus extrinsic rewards (e.g. intellectual stimulation and relationships versus pay and prestige) (Frank, 1999a; McMurray, 2000).

Women's personality traits

Gautman (2001) reviewed the literature from 1980-2001and in describing how women face job and home related conflicts explained how some authors report that these stressors might be exacerbated by the specific personality traits found in women physicians (a strong sense of guilt, chronic self doubt, and an excessive sense of responsibility (Gabbard, 1985)), thus leading to personal distress. These traits may lead to personal distress, however, it is also noted that these qualities might lead to career success through high motivation (Gautman, 2001).

Some authors have speculated on the psychological impact on the woman physician of balancing professional and personal obligations. Because of the need to divide her time and energy between her personal and professional life, the woman physician is also constantly beset with divided loyalties and a sense of guilt. If she reduces work time, she may experience decreased professional rewards; if she decreases family time, she experiences anxiety, guilt, and strained relationships (Herbert, 1992; Hammond, 1993). Women physicians often push themselves to perform and

excel in all areas. Failure to meet all perceived responsibilities may lead to feelings of inadequacy and frustration about performance in both personal and professional spheres (Microys, 1986; Herbert, 1992; Hammond JA, 1993; Carroll, 1995; North, 1997). Several authors have identified role conflict as a major cause of decreased self-esteem and work satisfaction, as well as fatigue and depression (Microys, 1986; Brown, 1996).

These speculations are supported by two qualitative studies by Carroll et al. (1995) and Brown et al. (1996) of women family physicians practicing in Ontario, Canada, which show the impact of juggling career and family on the woman physician. Most of the women interviewed felt a great deal of pressure to be good mothers, housekeepers, and wives in addition to performing their professional duties. Several participants expressed a drive to perform the same level of work as their men colleagues. Many expressed a great deal of guilt, sadness and regret about having to "abandon" their children and families to perform their professional duties. All participants described having little time for themselves.

The medical profession often encourages young physicians to ignore and disregard their emotions in favour of a stoical and unaffected response to stress (Herbert, 1992). De Koninck et al. (1997) describe how women physicians expressed their frustration with the rigid and sometimes dehumanizing conditions present during training and practice, which they often felt coerced them into renouncing a part of themselves in order to take on a purely professional identity.

Workplace politics

The atmosphere and working conditions encountered during medical training, as well as during practice, can pose a special challenge to women physicians. Competitiveness, power politics, the need for constant assertion of one's identity (Microys, 1986), lack of autonomy and workplace control, work hours, (McMurray, 2000) the "pressure to out-perform their male colleagues" (Herbert, 1992), lack of role models and persistent "minority" status (Cohen, 1988; Ducker, 1994; Limacher, 1998), and discrimination (either due to gender or due to family responsibilities) (Limacher, 1998) are all potential challenges, stressors and barriers facing women in medicine.

In a study by Cohen et al. (1988), confidence levels during residency were significantly lower among women than men physicians and this acted as a detractor to career development. This relative lack of confidence in women has been observed elsewhere (Sonnert & Holton, 1996) and thus may not be limited to the medical profession. Parenting and other familial responsibilities have been shown to have a disproportionately higher negative impact on women physicians' career choice and advancement, compared to men physicians (De Koninck, 1997; Limacher, 1998)

Marriage and Childrearing

Some of the challenges of marriage and parenting are addressed in Topic 2: Women in Practice. The literature on dual physician marriages, double shifts and maternity leave issues are summarized and additional occupational stresses are included here.

The many challenges inherent in juggling family and career are balanced by the many rewards of marriage and parenthood. Quebec female physicians referred to their domestic responsibilities as their personal choice, not as the accomplishment of a social role. Many women view their

practice as simply one dimension of their life, and not as its defining central feature; although they may not achieve as much professionally as their men colleagues, they nevertheless have full lives. (De Koninck ,1997)

Several studies support these assertions by showing that marital and parental status has either no effect or a positive effect on mental health, career, and life satisfaction (Hsu and Marshal, 1987; Roskies and Carrier, 1992; Frank, 1999a; Frank, 2000; McMurray, 2000). In a study by Roskies and Carrier (1992), married women physicians with children showed significantly lower levels of depression and higher levels of life satisfaction when compared to single childless women physicians. In fact, the high rates of depression and low self-esteem found among single women physicians in this study highlight the need to address the unique issues faced by this particular sub-population of women physicians.

Several aspects of childbearing and childcare may be impacted by the woman physician's professional obligations (Dickstein, 1990). Timing of pregnancy tends to be deferred due to education or career stage. Some authors have expressed concerns that breastfeeding might suffer if a physician returns to work early, though evidence shows high breastfeeding rates among physicians.

According to Hammond (1993), children's reactions to their mothers' careers go through stages: 1) infants are relatively unaffected by their mothers' professional obligations; 2) young children seem to resent their mothers' absence; and 3) older children begin to take pride in their mothers' medical careers. These assertions are supported by the study by Brown et al. (1996), which reveals an apparent acceptance by the children of their mother's devotion to medicine.

While many women continue to perform the traditional role functions of the wife-mother in the home, in addition to meeting their professional responsibilities as doctors (Microys, 1986; Harari, 1998), they experience more stress from the conflict between career and home responsibilities than their men colleagues (Gross, 1997; Harari, 1998). Roughly 85% of women physicians marry other professionals; 50% to 60% marry other physicians (Levinson, 1989). Female physicians are more likely to be single or divorced when compared with their male colleagues (Limacher et al., 1998). The existing literature on the dynamics of dual-physician marriages does not reveal a consistent trend with regard to their success or failure (Doherty and Burge, 1989). Studies have shown both a higher and a lower prevalence of poor marriages and divorces among physicians relative to the general population. A study by Doherty and Burge (1989) found that physician marriages in general have a lower likelihood of ending in divorce than marriages among the rest of the employed population. A greater proportion of women physicians are divorced, but this difference reflects the higher prevalence of divorce among all employed women. In fact, when compared with other groups of employed women, women physicians are less likely to be divorced. Although these findings provide some insight into the status of women physicians' marriages, they do not necessarily reflect the quality of those marriages.

Dual physician marriages are much more common among women than men physicians (Gross, 1997). These marriages carry several inherent challenges, including the competing professional demands of both partners' careers. According to a study by Tesch et al. (1992), women physicians whose partners were physicians were more than twice as likely to interrupt their own careers for

their partners' careers when compared to those whose partners were not physicians. Furthermore, the potential for competition exists here as it does between any married partners who share the same career, resulting in marital strain if one spouse's career advances more rapidly (Beiser, 1994). Finally, although marriage correlates with less stress for men physicians, it may potentially lead to increased stress for women who retain the primary role of managing the household. Nevertheless, studies have shown that a supportive relationship with one's spouse contributes to the women physician's well being (Hsu, 1987; McMurray, 2000; Roskies and Carrier, 1992).

In the literature we found that women describe some strategies in marriage and childrearing that may provide a certain degree of psychological and emotional support. Some examples include negotiating with their spouses regarding the division of labour in domestic duties and increasing networking among women physicians (Microys, 1986). Institutionally, a more systemic solution to these issues may come from lobbying for work equity policies, parental leave policies, flexible hours and mentoring programs, as well as effective on-call sharing and workshops on assertiveness training and leadership skills (Gautam, 2001).

Burnout, depression, substance abuse and suicide

Burnout

The harsh and inflexible conditions often found in medical training and practice, coupled with the multiple stressors experienced by women professionals may exacerbate the women physicians' emotional exhaustion and lead to social isolation and burnout. A study of U.S. physicians by McMurray et al. (2000) found a 60% greater likelihood of burnout among women than men physicians. Burnout leads the individual to suffer decreased self-esteem and a sense of failure. Also, the physician's ability to provide care may be compromised, as can the ability to work with colleagues and staff (McMurray, 2000). Other cited negative coping mechanisms which may potentially be used by physicians suffering from burn-out include alcohol and drug abuse, promiscuity, anger at patients, preoccupation with a patient's illness and not the patient him/herself, sarcasm and cynicism. All these coping mechanisms erode the doctor-patient relationship and jeopardize patient care (Hammond, 1993).

Depression

Women physicians are reported to have a higher rate of depression than both men physicians and the general female population (Bowman, 1990). The rate of depression in women physicians was estimated in one study to be 39%, substantially higher than found in the general female population (Carlson and Miller, 1981). In a survey of U.S. women physicians by Frank et al. (1999b), 19.5% of respondents reported having a history of depression, similar to the reported rates of depression of between 7- 25% present among the general female population. A study of Canadian residents, interns, and fellows by Hsu et al. (1987) found that women respondents were 1.5 times more likely than men to be classified as depressed. Women were also three times as likely to fall into the severely depressed category. Depression was significantly associated with a history of alcohol or substance abuse, childlessness, increased home stress, dissatisfaction with career, less control over work, a history of severe harassment in a medical setting, and increased work stress. In a study of Canadian Quebec professionals by Roskies and Carrier (1992), single status and childlessness were significantly associated with the presence of depression in women

physicians, with almost twice as many single women in the high depression group (28%) compared to married women with children (15%).

Suicide

Several studies have shown the suicide rates among women physicians to be substantially higher than those among the general female population (Steppacher, 1974; Lindeman et al., 1996; Center et al., 2003). A study by Lindeman et al., (1996) found the risk of suicide among female physicians to be 2.5 to 5.7 times higher than that among the general female population.

The elevated rates of depression and suicide among women physicians are concerning and highlight the need for increased assistance to vulnerable, at-risk populations. Some authors have, however, pointed out that knowledge of higher rates of certain mental illnesses could be used as leverage for discrimination against women physicians in practice settings (e.g. in hiring practices, increased insurance premiums). It should be recognized that women physicians' vulnerability to depression is counterbalanced by a lower likelihood of substance abuse problems when compared with their men colleagues (Nace, 1995).

It is important to point out that in most of the studies conducted on the topic of physician mental health and suicide, the study populations represented a fairly narrow spectrum of socio-cultural environments, mostly in North American and Northern European countries. Therefore, there is insufficient basis for generalizing these results to medical practitioners living in other parts of the world.

Implications for health care

Women physicians' personal lives appear to determine the organization of their professional lives and may have a significant impact on the structure of health services in general. The individual strategies adopted by women physicians to balance their career and their personal life can, at a collective level, have consequences on the planning and distribution of medical resources and services. The accumulation of these individual strategies may pose important problems through decreased or lesser interest in some specialties (e.g. surgery), and by a lower level of participation in professional activities related to hospitalization, on-call work and emergency practice (De Koninck, 1997). Health care administrators need to be sensitive to the demands of different life cycles by allowing for flexible work schedules, part-time practice, and non-traditional on-call arrangements, and other creative ways of ensuring high quality patient care. Increasing the participation rate of women in organized medicine is also crucial in bringing forth sustained, long-term, and fundamental changes to the organization of the medical profession which will have beneficial effects for women as well as men physicians.

Conclusions

Women physicians experience many unique stressors within their work life. They have high physical health status and lifestyle behaviours, but suffer from chronic disease and poorer mental health status than men physicians or the general women population. They have high expectations about their own performance, which leads to personal distress. As well, they experience role conflict with marriage and parenting and more burnout, depression and suicide.

Despite all these challenges, women report high job and life satisfaction. This is the 'paradox of the contented worker' that concurs with similar studies of other women professionals. Women physicians care for themselves by developing strategies to cope with their professional and personal lives. These strategies have implications their families and for health service organization. By implementing these strategies women physicians can be enabled to be most productive during their professional lives.

Abstracts and Summaries: Women Physicians Caring For Themselves and Their Families

Beiser C, Roberts J. Medical marriages. BMJ 1994 Dec 24-31;309(6970):1673.
As the number of women in medicine increases so does the rate of dual physician marriages. A fundamental challenge to the two doctor marriage is the type of personality common among physicians, comprising the compulsive triad of doubt, guilt feelings, and exaggerated sense of responsibility. Moreover, women and men doctors often rank their priorities differently. Men tend to place work first, selves second, and families third; women often place work and families ahead of themselves. The potential for competiton exists between any married partners who share the same career, particularly if they have the same job or work in the same place. Marital strain can result if one spouse's career progresses more rapidly. The medical marriage requires tremendous organization and flexibility, an enlightened view of gender roles, and great trust.

Bowman MA, Allen DI. Stress and woman physicians. New York: Springer-Verlag, 1990.

Brown JB, Carroll J, Reid A. How family influences practice of obstetrics. Do married women family physicians make different choices? Can Fam Physician 1996 Jul;42:1319-26.
PURPOSE: To examine the influence of family, past and current, on married women family physicians' and to understand why and how some women continue to practise obstetrics. PARTICIPANTS: Purposive sample of nine married women family physicians who currently practise obstetrics. METHOD: Qualitative in-depth interviews. FINDINGS: Analysis identified four main influences of family on participants' practice of obstetrics: family of origin, transitions in the life cycle, children, and the marital relationship. For all participants, the expectations of being a "good wife and mother" persisted. Of all the influences of family, perhaps the most powerful was the participants' expressions of guilt and remorse over disruptions and time not spent with their children because of practising obstetrics. CONCLUSIONS: These women described how they combined the roles of wife, mother, daughter, sister, and doctor. Family was a powerful influence throughout their practice lives. Finding a balance between the demands of practice, particularly obstetrics, and family relationships was an ongoing process. The process was also influenced by transitions in the life cycle.

Carlson GA, Miller DC. Suicide, affective disorder, and women physicians. Am J Psychiatry 1981;138(10):1330-5.
Recent publications have noted a rate of suicide for women physicians considerably higher than that for women in the general population. The authors comment on some of the methodologic problems involved in this research and discuss the interaction between affective disorder and suicide as but a partial explanation of the higher risk of suicide among women physicians. The authors conclude that a number of risk factors are involved both in the relatively high lethality rate of some groups of professional women and in the relatively low lethality rate of women in general.

Carroll JC, Brown JB, Reid AJ. Female family physicians in obstetrics: achieving personal balance. CMAJ 1995 Nov 1;153(9):1283-9.

OBJECTIVE: To describe the experiences of female family physicians who practise obstetrics in balancing professional obligations with personal and family needs, given the unique challenges that such practice poses for these physicians. DESIGN: Qualitative study. SETTING: Ontario. PARTICIPANTS: A purposefully selected sample of nine female family physicians who met the criteria of being married, having children and currently practising obstetrics. OUTCOME MEASURES: Experiences of female family physicians and their strategies in their personal, family and professional lives that enable them to continue practising obstetrics. RESULTS: Most of the women interviewed felt a great deal of pressure to be good mothers, housekeepers, and wives while performing the same work as a male colleague. They expressed feelings of guilt, anxiety and regret. Nevertheless, all participants continued to practise obstetrics because of the pleasure they derived from it, despite the challenges of balancing the unpredictable demands of obstetrics with their personal and family needs. To continue in obstetrics, they needed to make changes in their lives, either through a gradual, evolutionary process or in response to a critical event. Alterations to work and family arrangements permitted them to meet the challenges and led to increased satisfaction. Changes included making supportive call-group arrangements, limiting work hours and the number of births attended and securing help with household duties. CONCLUSIONS: An in-depth examination, through the use of qualitative methods, showed the reasons why some female family physicians continue to practise obstetrics despite the stressful aspects of doing so. This knowledge may be useful for women who are residents or experienced clinicians and who are considering including obstetrics in their practice.

Center C, Davis M, Detre T, Ford DE, Hansbrough W, Hendin H, Laszlo J, Litts DA, Mann J, Mansky PA, Michels R, Miles SH, Proujansky R, Reynolds CF 3rd, Silverman MM. Confronting depression and suicide in physicians: a consensus statement. JAMA. 2003 Jun 18;289(23):3161-6.

OBJECTIVE: To encourage treatment of depression and prevention of suicide in physicians by calling for a shift in professional attitudes and institutional policies to support physicians seeking help. PARTICIPANTS: An American Foundation for Suicide Prevention planning group invited 15 experts on the subject to evaluate the state of knowledge about physician depression and suicide and barriers to treatment. The group assembled for a workshop held October 6-7, 2002, in Philadelphia, Pa. EVIDENCE: The planning group worked with each participant on a preworkshop literature review in an assigned area. Abstracts of presentations and key publications were distributed to participants before the workshop. After workshop presentations, participants were assigned to 1 of 2 breakout groups: (1) physicians in their role as patients and (2) medical institutions and professional organizations. The groups identified areas that required further research, barriers to treatment, and recommendations for reform. CONSENSUS PROCESS: This consensus statement emerged from a plenary session during which each work group presented its recommendations. The consensus statement was circulated to and approved by all participants. CONCLUSIONS: The culture of medicine accords low priority to physician mental health despite evidence of untreated mood disorders and an increased burden of suicide. Barriers to physicians' seeking help are often punitive, including discrimination in medical licensing, hospital privileges, and professional advancement. This consensus statement recommends transforming professional attitudes and changing institutional policies to encourage physicians

to seek help. As barriers are removed and physicians confront depression and suicidality in their peers, they are more likely to recognize and treat these conditions in patients, including colleagues and medical students.

Cohen M, Woodward CA, Ferrier BM. Factors influencing career development: do men and women differ? J Am Med Womens Assoc 1988 Sep-Oct;43(5):142, 147-54.
This study of graduates of McMaster University Medical School identified the determinants of career choice of 176 women and 106 men, grouped according to whether their specialties are traditional or non-traditional for women. All subjects reported that a number of factors enhanced career development. Women, however, reported more barriers to career development than men, and appeared to lack the support systems needed to readily combine career with family. Men who chose careers traditional for women also showed some vulnerability to these factors. Lack of confidence in their own abilities during their formal education was expressed by all groups, but less so by both men and women in careers nontraditional for women. During the postgraduate period, women were significantly more likely to identify lack of confidence as a factor than men, while in other periods, the differences were less dramatic. Many women, regardless of career choice, reported that the lack of female role models detracted from career development. More women than men identified both advantages and disadvantages of their gender; many women pursuing careers traditional for women identified patient preference for women physicians as an advantage. Specific gender-related disadvantages reported by women included being taken less seriously than men, sexism against women, and the difficulty of combining family and career.

De Koninck M, Guay H, Bourbonnais R, Bergeron P. Physical, mental, and reproductive health of Quebec women physicians. J Am Med Womens Assoc 1995 Mar-Apr;50(2):59-63.
In order to address the personal and professional characteristics as well as the physical, mental, and reproductive health of women physicians, a survey was mailed to a random sample of 3,000 women and men physicians in the province of Quebec, Canada. The data obtained from women physicians were compared with those from men physicians and with available data on a comparable subgroup of professional women. The sociodemographic and health data highlight the physical and mental health status of women physicians. A larger proportion of women than men physicians report healthy lifestyles (including smoking, drinking, exercise, sleeping habits, and body weight). Almost twice as many men as women physicians are regular smokers. However, women physicians report slightly more chronic health problems than their male colleagues, regardless of age; they also use more physical and mental health services. Women physicians also report a higher level of psychological distress than their male colleagues and also identify more stressful life events than men physicians. The proportion of physicians who admit having seriously considered suicide is twice as high among women as men (16% versus 7%). These data, which provide a global picture of Quebec women physicians, indicate that in spite of the challenges, they seem to reconcile their professional and parental activities without major repercussions on their physical and mental health.

De Koninck M, Bergeron P, Bourbonnais R. Women physicians in Quebec. Soc Sci Med 1997 Jun;44(12):1825-32.
This article presents the results of a qualitative study on women physicians in Quebec which aimed to go beyond a mere statistical description of the tendencies observed in their practices. It proposes an interpretation of their discourses on their practice and its context bringing

to light the interdependence of individual strategies and structural constraints. We met 30 women physicians and eight men physicians asking them to talk freely about their personal and professional experience. The data reveal how the individual characteristics and interests of women physicians prevail in their decisions at key moments in their lives which have repercussions on the shaping of their practice. These moments include admission into the faculty of medicine, training, professional orientation and the choice of a specialized field, organization of professional practice and personal life. The medical practice of women is constructed through these choices and the gender variable plays a more or less significant role at each stage of this construction. Their distinctive choices reflect how gender relations are reproduced in the private sphere and the interactions between their private and professional lives. According to our participants, a difference lies in the place occupied by their profession in women and men physicians' lives. Preoccupied by aspects other than professional, several of the female participants said they became critical of the training they received, particularly what they qualified as dehumanization and rigidity, as well as what they consider to be a denial of the individual being trained. Some of the participants drew a parallel between rigidity in their training and the rigidity they sometimes experience in practice. Familial responsibilities led some women to exclude or cease some professional activities. However, women referred to these domestic responsibilities as their personal choice, not as the accomplishment of a social role or as contribution to society. Many women view their practice as simply one dimension of their life, and not as its defining or central feature; that though they may not achieve as much as men professionally, they nevertheless have full lives. The private life of women physicians appears to be closely linked to their decisions regarding the organization of their professional life and as a result to the health services they provide, suggesting they have their own way of "being a physician". The individual nature of the strategies they adopt can have, at a collective level, consequences on the planning and the distribution of medical resources in the publicly managed health care system in Quebec while raising the global issue of gendered division of labor.

Dickstein LJ. Female physicians in the 1980's: personal & family attitudes & values. J Am Med Womens Assoc 1990;45(4):122-6.
A lengthy questionnaire asking about family background (parents, grandparents, and siblings), training and career, marriage, children, and gender discrimination was completed by 283 female physicians from the Commonwealth of Kentucky. Demographic information gathered indicated that these physicians were similar to other female physicians in the United States. Information about values and attitudes of the physicians, their parents and husbands added depth to the demographic numbers. Differences between results for older (born before 1950) and younger physicians were rare. A high degree of gender discrimination pervaded the results. Results are discussed in terms of efforts to eliminate gender discrimination in the personal and professional lives of female physicians.

Doherty WJ, Burge SK. Divorce among physicians. Comparisons with other occupational groups. JAMA 1989 Apr 28;261(16):2374-7.
This study had two goals--to evaluate critically the literature regarding the quality and stability of physicians' marriages and to present national data regarding the divorce-proneness of physicians in comparison with other occupational groups. The conclusions from the literature review were that (a) there is no sound evidence that physicians have lower marital quality than other

groups, and (b) methodological weaknesses in past research leave open the question of whether physicians are more prone or less prone to divorce than other groups. The conclusion from new analyses of 1970 and 1980 US census data was that both male and female physicians have a lower tendency to divorce than other occupational groups, including other groups of professionals.

Ducker D. Research on women physicians with multiple roles: a feminist perspective. J Am Med Womens Assoc 1994 May-Jun;49(3):78-84
This paper describes a feminist empiricist approach to research and conceptual advances in the study of women professionals and applies it to research on women physicians with multiple roles. In past research, social values about appropriate roles for women led to an emphasis on negative outcomes, vagueness about which roles conflict, and the assumption that the work role is the most problematic for women. The effects of social context, including interpersonal relationships, has also been ignored. Research using new approaches has shown that there are benefits to combining roles, that role conflict is most common between work and parental roles, and that role models and social support from the spouse is crucial. Research has also reported high career and life satisfaction among female physicians. The importance of the work environment is also stressed.

Frank E, Harvey L, Elon L. Family responsibilities and domestic activities of US women physicians. Arch Fam Med 2000 Feb;9(2):134-40.
BACKGROUND: Women physicians may have a multiplicity of domestic roles (eg, cook, housekeeper, child care provider) that are of inherent interest and that may affect their professional lives, but are largely unstudied. DESIGN, SETTING, PARTICIPANTS, AND MAIN OUTCOME MEASURES: We report data from respondents (N = 4501) to the Women Physicians' Health Study, a cross-sectional, questionnaire-based study of a stratified random sample of US women MDs. RESULTS: Women physicians with children aged 0 to 17 years spent a median of 24.4 hours per week on child care. Women physicians typically spent half an hour per day cooking, and another half-hour per day on other housework. Little time was spent on gardening: a median of 0.05 hours (3 minutes) per week. Those performing more domestic tasks are likely to work fewer hours outside the home and to be on call less often. Women physicians who are married or widowed, have more children, have lower personal incomes, and have more highly educated and higher-earning spouses perform more domestic activities. We found no significant adverse relationship between time spent on any domestic activity and career satisfaction or mental or physical health. CONCLUSIONS: Women physicians spend little time on domestic activities that can be done for them by others, including cooking, housework, and especially gardening. Women physicians spend somewhat less time on child care and substantially less time on housework than do other US women. Despite abundant editorializing about role conflicts of women physicians, our measures of career satisfaction and mental health were not adversely affected by time spent on domestic obligations.

Frank E, McMurray JE, Linzer M, Elon L. Career satisfaction of US women physicians: results from the Women Physicians' Health Study. Society of General Internal Medicine Career Satisfaction Study Group. Arch Intern Med 1999 (a) Jul 12;159(13):1417-26
BACKGROUND: Despite major changes in health care, the prevalence and predictors of career satisfaction have not recently been comprehensively studied in either women or men physicians. METHODS: The Women Physicians' Health Study surveyed a nationally representative random

sample (n = 4501 respondents; response rate, 59%) of US women physicians. Using univariate and logistic regression analyses, we examined personal and professional characteristics that were correlated with 3 major outcomes: career satisfaction, desire to become a physician again, and desire to change one's specialty. RESULTS: Women physicians were generally satisfied with their careers (84% usually, almost always, or always satisfied). However, 31% would maybe, probably, or definitely not choose to be a physician again, and 38% would maybe, probably, or definitely prefer to change their specialty. More than ¾ of respondents report moderate to severe work stress. Physician's age, control of the work environment, work stress, and a history of harassment were independent predictors of all 3 outcomes, with younger physicians and those having least work control, most work stress, or having experienced severe harassment reporting the most dissatisfaction. The strongest association (odds ratio, 11.3; 95% confidence interval, 7.3-17.5; P<.001) was between work control and career satisfaction. Other significant predictors (P<.01) of outcomes included birthplace, ethnicity, sexual orientation, having children, stress at home, religious fervor, mental health, specialty, practice type, and workload. Marital status was unrelated to any satisfaction outcomes. Physicians with children were more interested in again becoming a physicians. CONCLUSIONS: Women physicians generally report career satisfaction, but many, if given the choice, would not become a physician again or would choose a different specialty. Correctable factors such as work stress, harassment, and poor control over work environment should be addressed to improve the recruitment and retention of women physicians.

Frank E, Dingle AD. Self-reported depression and suicide attempts among U.S. women physicians. Am J Psychiatry 1999(b) Dec;156(12):1887-94.

OBJECTIVE: Studies examining suicide rates for U.S. women physicians and other U.S. women have found odds ratios as high as 4 to 1. Although such reports are controversial and are based on small groups (N = 17 to 49 suicides), they are often cited as evidence of a high prevalence of psychopathology among women physicians. METHOD: The authors used the results of the Women Physicians' Health Study (N = 4,501), a large, nationally distributed questionnaire, to assess the lifetime prevalence of self-identified depression and suicide attempts among U.S. women physicians. RESULTS: An estimated 1.5% (N = 61) of U.S. women physicians have attempted suicide, and 19.5% (N = 808) have a history of depression. Those who were born in the United States, were not Asian, had histories of cigarette smoking, alcohol abuse or dependence, sexual abuse, domestic violence, poor current mental health, more severe harassment, or a family history of psychiatric disorders were significantly more likely to report suicide attempts or depression. Depression was more common among those who were not partnered, were childless, had a household gun, had more stress at home, drank alcohol, had worse health, or had a history of obesity, chronic fatigue syndrome, substance abuse, an eating disorder, or another psychiatric disorder and among those who reported working too much, career dissatisfaction, less control at work, and high job stress. Strata reporting higher rates of depression tended to show higher (although usually nonsignificant) rates of suicide attempts. CONCLUSIONS: Depression is approximately as common among U.S. women physicians as among other U.S. women, but suicide attempts may be fewer. A number of conditions may help identify women physicians at high risk for suicide attempts and depression.

Gabbard GO. The role of compulsiveness in the normal physician. JAMA. 254(20):2926-9, 1985 Nov 22-29.
This article presents some observations from a workshop setting about the role of compulsiveness in the normal physician. Case examples illustrate the effect of this character trait on the professional, personal, and family life of the typical physician. Doubt, guilt feelings, and an exaggerated sense of responsibility form a compulsive triad in the personality of the physician. This triad manifests itself in both adaptive and maladaptive ways. This article focuses primarily on the maladaptive, including difficulty in relaxing, reluctance to take vacations from work, problems in allocating time to family, an inappropriate and excessive sense of responsibility for things beyond one's control, chronic feelings of "not doing enough," difficulty setting limits, hypertrophied guilt feelings that interfere with the healthy pursuit of pleasure, and the confusion of selfishness with healthy self-interest.

Gautam M. Women in Medicine: Stresses and solutions. West J Med 2001; 174: 37-41
CONTEXT: The number of women in medicine is rapidly increasing. It is thus important to understand the unique stressors and challenges facing women in medicine and to identify solutions to combat these stressors. DESIGN: Summary of literature taken from MEDLINE from 1980 to 2001 using search the terms women, medicine, and physicians as well as the author's personal experience and research. RESUTLS: Women physicians face both work-related and home-related stresses, and may find that their personal needs often come last. Although compulsive personality traits found in female physicians (as strong sense of guilt, chronic self-doubt, and an excessive sense of responsibility) can help lead to professional success, these traits can also cause personal distress. Women may feel that they have tried to please everyone and ended up pleasing no one. CONCLUSION: A more broad-level solution to these issues may come from lobbying for work equity policies, parental leave policies, flexible hours, and mentoring programs, as well as effective on-call sharing and workshops on assertiveness training and leadership skills.

Gross EB. Gender differences in physician stress: why the discrepant findings? Women Health 1997;26(3):1-14
Studies investigating sources of occupational stress as perceived by male and female physicians in the United States, Canada, and Britain are reviewed. Since men and women experience different conditions of work, such as career and opportunity structures, power, and benefits, gender differences in physician stress would be expected. However, studies in all three countries reveal ambiguous findings, some discovering gender-specific sources of stress among physicians and some not. An explanation for these contrasting results is found in the methodology, especially in how sources of stress were measured. Gender differences surfaced only where open-ended questions were asked, whereas none were found when stress inventories were used. Because much occupational stress research, including that on physicians, is based upon male or predominantly male populations, results do not necessarily apply to women. Even if objective conditions conducive to stress were the same, perceptions of work environment characteristics may vary between men and women. For example, women may be more likely to feel a greater sense of responsibility for others than do males. In general, open-ended questions lead to the discovery of stressors more specific to women. These include conflict between career and family, dual career issues (as women are more likely to be in a dual career marriage), lack of role models, isolation,

and responsibility. To solve pragmatic problems of stress on the job, measures of work stress unique to women need to be developed and systematically explored.

Hammond JA. Mother, doctor, wife. Can Fam Physician 1993 Jul;39:1591-6
Women physicians often play a triple role: mother, doctor, and wife. Guilt and anxiety appear to be related to the role of the mother. Motherhood has high demands and low control. Timing of pregnancy tends to be deferred due to education or career stage and breastfeeding might suffer if a physician returns to work early. The conflict between professional and personal life may lead to social isolation, burnout and impairment. Female physicians are reported to have twice the amount of depression as male physicians and four times that of the general population. They have higher suicide rates than other women. This situation can be extremely stressful. Understanding the stresses of each role and setting priorities to help make each role more fulfilling are important for balancing career and personal life.

Harari E. The doctor's troubled marriage Aust Fam Physician 1998 Nov;27(11):999-1004
BACKGROUND: Reports about the health of doctors have included claims of an increased risk of unhappy marital and family relationships. Recent studies cast doubt on these pessimistic conclusions but certain patterns of troubled marriages seem to exist as do certain stressors, to which doctors may be particularly susceptible. OBJECTIVE: To describe the individual and interpersonal dynamics of problematic marriages commonly encountered among medical practitioners and to review some common stressors in medical marriages in general. DISCUSSION: About 50% of women doctors marry a doctor. While the emotionally protective, stress buffering effect of marriage is evident for both men and women doctors, the latter consistently report greater concerns about the effects of the demands of their work on family life, and experience many constraints on their career ambitions. Many women continue to perform many of the traditional role functions of the wife-mother in the home, in addition to meeting their professional responsibilities as doctors. As a result, women doctors experience more stress from the conflict between career and home responsibilities than men doctors or other women in non-medical, dual career families. The large increase in the number of women doctors in the past 20 years has brought new challenges to women and men seeking to balance their family and professional commitments.

Herbert CP. Stressful issues for physicians and their families: Women physicians and their challenges. BC Med J 1992 Apr;33(4): 205-207.
Key to understanding the stress felt by all physicians is acknowledgement of the difficult balance that exists between a career in medicine and personal life. Women physicians in training may feel isolated or pressured because of their gender. In practice, they may attract demanding patients. Women feel that they have to put aside their emotions in order to conform to the "boot-camp" mentality of medicine. It is suggested that the best way for a woman to succeed in medical training is to be stoical and hardworking, while remaining cheery, supportive and helpful, i.e. traditionally female. Female physicians feel the pressure to work harder than men to earn praise and respect from at least some of their mentors. They report difficulty in forming and maintaining relationships. Conflict may be felt between career and family. Married women academic physicians experience delayed career progress. Women physicians are one-fourth as likely as men to be alcohol or drug abusers, but their suicide rate is four times higher than the

overall rate for white women. Management strategies for preventing or dealing with impairment are suggested.

Hsu K, Marshall V. Prevalence of depression and distress in a large sample of Canadian residents, interns, and fellows. Am J Psychiatry 1987 Dec;144(12):1561-6.
Using data from 1,805 interns, residents, and fellows in Ontario, Canada, the authors report the prevalence of symptoms measured by the Center for Epidemiologic Studies Depression Scale (CES-D). They found that the proportion of subjects scoring as depressed was somewhat higher than that found in community studies. Women had higher depression scores than men. They were 1.5 times more likely than men to be classified as depressed. Women were also three times as likely to fall into the severely depressed category. The proportion of unmarried house staff with moderate or severe depression scores was higher than that of married house staff. Thus being married is associated with less distress for both men and women. Considerable differences were found by specialty, and depression was most prevalent in the first year of postgraduate training. These findings have implications for those who direct postgraduate medical training or who seek to alleviate unnecessary stress in the postgraduate education experience.

Levinson W, Tolle SW, Lewis C. Women in academic medicine: combining career and family. N Engl J Med 1989;321(22):1511-7.
We conducted a national survey to explore how women in academic medicine balance career and family responsibilities. A questionnaire was mailed to all women 50 years of age and under who held full-time appointments in departments of medicine (n = 862), as listed in the faculty roster of the Association of American Medical Colleges. The survey included questions about childbearing and child rearing, attitudes about personal and professional issues, and role models. Of the 694 questionnaires that were delivered, over 80 percent were completed (n = 558). The mean age of the respondents was 38.1 years, and 63 percent had children. The 350 mothers had a mean of 1.9 children; only 3 had 4 or more children. Approximately half the respondents with children had their first child after completing medical training (mean age, 30.6 years), and they were absent from work for a median of 6 weeks post partum; 72 percent took no time off before labor and delivery, and 83 percent were back at work within 12 weeks. The majority were satisfied with their decision to have children and with their careers, despite the fact that 78 percent believed that their career progress had been slowed or markedly slowed by their having had children. We conclude that it is possible for women to combine motherhood with a fulfilling career in academic medicine, but it is difficult, and most such women believe that motherhood slows the progress of their careers.

Limacher MC, Zaher CA, Walsh MN, Wolf WJ, Douglas PS, Schwartz JB, Wright JS, Bodycombe DP. The ACC professional life survey: career decisions of women and men in cardiology. A report of the Committee on Women in Cardiology. American College of Cardiology. J Am Coll Cardiol 1998 Sep;32(3):827-35
OBJECTIVES: This survey was conducted to learn how the career decisions of women and men in cardiology influenced their professional and personal lives. BACKGROUND: Women represent only 5% of practicing adult cardiologists and 10% of trainees. Yet, women and men now enter medical school at nearly equal numbers. The factors that contribute to career satisfaction in cardiology should be identified to permit the development of future strategies to ensure that the best possible candidates are attracted to the profession. METHODS: A questionnaire developed

by the Ad Hoc Committee on Women in Cardiology of the American College of Cardiology (ACC) was mailed in March 1996 to all 964 female ACC members and an age-matched sample of 1,199 male members who had completed cardiovascular training. RESULTS: More men than women were married. Women were more likely to describe their primary or secondary role as a clinical/noninvasive than invasive cardiologist ($p < 0.0001$ women vs. men). Men and women both reported a high level of satisfaction with family life, but women were less satisfied with their work as cardiologists (88% vs. 92%, $p < 0.01$) and with their level of financial compensation. Compared with men, women expressed less overall satisfaction (69% vs. 84%) and more dissatisfaction with their ability to achieve professional goals (21% vs. 9%). These differences were most pronounced for women in academic practice. Women reported greater family responsibilities, which may limit their opportunities for career advancement. Women were more likely to alter training or practice focus to avoid radiation. A majority of women (71%) reported gender discrimination, whereas only 21% of men reported any discrimination, largely due to race, religion or foreign origin. CONCLUSIONS: Women cardiologists report overall lower satisfaction with work and advancement, particularly within academic practice. They report more discrimination, fewer role models, more concerns about radiation and more limitations due to family responsibilities, which may ultimately explain the low percentage of women in cardiology. Attention to these issues may result in programs to improve professional satisfaction and attract the best candidates into cardiology in the future.

Lindeman S, Laara E, Hakko H, Lonnqvist J. A systematic review on gender-specific suicide mortality in medical doctors. Br J Psychiatry 1996 Mar;168(3):274-9.
BACKGROUND. So far no comprehensive systematic review has been published about epidemiologic studies on suicides among medical practitioners. The aim here is to describe the variation of published estimates of relative risk of doctors to die from suicide. METHOD. A systematic review of published original articles on population-based studies, registered mainly in MEDLINE and fulfilling specific methodological requirements. Incidence rates and standardised mortality ratios were calculated for male and female doctors in relation to the reference groups. RESULTS. The estimated relative risk varied from 1.1 to 3.4 in male doctors, and from 2.5 to 5.7 in female doctors, respectively, as compared with the general population, and from 1.5 to 3.8 in males and from 3.7 to 4.5 in females, respectively, as compared with other professionals. The crude suicide mortality rate was about the same in male and female doctors. CONCLUSION. In all studies the suicide rates among doctors were higher than those in the general population and among other academic occupational groups.

McMurray JE, Linzer M, Konrad TR, Douglas J, Shugerman R, Nelson K. The work lives of women physicians results from the physician work life study. The SGIM Career Satisfaction Study Group. J Gen Intern Med 2000 Jun;15(6):372-80.
OBJECTIVE: To describe gender differences in job satisfaction, work life issues, and burnout of U.S. physicians. DESIGN/PARTICIPANTS: The Physician Work life Study, a nationally representative random stratified sample of 5,704 physicians in primary and specialty nonsurgical care (N = 2,326 respondents; 32% female, adjusted response rate = 52%). Survey contained 150 items assessing career satisfaction and multiple aspects of work life. MEASUREMENTS AND MAIN RESULTS: Odds of being satisfied with facets of work life and odds of reporting burnout were modeled with survey-weighted logistic regression controlling for demographic

variables and practice characteristics. Multiple linear regression was performed to model dependent variables of global, career, and specialty satisfaction with independent variables of income, time pressure, and items measuring control over medical and workplace issues. Compared with male physicians, female physicians were more likely to report satisfaction with their specialty and with patient and colleague relationships (P <.05), but less likely to be satisfied with autonomy, relationships with community, pay, and resources (P <.05). Female physicians reported more female patients and more patients with complex psychosocial problems, but the same numbers of complex medical patients, compared with their male colleagues. Time pressure in ambulatory settings was greater for women, who on average reported needing 36% more time than allotted to provide quality care for new patients or consultations, compared with 21% more time needed by men (P <.01). Female physicians reported significantly less work control than male physicians regarding day-to-day aspects of practice including volume of patient load, selecting physicians for referrals, and details of office scheduling (P <.01). When controlling for multiple factors, mean income for women was approximately $22,000 less than that of men. Women had 1.6 times the odds of reporting burnout compared with men (P <.05), with the odds of burnout by women increasing by 12% to 15% for each additional 5 hours worked per week over 40 hours (P <.05). Lack of workplace control predicted burnout in women but not in men. Parental status, including men and women under th eage of 64 years having children under the age of 6, did not predict burn-out. For those women with young children, odds of burnout were 40% less when support of colleagues, spouse, or significant other for balancing work and home issues was present. CONCLUSIONS: The extra stress found in women physicians arises from the greater time and effort being expected of them to communicate with patients and address psychosocial and health maintenance issues, rather than or in addition to the issues related to work-family conflicts. The fact the presence of children for women under the age of 45 added no additional explanatory power to stress and burnout suggests that work-family conflicts may not in and of themselves be a major source of excess burnout in female physicians. Gender differences exist in both the experience of and satisfaction with medical practice. Addressing these gender differences will optimize the participation of female physicians within the medical workforce.

Microys G. Women as doctors, wives, and mothers. Can Fam Phys 1986; 32: 339-342.
The number of women choosing medicine as a career has increased significantly over the last 20 years. However, unlike their male colleagues, married women physicians also carry and seem to expect to carry the major responsibility for household and child care. As a result, they suffer role conflict in trying to be superdocs, superwives, and supermoms, and role strain in combining their multiple roles. In some cases, this role conflict may lead to episodes of depression, fatigue, and feeling worn out. In addition, medical training reinforces such qualities as aggressiveness, control, self-sufficiency, and achievement. The female physician may thus feel the added strain of having to integrate some of her values as a woman with the somewhat disparate values expected of the typical physician. She may compensate by trying to become 'one of the boys', which in turn may lead to emotional isolation and marriage to medicine. More networking among women physicians; seminars for dual career couples; reduced hour training programs for both men and women; paternity as well as maternity leave; effective on-call sharing; housekeeping agencies for professionals; and a crisis hotline for female doctors are suggested ways to ease their role overload.

Nace EP, Davis CW, Hunter J. A comparison of male and female physicians treated for substance use and psychiatric disorders. Am J Addict 1995;4(2):156-62.

North CS, Ryall JE. Psychiatric illness in female physicians. Are high rates of depression an occupational hazard? Postgrad Med 1997 May;101(5):233-6, 239-40, 242.
It has been estimated that up to 39% of female physicians experience major depression during their lifetime. The suicide rate for female physicians is alarmingly high. However, female physicians appear to be at lower risk for substance abuse than male physicians. One suggestion to explain finding of high depression and suicide rates among female physicians is that women with psychological problems self-select to the medical field. Alternatively, stresses experienced by women in medical training or practice (e.g. competing family and career pressures, role conflicts) may increase their vulnerability to depression. Women in medicine may be torn between career and family demands that generate feelings of inadequacy about performance in both spheres. Further, women may experience stress in negotiating career disruption, making difficult career choices, and facing prejudices against women in the medical field. The medical profession could benefit from increased awareness of depression among female physicians and removal of barriers to treatment, such as stigma and discrimination against those with psychiatric illness.

Roskies E, Carrier S. Marriage and children for professional women: asset or liability? APA/ NIOSH Conference Washington, Nov. 19-22, 1992
Just as marriage and children are seen as obstacles to career success, so are single status and childlessness commonly perceived as harmful to personal well-being. This study compares the career patterns and personal well-being of three groups of professional women: never-married and childless, married without children, and married with children. The data shows no differences between single women and married childless women in number of hours worked, income, job satisfaction or work involvement. Women without children, married or not, work significantly longer hours and report significantly higher levels of work involvement than their counterparts with children. Childless women do not earn significantly more than those with children nor do they report increased work satisfaction. As for personal well-being, compared to the general population, the sample as a whole ranks high on physical and psychological health; in view of their favored socio-economic status, this is hardly surprising. However, all three indices of psychological health (self-esteem, life satisfaction and depression) show significant differences according to family status. There's a clear progression, with never-married women consistently faring worst, married childless women faring better, and married women with children faring best of all. There were almost twice as many single women in the high depression group (28%) compared to women with children (15%). According to these results, marriage does not impede career in any way (number of hours, income, work satisfaction, involvement), and even in the presence of children, has only selective effects. On the other hand, single women in the sample report lowest levels of self-esteem and life satisfaction and the highest levels of depression.

Sonnert G, Holton G. Career patterns of women and men in the sciences. American Scientist 84 (1):63-71 Jan-Feb 1996.
This paper describes a study of men and women recipients of prestigious post-doctoral fellowships in the natural sciences in the U.S. Nearly 1,000 recipients were surveyed over three decades. Gender differences and similarities in career progress and obstacles were described. A

glass ceiling was evident for women in physical sciences, mathematics and engineering but not in biology. Although policies exist to prohibit discrimination in advancement, three-quarters of women reported this, compared to 13% of men. Women reported more collaboration in their graduate studies compared to men, but less as post-doctoral fellows and afterwards. Women who had been affiliated with women mentors during postdoctoral fellowships were more likely than women who were not, to leave academia. Women were more likely to feel less confident and assertive in their abilities, and were more likely to report being perfectionists and not allowing the opportunity to be criticized. This was believed to partially explain women's somewhat lower publication rates, however in a smaller sub-study, women's publication were more often cited than men's. Women noted different communication and collaboration styles compared to men. They reported difficulty initiating contacts and networking with "great men" at conferences due to differences in socialization and assertiveness. Women also reported a preference for establishing their own niche rather than working on problems under study by others. Women with families were more likely to accept positions that accommodated their husbands career locations rather than vice versa. Marriage, especially to another scientist, was seen as advantageous for emotional and support reasons.

Steppacher RC, Mausner JS. Suicide in male and female physicians. JAMA 1974 Apr 15;228(3):323-8.

The frequency of suicide among physicians in the United States over the 5 ½ -year period of March 1965 to August 1970 was studied. Suicides and possible suicides were identified through the obituary listing in JAMA. Confirmation of suicide was attempted for equivocal cases where possible. Within this time period, 530 deaths by suicide were identified, 489 in men and 41 in women. Analysis indicated that the rate in male physicians was approximately 1.15 times that of the overall male population, whereas for female physicians the rate was fully three times that expected on the basis of population values. For physicians 45 years of age and over, suicide rates were somewhat higher for men. Below that age, there was a marked excess among the women. Twelve of the 41 women were in training. The findings are consistent with reports of high rates of suicide among females in other professions.

Sundquist J, Johansson SE. Impaired health status, and mental health, lower vitality and social functioning in women general practitioners in Sweden. A cross-sectional survey. Scand J Prim Health Care 1999 Jun;17(2):81-6.

OBJECTIVE: The aim was to analyse differences between female and male general practitioners (GPs) in health status and lifestyle and compared with the general population in health-related quality of life. DESIGN: A simple random sample of 1004 GPs from the whole of Sweden (71.2%) participated in a survey in May 1996 about self-reported health status, smoking habits, physical activity, and SF-36 quality of life survey. They were compared as regards SF-36 with the general population in Sweden in three approximately similar-sized age groups of women and men aged 30-44, 45-49, and 50-64. RESULTS: Female GPs had a higher risk than male GPs of impaired health status. Of the female GPs aged 45-49, 22.8% reported that their health was impaired compared with 12.6% of male GPs. Less than 5% of the GPs younger than 45 were daily smokers. Female GPs had higher means for physical functioning but lower means for vitality, social functioning, and role emotional and mental health compared with the general population. CONCLUSIONS: The significant increased risk in poor health among female GPs,

especially those aged 45-49, is worrying and argues for appropriate analysis and prevention that are tailored to their working conditions.

Tesch BJ, Osborne J, Simpson DE, Murray SF, Spiro J. Women physicians in dual-physician relationships compared with those in other dual-career relationships. Acad Med 1992 Aug;67(8):542-4.

Approximately 85% of women physicians marry professionals, 50% of whom are also physicians. This study compared the career and domestic responsibilities of women physicians whose domestic partners were physicians (WP-Ps) with those of women physicians whose domestic partners were not physicians (WP-NPs). In 1988 the authors surveyed 602 women physicians in a large midwestern city regarding their career and domestic roles; 390 were physicians in training (students and residents), and 212 were physicians in practice (academic medicine and private practice). Overall, 382 (63%) responded; of the 382, 247 (65%) had domestic partners; of these 247, 91 (37%) were WP-Ps and 156 (63%) were WP-NPs. The WP-Ps were found to be twice as likely as the WP-NPs to interrupt their careers to accommodate their partners' careers. The WP-Ps also assumed significantly more domestic responsibilities and worked fewer hours practicing medicine than did the WP-NPs. The 163 women physicians in training (44-48%-of the WP-Ps and 119-76%-of the WP-NPs) demonstrated a more egalitarian division of labor overall, with no significant differences between the WP-Ps and the WP-NPs. The authors recommend that longitudinal studies be undertaken to determine whether women physicians in training continue this trend as they enter the practice of medicine.

Chapter Six

Women Physicians in the Doctor-Patient Relationship

Executive Summary

General Overview: Women's professional attitudes, conduct and practice patterns differ from those of men physicians in some countries

A. Practice Patterns: Prevention and counselling

Prevention

- Studies suggest women physician place greater emphasis on preventive care

Counselling

- Studies suggest women physicians place a greater emphasis on counselling and health education

Relationship with specialty

- Some studies suggest that female physicians in other specialties have similar practice patterns to those in family medicine

Social attitudes

- Some studies report more liberal social attitudes and more awareness of social determinants of health among women physicians

B. Patient population

- Women physicians attract more women patients to their practices
- Women physicians provide more gynecological, obstetrical, and other women's health care than men physicians; in some cases even in spite of working fewer hours
- Women patients tend to prefer women physicians for female-specific health concerns
- Women physicians see different kinds of children for different visit purposes
- A consequence of this may be that women physicians may have limited exposure to men's health issues

C. The Medical Encounter

Communication and practice style

- Women physicians are more likely to spend more time in consultations and offer more support to their patients
- Women physicians have been found in research to be more sympathetic to women
- Women may be more comfortable with domestic violence issues
- Women have been shown to perform fewer technical interventions and write fewer prescriptions
- Studies suggest women physicians take a broader more interactive approach to patient care
- There are other studies showing no difference between men and women physicians on these issues

Patient satisfaction

- Studies show higher satisfaction with women physicians, especially for women patients
- Women may self-select women physicians because they prefer more interaction and discussion

Sexualization of the medical encounter

- Women physicians may be at greater risk of sexual harassment in the medical encounter with male patients
- This may be more difficult to diffuse for women physicians since they often have women staff members

Activity levels

- Studies of family physicians and general practitioners found that women billed more per patient encounter but provided fewer service compared to men
- Providing counselling and health education may seem costly at the time but may prevent costly health problems in the long run

A feminist perspective on the medical encounter

- The power imbalance between patient and physician may be exacerbated when the patient is female and the physician a man
- Traditionally women's health and bodily functions have been medicalized and the male body has been seen as the norm
- Women's health complaints are sometimes not taken as seriously

- Women physicians can play an important role in addressing the power imbalance by providing understanding, counselling, information and tools for women to maintain their own health

Literature Review: Women Physicians in the Doctor-Patient Relationship

Introduction

Numerous studies have been conducted in order to examine the relationship between physician gender and the doctor-patient relationship. The main areas of discussion have been gender-based similarities and differences in physician characteristics, practice patterns, patient population, and practice and communication style. The purpose of this chapter is to review the international literature that identifies challenges and highlights opportunities facing women family physicians caring for patients. This summary will enable us to share strategies to address some of the difficulties facing women physicians and to celebrate the strengths they bring to their practices.

Most of the research we have reviewed is from the United States and Canada. It is therefore limited in scope from an international perspective and might not be generalizeable to other countries. Moreover, some reported research is limited even further to a small geographic community, a province, state or city. The literature is also largely based on survey data that rely on individual physicians personal opinions and recall.

Practice patterns: Prevention and counseling

Prevention

Studies conducted on physician practice patterns suggest that female physicians have a greater involvement in preventive care, particularly for women's health issues. In a survey of Canadian primary care physicians, Woodward et al. (1996) and Franks & Bertakis (2003) found that women physicians were significantly more likely to provide female-specific preventive services (i.e. Pap smears, breast examinations, and mammography), however a study in the U.S. found that the proportions of patients up to date on preventive screening was the same overall for women and men physicians but women physicians were more likely to perform Pap screening (Flocke, 2005). Female physicians were more likely to provide preventive health counseling and immunization to patients of both sexes, compared to male physicians (Flocke, 2005). This correlation was also present for some non-sex-related preventive measures (Flocke, 2005). A study by Bertakis et al. (1995) showed that women physicians at a primary health centre in California devoted 36% more time to preventive services than did men physicians. In addition, female patients were found to receive more preventive services than men patients. These findings concur with the results of a survey in North Carolina by Kreuter et al. (1995) of patients from family medicine practices. Patients who saw a woman physician were more likely to receive Pap tests and cholesterol tests, and start mammograms at a younger age. These results persisted even after adjusting for patient variables known to influence screening decisions, such as age, years of education, ethnicity, and income levels. Finally, Bensing et al. (1993), in their study of sex differences in practice style showed that Dutch women doctors spend more time with their patients, provide more continuity of care and, regardless of the sex of the patient, ordered more laboratory tests than men doctors.

Counseling

Women physicians were also found to place a greater emphasis on counselling and health education in their practices. Data from a national survey of 1000 U.S. physicians showed that women physicians were significantly more likely to counsel patients about alcohol and other drug use, as well as about unsafe sexual behaviors (Frank & Harvey 1996). Women physicians were also more likely than their men colleagues to review their patients' health-related practices during the medical history, although this difference was only significant for reviewing sexual histories. Other studies showed similar results, finding that both male and female patients of women physicians experienced higher rates of counselling regarding health-habits (Flocke, 2005) counseling around sensitive topics (such as, use of drugs and alcohol, concerns about family violence, sexually transmitted diseases) than patients of men physicians (Henderson, 2001). Scholle et al (2001) have also found that women physicians in the U.S. were more likely to see children at higher risk for psychosocial problems and were more likely than men to view this care as problematic. A recent study by Maheux et al. (1997) examining STD prevention behavior by Canadian family physicians revealed that women physicians did not differ from men in the extent to which they took a sexual history, but did provide more condom-related preventative counseling to their patients.

Effect of specialty

Physician specialty may have a strong mediating effect on the provision of preventive services and health-related counselling. Several of the above-mentioned studies were conducted in primary care settings, which are generally known for practicing preventative care (Bertakis et al., 1995 (US); Kreuter et al., 1995 (US); Woodward et al., 1996 (Canada); Maheux et al., 1997 (Canada)). Some authors have therefore hypothesized that these results may not reflect practice patterns among women physicians in non-primary care specialties. A US study by Cassard et al. (1997) found that regular patients of women physicians were more likely to have had a Pap smear or blood cholesterol test within the last three years than patients of men family physicians, and regular patients of women internists were more likely to have had a Pap smear than patients of men internists. Physician gender did not affect rates of blood pressure screening or breast exams. The authors concluded that physician specialty might be a more powerful predictor of levels of provision of preventive services. Frank and Harvey (1996), also in the US, found that differences between family physicians and other specialties for counseling on prevention even among men, however women physicians remained significantly more likely to discuss sensitive issues such as sexual history.

Social attitudes

These studies suggest that women physicians may be inherently more prevention-oriented, more open to discussing reproductive and sexual issues, and more comfortable conducting female-specific preventive measures (Kreuter et al., 1995 (US); Woodward et al., 1996 (Canada); Cassard et al., 1997 (US)). A study by Frank and Lutz (1999) suggests that women family physicians possess more (self defined) politically liberal social attitudes. They may therefore be more aware of the social determinants of health and more likely to address these through counselling and preventive measures. Having a more liberal approach to problem resolution often results in seeking community-based solutions to individual health problems. An alternative hypothesis is

that women physicians are sought out by patients interested in health education and preventive services due to the general assumption that women physicians are more receptive to providing such services. Patient expectations rather than physician gender may therefore act as the main determining factor for emphasis on preventive screening and counselling (Woodward et al., 1996 (Canada); Cassard et al., 1997 (US); Henderson and Weisman, 2001 (US)). Fennema et al (1990) (US) wrote that patients who preferred female physicians reported humane behaviors as more characteristic in female physicians and those who preferred male physicians reported humane behavior as more characteristic of men; patients who had no overall sex preference did not sex stereotype physicians on these behaviors.

The influence of physician gender on the provision of preventive services and health education has important implications for the future of health care. With the rising costs of tertiary health care, there is an increased effort to expand and provide preventive health services, as well as patient counselling and education. With increasing numbers of women entering medicine, we may see a stronger emphasis on primary and preventive health care and health education.

Patient population

Studies on health care utilization patterns, in North America, show a tendency for women physicians in primary care settings to attract a greater number of female patients, especially for female-specific examinations and health concerns. Several studies have shown that women physicians saw a higher proportion of women patients than did men physicians (Cooke and Ronalds, 1985 (UK); Woodward et al., 1996 (Canada); Bensing et al., 1993 (Holland); Cohen et al., 1991 (Canada)). Women physicians also reported providing more obstetrical, gynecological, and other women's health care (including screening, prenatal care, and family planning) than their men colleagues (Cooke and Ronalds, 1985 (UK); Bensing et al., 1993 (Holland); Orzano and Cody, 1995 (US); Woodward et al., 1997 (Canada)). In fact, Woodward et al. (1997) found that, despite the large number of women in their study population who described themselves as working three-quarter time or less, women physicians reported caring for significantly more pregnant women yearly than male physicians. Patient surveys and similar studies also revealed a tendency for women patients to prefer women physicians for gynecological and obstetrical care as well as for behavioral and emotional problems (Fennema et al., 1990 (US); Cohen et al. (Canada), 1995; Ahmad et al., 2002 (Canada)), though this preference did not always extend to other non-female-specific clinical health concerns (Fennema et al., 1990 (US). Possible explanations for this preference include physician's attitudes and communication style, patients' stereotyping of physicians, and the quality of patients' past experiences with men and women physicians (Fennema et al., 1990 (US); Ahmad et al., 2002 (Canada)). Cultural and religious beliefs may also have a strong mediating effect on patients' choice of physician gender. Scholle et al., (2001), in a US study of primary care offices, showed that men and women physicians see different kinds of children for different visit purposes and have different kinds of relationships with these patients.

Some authors have suggested that the increased emphasis on women's health in women physicians' practices may limit their exposure to men's health issues. Bensing et al. (1993) in their research of Dutch general practitioners, found that women family physicians see fewer problems of the male genital system, as well as fewer musculoskeletal and respiratory problems.

Orzano and Cody (1995) in their study of 90 family practice residents in the US concluded that women and men family practice residents had different clinical experiences in terms of the range of health concerns seen while in training, largely due to the higher proportion of women patients seen and genitourinary problems encountered by women residents. It was suggested that this skewed exposure might negatively impact the comprehensiveness of the educational experience for women residents. Conversely, men residents may not be receiving adequate training in addressing female-specific health concerns. Educators may need to create individual resident "educational prescriptions" based on the gender distribution and resulting gender-related exposures of a resident's clinical experience.

The findings from these studies suggest that many women choose to have women physicians for social, cultural and religious reasons. Women, men and children present with different health problems and have different expectations from their encounters. Lack of access to a woman primary care physician or obstetrician may be a barrier to accessing health care for a substantial number of women and children.

The medical encounter

Communication and practice style

The impact of physician gender on communication and practice style during the medical encounter has received a significant amount of attention in the literature. Some authors believe that women physicians conduct longer visits, offer more support to their patients, and possess a higher awareness of the impact of psychosocial factors in patient care (Arnold et al., 1988 (US); Roter and Hall, 1998 (US and Canada)). This was illustrated when women physicians were found to make more positive statements, use more partnership language, ask more questions about medical and psychosocial issues, and emit more back-channel responses (Hall et al, 1994b (US); Roter et al, 1991 (US)). These assertions have been supported by several empirical studies. A study by Rose and Saunders (1986) in the US, on nurses' and physicians' attitudes toward women experiencing domestic violence found that women, regardless of profession, were more sympathetic toward these patients than men. A study by Reid and Glasser (1997), also in the US, revealed that women physicians tended to be more comfortable addressing domestic violence and tended to approach this issue in a more open and collaborative manner. A study by De Koninck et al. (1997), in Quebec, Canada, found that women physicians believed themselves to be more empathic toward their patients, attributing this to their ability to share personal experiences. The respondents believed this to be an example of the interaction between their private and professional lives. Bensing et al. (1993) in Holland showed that, regardless of the gender of the patient, women physicians performed fewer technical-medical interventions and wrote fewer prescriptions, but conducted more passive and active counseling. Patients of women physicians responded to this practice and communication style by engaging in significantly more positive talk and partnership building, and were more likely to ask questions, give substantially more biomedical information, and engage in twice as much psychosocial talk. These studies and others show that women physicians take a broader approach to patient care. A survey of medical students found that women students scored higher on patient-centred attitudes (Haidet, 2002). One review on this topic reported that patients spoke more to women than male physicians and disclosed more medical and psychosocial information, however it also found that patients were

more assertive toward women physicians and interrupted more (Hall, 2002). Another review found that women physicians in primary care conducted 10% longer visits, and engaged in more patient-centred communication, engaged in more active partnership communication, counseling and psychosocial question asking (Roter, 2004).

These findings are, however, not unanimous across the literature. Bertakis et al. (1995) in their study of the influence of gender on physician practice style, in the US, showed that women and men physicians did not differ in the total time spent with the patient. A study by Scholle et al. (2001), also in the US, found that, although women physicians spent more time with their patients and expressed more positive beliefs about psychosocial care, they saw fewer patients for psychosocial problem visits than men physicians and were not more likely to identify psychosocial problems or to give counselling. The authors did note, however, that aspects of the practice environment that they studied might limit the identification and treatment of psychosocial problems. Some practices may assign cases to the first available physician rather than a continuity provider, thus reducing the opportunity for physicians working part-time (as many women physicians do) to learn about their patients.

Patient satisfaction

Women physicians' distinct practice and communication style may partly explain the high patient satisfaction observed in some studies. Bertakis et al. (1995) in the US, found that patients were significantly more satisfied with women physicians than with men physicians. Derose et al. (2001), also in the US, found that higher levels of satisfaction among women patients of women physicians than among women patients of men physicians (physician gender was not associated with male patients' satisfaction). However, a study by Hall et al. (1994a) in the US, found that patients were more satisfied with men rather than women physicians, and that male patients examined by younger women physicians were the least satisfied of those questioned. The study also found that male patients tended to dislike discussions of psychosocial problems with their physician. This may partly explain the finding that male patients were dissatisfied with women physicians, as women tend place a special emphasis on discussing the psychosocial issues surrounding health.

Patient satisfaction may influence other patient behaviors, such as poor participation in the medical visit, non-compliance with regimens, disenrolment from prepaid health plans, and doctor-shopping.

Sexualization of the medical encounter

A special issue for physicians is the risk of sexualization of the medical encounter by the patient. Women physicians may not be able to neutralize the situation as easily as men by having a staff member present, as staff members are also usually women. The lack of clear guidelines for dealing with sexual harassment by the patient highlights the need for further exploration of this topic during residency training and for the development of appropriate strategies to address these concerns (Cohen et al. 1995 (Canada)).

Activity levels

Recent studies on practice patterns and activity levels among female physicians have raised questions regarding the relative productivity of female versus male physicians. A study by Woodward and Hurley (1995) in Canada, found that female family physicians and general practitioners were the only group of women who consistently billed more per patient seen and provided fewer services per patient than their male colleagues. A similar study by Cohen et al. (1991) found that, although there were no differences in the number of services provided per patient, the women billed significantly more per service and somewhat more per patient. These findings may be partly explained by the increased length of the medical encounter and the greater number of psychotherapy and counseling services offered by female physicians. Neither study provided data on quality of care, patient health status at the time of the visit, or patient health outcomes. Therefore, it is not possible to judge, based on these findings, whether or not female physicians are more or less productive than their male colleagues. Some have speculated that providing health education and addressing and caring for the underlying psychosocial components of patients' health problems may eventually decrease utilization of health care facilities or services. The increased provision of such services by women, while appearing to increase cost per service and per patient, may eventually lead to a decrease in the strain on the health care system and improvements in patient health and patient satisfaction (Cohen et al., 1991).

A feminist perspective on the medical encounter

Examination of the doctor-patient encounter from a feminist perspective leads to a consideration of the issue of power balance within the physician-patient relationship. The high degree of expert, esoteric knowledge possessed by the physician allows the physician to dominate the medical encounter through either validating or disregarding the patient's own understanding of his or her health problems (Malterud, 1993). The power imbalance in the medical encounter is particularly problematic for female patients who are exposed to not only expert power, but gender power as well.

This power imbalance is revealed through medicalization and ignoring; two prominent and pervasive processes where women's health problems are undermined within the medical encounter. Medicalization occurs when distinctive features of women's health and bodily functions are regarded as abnormal, defined as diseases, and made available for medical intervention. Ignoring occurs when there is insufficient medical knowledge about common women's health issues. Female patients who suffer from illness without disease and present symptoms that lack a valid diagnostic label are regarded as hypochondriacs. Their suffering is thus minimized or disregarded (Malterud, 1993).

Medical research and knowledge is produced from a predominantly male perspective, wherein the male body is seen as the norm. Female-specific health problems, often arising from female-specific causes, are thus judged as aberrant or ignored all together. Therefore a male-dominated medical culture tends to undermine issues relating specifically to women's health and well-being.

Women physicians can play an important role in addressing the power imbalance in the medical encounter and facilitating empowerment of the female patient. Empowering the patient

requires several elements including recognition of the oppression felt by the patient, empathy, respect for the person as a person, responding to the patient's changing abilities, exploring and understanding the patient's own understanding of her illness, respecting and maintaining the patient's sense of control over her life, and providing the patient with the tools and information to maintain her own health (Candib, 1995).

Conclusions

There are many characteristics attributed to women physicians that are believed to influence their interaction with patients. Women are perceived as being more nurturing and caring and there is evidence that women family physicians provide more preventive services and counseling. However, these findings may be complicated by the fact that patients who desire these qualities in a physician may seek out a woman physician. It is well documented that women physicians in family medicine have a larger female patient population than men, and therefore provide more female-specific care. Patient satisfaction in some settings has been higher for women physicians.

Abstracts and Summaries: Women Physicians in the Doctor-Patient Relationship

Ahmad F, Gupta H, Rawlins J, Stewart DE. Preferences for gender of family physician among Canadian European-descent and South-Asian immigrant women. Fam Pract. 2002 Apr;19(2):146-53.

OBJECTIVE: The aim of this study was to investigate expressed preferences for family physician (FP) gender among Canadian European-descent (CED) and Canadian South-Asian (CSA) immigrant women. METHOD: An 'on-site' survey was conducted in community-based institutions in Toronto in order to determine preferences for the gender of FP under various health care scenarios: overall health care; gender-sensitive examinations; emotional problems; general ailments; and life-threatening conditions. RESULTS: Ninety-four women responded to this survey (CED = 50, CSA = 44), response rate 77.3%. For all health care scenarios, CED and CSA women similarly expressed either a preference for a female FP or no preference. More than two-thirds of women preferred a female FP for gynaecological examinations (CED, 72.9%; CSA, 83.7%) or examinations with private body part exposure (CED, 72%; CSA, 81.8%). For 'emotional problems', half of the women preferred a female FP and the other half had no preference. A similar pattern was observed for 'overall health care', with some shift to female physician preference among CSA women (60.5%) compared with CED women (53.2%). For the 'overall health care' scenario, CED and CSA women who preferred a female FP had a higher frequency of seeing female physicians within the last 5 years (CED, P < or = 0.01; CSA, P < or = 0.05), and attributed 'positive' social skills more to female physicians (CED, P < or = 0.01; CSA, P < or = 0.01) compared with women with no preference for the gender of the FP. Yet, CED women with a female FP preference were more likely to have a concurrent female FP (P < or = 0.01), and to rate past experiences with female physicians as high (P < or = 0.01) and with male physicians as low (P < or = 0.05) compared with CED women with no preference. In the CSA group, women with a preference for a female FP were more likely to be unemployed (P < or = 0.01) and have low social support (P < or = 0.01). CONCLUSIONS: Despite similar physician gender preference patterns, factors associated with these preferences show some differences between CED and CSA women.

Arnold RM, Martin SC, Parker RM. Taking care of patients--does it matter whether the physician is a woman? West J Med. 1988 Dec;149(6):729-33.

Researchers have recently begun to compare male and female physicians' attitudes toward patients, medical knowledge, and practice styles. Although women start medical school with more "humanistic views," the conservative effect of medical socialization on both male and female students attenuates these differences. While some studies suggested that men are more scientifically knowledgeable, recent studies showed no significant differences in physicians' medical knowledge. Male and female physicians also had comparable diagnostic and therapeutic behavior. In the intimate world of physicians and patients, however, there were notable differences. Women physicians seemed better able to communicate sensitivity and caring to patients, which may account for the common perception that women are more caring and empathic physicians. Medical educators may wish to study more closely female physicians' communication styles to identify these behaviors and inculcate them into all physicians.

Bensing JM, van den Brink-Muinen A, de Bakker DH. Gender differences in practice style: a Dutch study of general practitioners. Med Care. 1993 Mar;31(3):219-29.
The differences between female and male general practitioners (GPs) were studied regarding three different factors: 1) Do female GPs see more female patients than their male colleagues in the same practice?; 2) Are female GPs confronted with different types of health problems from their male colleagues?; and 3) Do female GPs provide different services to their patients? Data from the Dutch National Study on Morbidity and Interventions in General Practice were used. All practices in this study with both female (n = 23) and male (n = 27) GPs were selected. This resulted in detailed data on 47,254 consultations, 62% of which were with female patients. The three research questions all received an affirmative response: 1) female patients tend to choose female general practitioners; 2) female GPs see different health problems from their male colleagues, and that is only partly because the patient so chooses; and 3) besides the expected differences in female-specific problems, there is a clear GP-gender effect in the presence of 'social' and 'metabolic' problems in the female GP's consultations. Some differences in the provision of services between male and female GPs occurred, with female GPs spending more time on their patients and having a stronger tendency to provide continuity of care. In addition to a gender effect (both physician and patient) a part-time effect in most issues studied was observed.

Bertakis KD, Helms LJ, Callahan EJ, Azari R, Robbins JA. The influence of gender on physician practice style. Med Care. 1995 Apr;33(4):407-16.
As more women enter medicine, intriguing questions arise about how physician gender impacts practice style. To measure this influence in primary care encounters, 118 male and 132 female adult new patients, having no stated preference for a specific physician, were randomly assigned to university hospital primary care residents, and their initial encounters were videotaped. Forty-eight male and 33 female physicians participated. Patient health status was assessed before the visit with the Medical Outcomes Study Short-Form General Health Survey. Physician practice style was evaluated by using the Davis Observation Code to analyze videotapes of each initial visit. Patient satisfaction with medical care was assessed with satisfaction questionnaires. Contrary to prior reports, the difference between male and female physicians in total time spent with patients was small and statistically insignificant, and diminished further when controlling for patient gender and health status. Female physicians, however, were observed to engage in more preventive services and to communicate differently with their patients. These differences in practice style appear to explain partially the observed higher patient satisfaction scores for female physicians. This study underscores the importance of careful measurement and control of potential confounding factors in clarifying the impact of physician gender on practice style.

Candib LM. 1995. Power-in-Relation. In Medicine and the Family (pp. 240-273). New York; BasicBooks.
This chapter explores the existing power structure within the medical encounter and suggests a model of collaborative patient care which acknowledges and respects the patient's own knowledge, sense of self, and control over her health, and leads to increased empowerment of the patient. The practice of empowerment entails recognition of oppression and the patient's feeling of disempowerment, empathy, respect for the person as a person, responding to the patient's changing abilities and anticipating growth and change, acknowledging and validating the patient's own explanations of her symptoms, taking the patient seriously, respecting the patient's

priorities and allowing her control over as much of the circumstances of medical and health care as possible, and teaching the patient to care for her own health needs as much as possible.

Cassard SD, Weisman CS, Plichta SB, Johnson TL. Physician gender and women's preventive services. J Womens Health. 1997 Apr;6(2):199-207.
OBJECTIVE: To determine whether the gender of women's regular physicians, controlling for physician specialty, is associated with women's receiving key preventive services within recommended intervals. DESIGN: Cross-sectional, nationally representative women's health telephone survey conducted by Louis Harris and Associates in February and March 1993 for The Commonwealth Fund. PARTICIPANTS: A total of 2,525 women in the continental United States, > or = 18 years old, including oversamples of African-American and Hispanic women. MAIN OUTCOME MEASURES: Receipt of each of five preventive services (blood pressure reading, Pap smear, cholesterol test, clinical breast examination, and mammogram) within specific periods. RESULTS: Physician gender makes a significant difference for two specialty areas and for three preventive services. Patients of women family or general practitioners are more likely than the patients of men to have received a Pap smear or a blood cholesterol test within the last 3 years, and the patients of women internists are more likely to have received a Pap test. Physician gender is associated with a higher likelihood of mammography, but this finding was limited to patients ages 40-49 of women family or general practitioners. Physician gender does not affect receipt of blood pressure screening or breast examination. CONCLUSIONS: Analyses reveal limited evidence that physician gender affects women's receipt of preventive services. Physician specialty appears to be a more powerful predictor of preventive services received. The limited evidence for a physician gender effect, however, is relevant for those women who rely on a family or general practitioner or an internist for regular care.

Cohen M, Ferrier BM, Woodward CA, Goldsmith CH. Gender differences in practice patterns of Ontario family physicians (McMaster medical graduates). J Am Med Womens Assoc. 1991 Mar-Apr; 46(2):49-54.
This study examined the extent to which physician gender influences practice patterns. Data came from the Ontario Hospital Insurance Plan billing profiles of general practitioner and family medicine graduates of McMaster University School of Medicine. The women physicians studied were more likely to be certified in family medicine than then men and a higher proportion of their patients were female. Women were more likely to be working part time, billed during fewer months of the year, earned less, and saw fewer patients. They saw a higher proportion of female patients, especially those in the 15-49 age group. They provided greater numbers of services in psychotherapy and counseling and ordered more laboratory tests; associated wit this were higher costs per service per patient. Women offered a less diverse mix of services than men. They provided fewer hospital, emergency room, and intrapartum services and a lower proportion of women included house calls, after-hours work, hospital, emergency room, surgical or intrapartum services in their service mix. Thus these women appeared more likely to restrict their practices to the office setting and to provide a higher proportion of psychosocial care. The overall impact of these sex differences in practice patterns on the health care system requires further exploration.

Cohen M, Woodward CA, Ferrier B, Williams AP. Sanctions against sexual abuse of patients by doctors: sex differences in attitudes among young family physicians. Can Med Assoc J. 1995 Jul 15;153(2):169-76.

OBJECTIVE: To explore attitudes of new-to-practice certified family physicians in Ontario concerning sanctions against sexual abuse of patients by physicians and to assess the importance of concern about accusations of sexual abuse in influencing clinical decisions. DESIGN: Qualitative study and cross-sectional survey. SETTING: Ontario. PARTICIPANTS: Focus groups: 34 physicians who completed family medicine residency training between 1984 and 1989 participated in seven focus groups between June and October 1992. Survey: all certificants of the College of Family Physicians of Canada who received certification between 1989 and 1991 and were currently practicing in Ontario. Of the 564 eligible physicians 395 (184 men and 211 women) responded, for an overall response rate of 70.0%. The response rate among the male and female physicians were 70.5% and 69.6% respectively. OUTCOME MEASURES: Physicians' attitudes toward restricting physical examinations done by physicians to same-sex patients, mandatory reporting of sexual impropriety and loss of license in cases of sexual violation, and the perceived importance of concern about accusations of sexual abuse of patients. RESULTS: During the focus groups, male physicians in particular expressed concerns about the effect on their practice patterns of the current climate regarding sexual abuse of patients. Female physicians agreed that female patients do seek them out for sexually sensitive examinations and that male colleagues refer female patients to them for such examinations. Female physicians were concerned about possible accusations of sexual abuse, but expressed concerns regarding possible sexualization of the clinical encounter by male patients. In the survey, equal proportions of men (163 [93.7%]) and women (191 [92.3%]) disagreed with restricting examinations to same-sex patients. The women were more likely than then men to agree that all suspected cases of sexual impropriety committed by other physicians should be reported (121 [58.7%] v. 86 [50.0%]), whereas the men were more likely to disagree (48 [27.9%] v. 32 [15.5%]) ($p = 0.008$). The women were also more likely than the men to agree that physicians should lose their license permanently if they were found guilty of sexual violation (125 [62.2%] v. 73 [43.5%]), whereas the men were more likely to disagree (61 [36.3%] v. 37 [18.4%]) (p, 0.001). Almost half of the men (80 [46.5%]) but only 28 women (14.1%) reported that concerns about accusations of sexual abuse were of importance in their clinical decisions ($p < 0.001$). CONCLUSIONS: Young female family physicians practicing in Ontario are much more likely than their male counterparts to endorse permanent loss of license for physicians who sexually abuse patients and are examinations by physicians. Educational approaches to protect patients while ensuring that appropriate care continues to be delivered are essential.

Cooke M, Ronalds C. Women doctors in urban general practice: the patients. Br Med J (Clin Res Ed). 1985 Mar 9;290(6470):753-5.

A large study from a representative sample of general practitioners in Manchester showed that women doctors saw more women patients than men doctors, especially in the childbearing age group. They saw a similar range of diagnoses as men doctors, though they saw more women patients for cervical smears, contraception, and breast disorders. Preventive health care may not be adequately provided for these in practices without a woman partner.

De Koninck M, Bergeron P, Bourbonnais R. Women physicians in Quebec. Soc Sci Med. 1997 Jun;44(12):1825-32.

This article presents the results of a qualitative study on women physicians in Quebec which aimed to go beyond a mere statistical description of the tendencies observed in their practices. It proposes an interpretation of their discourses on their practice and its context bringing to light the interdependence of individual strategies and structural constraints. We met 30 women physicians and eight men physicians asking them to talk freely about their personal and professional experience. The data reveal how the individual characteristics and interests of women physicians prevail in their decisions at key moments in their lives which have repercussions on the shaping of their practice. These moments include admission into the faculty of medicine, training, professional orientation and the choice of a specialized field, organization of professional practice and personal life. The medical practice of women is constructed through these choices and the gender variable plays a more or less significant role at each stage of this construction. Their distinctive choices reflect how gender relations are reproduced in the private sphere and the interactions between their private and professional lives. According to our participants, a difference lies in the place occupied by their profession in women and men physicians' lives. The private life of women physicians appears to be closely linked to their decisions regarding the organization of their professional life and as a result to the health services they provide, suggesting they have their own way of "being a physician". The individual nature of the strategies they adopt can have, at a collective level, consequences on the planning and the distribution of medical resources in the publicly managed health care system in Quebec while raising the global issue of gendered division of labor.

Derose KP, Hays RD, McCaffrey DF, Baker DW. Does physician gender affect satisfaction of men and women visiting the emergency department? J Gen Intern Med. 2001 Apr;16(4):218-26.

OBJECTIVE: To assess the association of physician gender with patient ratings of physician care. DESIGN: Interviewer-administered survey and follow-up interviews 1 week after emergency department (ED) visit. SETTING: Public hospital ED. PATIENTS/PARTICIPANTS: English- and Spanish-speaking adults presenting for care of nonemergent problems; of 852 patients interviewed in the ED who were eligible for follow-up, 727 (85%) completed a second interview. MEASUREMENTS AND MAIN RESULTS: We conducted separate ordered logistic regressions for women and men to determine the unique association of physician gender with patient ratings of 5 interpersonal aspects of care, their trust of the physician, and their overall ratings of the physician, controlling for patient age, health status, language and interpreter status, literacy level, and expected satisfaction. Female patients trusted female physicians more (P =.003) than male physicians and rated female physicians more positively on the amount of time spent (P =.01), on concern shown (P =.04), and overall (P =.03). Differences in ratings by female patients of male and female physicians in terms of friendliness (P =.13), respect shown (P =.74), and the extent to which the physician made them feel comfortable (P =.10) did not differ significantly. Male patients rated male and female physicians similarly on all dimensions of care (overall, P =.74; friendliness, P =.75; time spent, P =.30; concern shown, P =.62; making them feel comfortable, P =.75; respect shown, P =.13; trust, P =.92). CONCLUSIONS: Having a female physician was positively associated with women's satisfaction, but physician gender was not associated with men's satisfaction. Further studies are

needed to identify reasons for physician gender differences in interpersonal care delivered to women. KEY WORDS: patient satisfaction; gender; physician-patient relations; delivery of care; health care quality.

Fennema K, Meyer DL, Owen N. Sex of physician: patients' preferences and stereotypes. J Fam Pract. 1990 Apr;30(4):441-6.

Patients' preferences for physicians of a particular sex tend to skew sex distributions of clinical populations in training and practice settings. A study was developed to explore these preferences and potential reasons for them. Of 185 adult patients surveyed at four family practice residency clinics, 45% expressed a preference for sex of physician; 43% of women and 12% of men preferred a female physician, while 31% of men and 9% of women preferred a male physician. Patients who stated no overall preference often expressed one in specific clinical situations, eg, anal or genital examinations. Patients who preferred female physicians reported humane behaviors as more characteristic of female physicians, and those who preferred male physicians reported humane behaviors as more characteristic of men; patients who had no overall sex preference did not sex stereotype physicians on these behaviors (F = 59.34, P less than .01). Patients who preferred male physicians reported technical competence behaviors as more characteristic of male physicians; others did not sex stereotype physicians on these behaviors (F = 15.4, P less than .01). Patients rated humaneness and comprehensiveness as being of high priority, but no relationship was found between priorities for aspects of care and preferences for sex of physician. Areas for future investigation include assessing preferences in other populations and exploring sex differences in physician behavior during office encounters and correlating these differences with patient satisfaction.

Flocke SA, Gilchrist V. Physician and patient gender concordance and the delivery of comprehensive clinical preventive services. Med Care 2005;43:486-92.

BACKGROUND: Understanding the role of patient- and physician-gender on delivery of preventive services has important implications for identifying strategies to increase preventive service delivery. We attempt to overcome methodological limitations of previous studies in examining the association of the patient-physician gender interaction on the delivery of preventive screening, counseling, and immunization services. METHODS: In this cross-sectional study, research nurses directly observed 3256 consecutive adult patient visits to 138 family physicians. Delivery of gender neutral US Preventive Services Task Force (USPSTF) recommended screening, health behavior counseling, and immunization services was assessed by direct observation and medical record review. Multilevel regression analyses were used to test the interaction effect of physician and patient gender with preventive service delivery, controlling for patient age, insurance type, number of office visits in the past 2 years and physician age. RESULTS: The interaction effect of physician and patient gender was not significantly associated with delivery of gender neutral screening, counseling, or immunizations. Patients of female physicians were more up-to-date on counseling services ($P < 0.01$) and immunizations ($P < 0.05$) than patients of male physicians. Male patients, independent of physician gender, were more up-to-date on counseling and immunizations ($P < 0.01$). CONCLUSIONS: Physician-patient gender concordance is not associated with delivery of more preventive services. Rather, female physicians provide more counseling and immunization services to all of their patients. Previous research showing higher rates of gender-specific screening achieved by women physicians may

have been an indication of an overall greater prevention orientation among women physicians rather than a specific benefit of gender concordance.

Frank E, Harvey LK. Prevention advice rates of women and men physicians. Arch Fam Med. 1996 Apr;5(4):215-9.

BACKGROUND: As the number of women in medicine and the emphasis on prevention and primary care increase in the United States, it is important to know the extent to which female and male physicians advise patients about prevention. It is also important to know whether any gender-based differences are attributable to women's higher rates of choosing primary care specialties. Prior studies have examined only small populations of physicians, limited physician specialties, or few prevention-related outcomes. METHODS: Telephone survey from a systematic random sample of the Physician Masterfile maintained by the American Medical Association. One thousand US physicians (167 women and 833 men); a 48% response rate. Self-reported frequency with which physicians review patients' health behaviors and initiate counseling about unhealthy behaviors. RESULTS: Of the surveyed physicians, 44% stated that they always reviewed the patient health behaviors in question, and 36% usually systematically counseled patients when unhealthy behaviors were known. Female physicians were significantly more likely than were male physicians to report systematic counseling about unhealthy behaviors (52% vs 37.8%, P < .001, chi 2). We also analyzed our data by adjusting for age and including only family and general physicians and internists. After these adjustments, gender-based differences remained in the direction of female physicians being more likely than male physicians to report reviewing patients' health practices and providing systematic counseling, although these differences no longer reached statistical significance. Gender-related differences were greatest for more sensitive behaviors (ie, drug use and sexual behaviors). Primary care physicians were more likely than other physicians to review and counsel patients about health behaviors. This specialty-based difference was more significant among male than among female physicians. CONCLUSIONS: In this random sample, although all physicians counseled patients inconsistently about prevention, female physicians reported systematically counseling patients more than did male physicians, and primary care physicians reviewed and counseled more often than did physicians in other specialties.

Frank E, Lutz LJ. Characteristics of women US family physicians. Arch Fam Med. 1999 Jul-Aug;8(4):313-8.

CONTEXT: There have been no national studies comparing women family physicians (FPs) with other physicians; determining FP characteristics is useful in workforce and health systems planning and may also be of inherent interest to FPs and others. DESIGN AND PARTICIPANTS: A comparison of the FP (n = 347) and other (n = 4154) respondents to the Women Physicians' Health Study. MAIN OUTCOME MEASURES: Personal and clinical practices. RESULTS: Women FPs are more likely to be US-born and self-defined as politically liberal than were other women physicians. Those graduating from medical school in the 1950s through 1970s were less and those graduating in the 1980s were far more likely to be board certified than were other women physicians. Although their personal and household incomes were significantly lower, their professional satisfaction was similar to those of other women specialists, and they reported a lesser frequency of severe work stress. Personal health-related habits and health status of women FPs were similar to those of other women physicians. For

all 14 counseling practices examined, the amount of counseling they reported performing, the clinical relevance they ascribed to those practices, their self-confidence in performing the practices, and the amount of training they received was as high as or higher than that of other women primary care practitioners and usually exceeded those of non-primary care physicians outcomes at the P < .001 level. CONCLUSIONS: Although women FPs resemble other women physicians in some respects, they are more liberal, are professionally well-satisfied, and are relatively avid preventionists.

Franks P, Bertakis KD. Physician gender, patient gender, and primary care. J Womens Health (Larchmt) 2003;12:73-80.
BACKGROUND: Studies of the effects of physician gender on patient care have been limited by selected samples, examining a narrow spectrum of care, or not controlling for important confounders. We sought to examine the role of physician and patient gender across the spectrum of primary care in a nationally representative sample, large enough to examine the role of gender concordance and adjust for confounding variables. METHODS: We examined the relationships between physician and patient gender using nationally representative samples (the U. S. National Ambulatory Medical Care Surveys from 1985 to 1992) of encounters of 41,292 adult patients with 1470 primary care physicians (internists, family physicians, and obstetrician/gynecologists). Factors examined included physician (age, gender, region, rural location), patient (age, gender, race, insurance), and visit characteristics (diagnoses, gender-specific and nonspecific prevention, duration, continuity, and disposition). RESULTS: After multivariate adjustment, female physicians were more likely to see female patients, had longer visit durations, and were more likely to perform female prevention procedures and make some follow-up arrangements and referrals. Female physicians were slightly more likely to check patients blood pressure, but there were no significant differences in other nongender-specific prevention procedures or use of psychiatric diagnoses. Among encounters without breast or pelvic examinations, visit length was not related to physician gender, but length was longer in gender concordant visits than gender-discordant visits. CONCLUSIONS: Female physicians were more likely to deliver female prevention procedures, but few other physician gender differences in primary care were observed. Physician-patient gender concordance was a key determinant of encounters.

Haidet P, Dains JE, Paterniti DA, Hechtel L, Chang T, Tseng E, Rogers JC. Medical student attitudes toward the doctor-patient relationship. Med Educ 2002;36:568-74.
CONTEXT: Medical educators have emphasized the importance of teaching patient-centred care. OBJECTIVES: To describe and quantify the attitudes of medical students towards patient-centred care and to examine: (a) the differences in these attitudes between students in early and later years of medical school; and (b) factors associated with patient-centred attitudes. METHODS: We surveyed 673 students in the first, third, and fourth years of medical school. Our survey utilized the Patient-Practitioner Orientation Scale (PPOS), a validated instrument designed to measure individual preferences towards various aspects of the doctor-patient relationship. Total PPOS scores can range from patient-centred (egalitarian, whole person oriented) to disease- or doctor-centred (paternalistic, less attuned to psychosocial issues). Additional demographic data including gender, age, ethnicity, undergraduate coursework, family medical background and specialty choice were collected from the fourth year class. RESULTS: A total of 510 students (76%) completed data collection. Female gender (P < 0.001) and earlier year

of medical school (P = 0.03) were significantly associated with patient-centred attitudes. Among fourth year students (n = 89), characteristics associated with more patient-centred attitudes included female gender, European-American ethnicity, and primary-care career choice (P < 0.05 for each comparison). CONCLUSION: Despite emphasis on the need for curricula that foster patient-centred attitudes among medical students, our data suggest that students in later years of medical school have attitudes that are more doctor-centred or paternalistic compared to students in earlier years. Given the emphasis placed on patient satisfaction and patient-centred care in the current medical environment, our results warrant further research and dialogue to explore the dynamics in medical education that may foster or inhibit student attitudes toward patient-centred care.

Hall JA, Irish JT, Roter DL, Ehrlich CM, Miller LH. Satisfaction, gender, and communication in medical visits. Med Care. 1994a Dec;32(12):1216-31.

The authors conducted two studies of routine medical visits, investigating the relation of physician gender, patient gender, and physician age to patient satisfaction, and the correlations between communication behaviors and satisfaction separately for different combinations of patient and physician gender. Study 1 was based on videotaped visits to a hospital-based internal medicine practice (n = 97 visits). Study 2 was based on audiotaped visits to 11 different community and hospital-based practices in the United States and Canada (n = 524 visits). The ANOVA revealed that patients were more satisfied with male than female physicians. In both studies, patients examined by younger physicians, especially younger female physicians, reported lower ratings of satisfaction. These findings were true for male and female patients; however, in both studies, the lowest satisfaction in absolute terms was among male patients examined by younger female physicians. The effects were not explained by patient and physician background characteristics or by measured communication during the visit. Correlations between verbal and nonverbal communication and satisfaction for different combinations of physician and patient gender suggested that gender-related values and expectations influence patients' reactions to physicians' behavior. There also was evidence that patient satisfaction in reflected in the patients' affective behavior during the visit.

Hall JA, Irish JT, Roter DL, Ehrlich CM, Miller LH. Gender in medical encounters: an analysis of physician and patient communication in a primary care setting. Health Psychol. 1994b Sep;13(5):384-92.

The relation of physician and patient gender to verbal and nonverbal communication was examined in 100 routine medical visits. Female physicians conducted longer visits, made more positive statements, made more partnership statements, asked more questions, made more back-channel responses, and smiled and nodded more. Patients made more partnership statements and gave more medical information to female physicians. The combinations of female physician-female patient and female physician-male patient received special attention in planned contrasts. These combinations showed distinctive patterns of physician and patient behavior, especially in nonverbal communication. We discuss the relation of the results to gender differences in nonclinical settings, role strains in medical visits, and current trends in medical education.

Hall JA, Roter DL. Do patients talk differently to male and female physicians? A meta-analytic review. Patient Educ Couns. 2002;48:217-24.
A meta-analytic review was undertaken of seven observational studies which investigated the relation between physician gender and patient communication in medical visits. In five of the studies the physicians were in general practice, internal medicine, or family practice and were seeing general medical patients, and in two of the studies the physicians were in obstetrics-gynecology and were seeing women for obstetrical or gynecological care. Significant findings revealed that, overall, patients spoke more to female physicians than to male physicians, disclosed more biomedical and psychosocial information, and made more positive statements to female physicians. Patients also were rated as more assertive toward female physicians and tended to interrupt them more. Several results were weaker, or even reversed, in the two obstetrics-gynecology studies. Partnership statements were made significantly more often to female than male physicians in general medical visits but not in obstetrical-gynecological visits.

Henderson JT, Weisman CS. Physician gender effects on preventive screening and counseling: an analysis of male and female patients' health care experiences. Med Care. 2001 Dec;39(12):1281-92.
BACKGROUND: Studies have documented that patients of female physicians receive higher levels of preventive services. However, most studies include patients of only one gender, examine mainly gender-specific screening services, and do not examine patient education and counseling. OBJECTIVES: This study tests both physician- and patient-gender effects on screening and counseling services received in the past year and considers effects of gender-matched patient-physician pairs. RESEARCH DESIGN: Multivariate analyses are conducted to assess direct and interactive (physician x patient) gender effects and to control for important covariates. SUBJECTS: Data are from the 1998 Commonwealth Fund Survey of Women's Health, a nationally representative sample of U.S. adults. The analytic sample includes 1,661 men and 1,288 women ages 18 and over. MEASURES: Dependent variables are measures of patient-reported screening and counseling services received, including gender-specific and gender-nonspecific services and counseling on general health habits and sensitive topics. RESULTS: Female physician gender is associated with a greater likelihood of receiving preventive counseling for both male and female patients. For female patients, there is an increased likelihood of receiving more gender-specific screening (OR = 1.36, P <0.05) and counseling (OR = 1.40, P <0.05). These analyses provide no evidence that gender-matched physician-patient pairs provide an additional preventive care benefit beyond the main effect of female physician gender. CONCLUSIONS: Female physician gender influences the provision of both screening and counseling services. These influences may reflect physicians' practice and communication styles as well as patients' preferences and expectations.

Kreuter MW, Strecher VJ, Harris R, Kobrin SC, Skinner CS. Are patients of women physicians screened more aggressively? A prospective study of physician gender and screening. J Gen Intern Med. 1995 Mar;10(3):119-25.
OBJECTIVE: To determine the effects of physician gender on rates of Pap testing, mammography, and cholesterol testing when identifying and adjusting for demographic, psychosocial, and other patient variables known to influence screening rates. DESIGN: A prospective design with baseline and six-month follow-up assessments of patients' screening

status. SETTING: Twelve community-based group family practice medicine offices in North Carolina. PARTICIPANTS: 1,850 adult patients, aged 18-75 years (six-month response rate, 83%), each of whom identified one of 37 physicians as being his or her regular care provider. MAIN RESULTS: Where screening was indicated at baseline, the patients of the women physicians were 47% more likely to get a Pap test [odds ratio (OR) = 1.47, 95% confidence interval (CI) = 1.05, 2.04] and 56% more likely to get a cholesterol test (OR = 1.56, 95% CI = 1.08, 2.24) during the study period than were the patients of the men physicians. For mammography, the younger patients (aged 35-39 years) of the women physicians were screened at a much higher rate than were the younger patients of the men physicians (OR = 2.69, 95% CI = 0.98, 7.34); however, at older ages, the patients of the women and the men physicians had similar rates of screening. CONCLUSIONS: In general, the patients of the women physicians were screened at a higher rate than were the patients of the men physicians, even after adjusting for important patient variables. These findings were not limited to gender-specific screening activities (e.g., Pap testing), as in some previous studies. However, the patients of the women physicians were aggressively screened for breast cancer at the youngest ages, where there is little evidence of benefit from mammography. Larger studies are needed to determine whether this pattern of effects reflects a broader phenomenon in primary care.

Maheux B, Haley N, Rivard M, Gervais A. Do women physicians do more STD prevention than men? Quebec study of recently trained family physicians. Can Fam Physician. 1997 Jun;43:1089-95.

OBJECTIVES: To examine differences attributable to sex of family physicians in their practices and in their perceptions of sexual history taking and safer sex counseling, and to ascertain whether sex of physicians influences counseling about condoms. DESIGN: Cross-sectional survey. SETTING: Quebec family practices. PARTICIPANTS: Recently graduated (1991) Quebec family physicians: 54 men and 92 women. MAIN OUTCOME MEASURES: Frequency and content of sexual history, frequency of safer sex counseling, perceived level of comfort in taking a sexual history, perceived adequacy of medical training to take sexual histories, perceived difficulty with sexual history taking according to patients' characteristics, and perceived effectiveness of safer sex counseling. RESULTS: Response rate was 80% of 183 physicians contacted. There were few differences attributable to sex of physician in family physicians' practices and perceptions regarding sexual history taking. Men's perceptions regarding the difficulty of sexual history taking did not vary according to patient's sex, but most women reported more difficulty with male patients. Male physicians reported more difficulty with teenagers; female physicians experienced more difficulty questioning adults. More than 85% of male and female physicians reported recommending condom use to a patient in their practice at least weekly. Women physicians seemed to do more condom-related counseling than their male colleagues, even after controlling for other variables. Salaried practice in a local community health centre did not influence condom-related counseling. CONCLUSIONS: Women family physicians are more inclined than men to counsel patients about condom use. Increasing numbers of women in family practice could have a beneficial effect on prevention of STDs and undesired pregnancies.

Malterud K. Strategies for empowering women's voices in the medical culture. Health Care Women Int. 1993 Jul-Aug;14(4):365-73.
Power and knowledge are closely connected, and this is no less true for the medical profession than it is for any other sphere of life. Knowledge is constructed by voice. Unfortunately, women's voices are often silent in the factory where medical knowledge is produced. Medicalization and ignoring are symptoms of the medical oppression of women's voices. Empowerment of women's voices at various levels within the medical culture is essential for influence and social reconstruction. In this regard, a research project on alternative approaches to physician-patient communication as well as research methods is presented. Knowledge constructed from women's voices will be neglected by medical power unless it can hold up to systematic investigative procedures. Sensitive and sensible research from women's voices requires methodology that preserves women's messages and transforms them into medical knowledge. Such efforts may ultimately lead toward construction of a feminine medical epistemology--a medical knowledge that reflects women's reality.

Orzano AJ, Cody RP. Gender concordance between family practice residents and diagnoses in an ambulatory setting. Fam Med. 1995 Jul-Aug;27(7):440-3.
BACKGROUND: Female physicians are more likely than male physicians to treat female patients. This study extends the scope of previous studies by scrutinizing gender concordance with specific diagnoses. METHODS: A total of 90,407 physician-patient encounters handled by 90 family practice residents from 1984-1993 in an ambulatory care setting were analyzed. In addition to genitourinary problems, the analysis included the 20 most frequently recorded diagnoses. RESULTS: Patients' encounters with residents differed between male and female residents. Female residents handled more encounters ($P < .001$) for vaginitis, prenatal care, menstrual disorders, menopausal symptoms, cervicitis, abnormal Pap smear, breast disease, breast lump, and general medical exam (female patient). Female residents handled a greater percentage ($P < .001$) of female patients within the 20 most frequent diagnoses. There was little difference with male patients. CONCLUSIONS: Gender concordance is suggested between male and female patients with specific diagnoses and their physicians. Educators must balance patient preferences and satisfaction with adequate exposure to the gamut of medical problems.

Reid SA, Glasser M. Primary care physicians' recognition of and attitudes toward domestic violence. Acad Med. 1997 Jan;72(1):51-3.
PURPOSE: Physicians fail to identify the majority of domestic violence victims, even though they are often the first and only individuals to whom a victim may present. The present study was designed to assess primary care physicians' recognition of and attitudes toward domestic violence. METHOD: Of the 148 primary care physicians in three midwestern counties, all the women and a random sample of the men were included in the survey, for a total of 83. A seven-page questionnaire was developed that contained items about demographics and practice characteristics, and questions about the following aspects of domestic violence: knowledge, attitudes, importance, and prevalence in practice; attitudes toward responsibility; current practices and protocols used; level of education and domestic violence received; and opinions on how best to distribute information and/or education concerning domestic violence. The questionnaire was mailed in 1994. Follow-up was conducted through phone calls, remailings, and visits to the physicians' offices. Responses were examined using chi-square tests and two-

tailed t-tests. RESULTS: The response rate was 63% (52 of 83); 53% of those responding were family physicians and 47% were general internists; 34% were women. Although all of the physicians agreed that finding and treating domestic violence is important, less than half agreed that domestic violence was a significant problem in their patient populations. Almost 96% of the physicians believed that more should be done to educate physicians about domestic violence, and 94% agreed that domestic violence should be included in a doctor's professional medical training; yet nearly half said they would not participate in a domestic violence forum. Even though 41% noted that they had received some type of formal education about domestic violence, 57% felt that their medical education had inadequately prepared them to deal with domestic violence, and less than 25% reported that they had been trained to diagnose domestic violence. The family physicians and the female physicians had received more education about domestic violence and were more comfortable addressing domestic-violence situations. The older physicians were less comfortable addressing domestic violence and were less likely to agree that education about domestic violence should be a part of medical training. CONCLUSION: Interventions by the medical community to increase physician awareness of domestic violence and available treatment resources are necessary, and domestic-violence information should be included in formal medical curricula.

Rose K, Saunders DG. Nurses' and physicians' attitudes about women abuse: the effects of gender and professional role. Health Care Women Int. 1986;7(6):427-38.
The apathy encountered by battered women when they seek help from medical and other professionals has been attributed to patriarchal norms and victim-blaming. Because of their place in the medical hierarchy this study hypothesized that a) nurses would have more sympathetic attitudes toward battered women than physicians; and b) professional roles and not gender would explain the differences. The finding supported the first but not the second hypothesis. Nurses were less likely to believe that wife-beating is justified and that victims are responsible for the abuse. Women, regardless of profession, were more sympathetic than men. Nurses and physicians with the most liberal attitudes about women's roles were least likely to blame victims. Those with the most intensive training on the topic held victims less responsible and were more willing to help them.

Roter DL, Hall JA. Why physician gender matters in shaping the physician-patient relationship. J Women's Health. 1998;7;1093-97.
Societal values regarding the nature and consequences of patient autonomy and medical paternalism underscore the current debates surrounding informed consent and shared decision making. The debate is significant in that it both reflects and determines normative expectations for physician and patient conduct as well as the nature and form of the therapeutic relationship. Analysis of the literature describing communication differences between physicians of different genders indicates that female physicians show a greater affinity for collaborative models of patient-physician relationship than do their male colleagues. Female physicians spend more time with their patients, are more likely to engage their patients in discussions of their social and psychologic context, and deal more often with feelings and emotions. Moreover, female physicians facilitate partnership and patient participation in the medical exchange more effectively than do male physicians. The authors propose that the quality of the interactive process is critical to the establishment of a therapeutic relationship and that this process is related to

physician gender. They also suggest that physician gender matters in the shaping of the patient-physician relationship through this interactive process.

Roter D, Lipkin M Jr, Korsgaard A. Sex differences in patients' and physicians' communication during primary care medical visits. Med Care. 1991 Nov;29(11):1083-93.
This study reports on the analysis of audiotapes of 537 adult, chronic disease patients and their 127 physicians (101 men and 26 women) in a variety of primary care practice settings to explore differences attributable to the effects of the patient's and the physician's sex on the process of communication during medical visits. Compared to male physicians, women conducted longer medical visits (22.9 vs 20.3 minutes; F(1,515) = 7.9, P less than .005), with substantially more talk F(1,518) = 19.5, P less than .000. Differences were especially evident during the history segment of the visit when female physicians talked 40% more than male physicians (F(1,518) = 20.1, P less than .000) and when patients of female physicians talked 58% more than male physicians' patients (F(1,448) = 24.4, P less than .000). Compared to male physicians, female physicians engaged in more positive talk, partnership-building, question-asking, and information-giving. Similarly, when with female compared to male physicians, patients engaged in more positive talk, more partnership-building, question-asking, and information-giving related to both biomedical and psychosocial topics.

Roter DL, Hall JA. Physician gender and patient-centred communication: a critical review of empirical research. Annu Rev Public Health 2004;25:497-519.
Physician gender has stimulated a good deal of interest as a possible source of variation in the interpersonal aspects of medical practice, with speculation that female physicians are more patient-centered in their communication with patients. Our objective is to synthesize the results of two meta-analytic reviews the effects of physician gender on communication in medical visits within a communication framework that reflects patient-centeredness and the functions of the medical visit. We performed online database searches of English-language abstracts for the years 1967 to 2001 (MEDLINE, AIDSLINE, PsycINFO, and BIOETHICS), and a hand search was conducted of reprint files and the reference sections of review articles and other publications. Studies using a communication data source such as audiotape, videotape, or direct observation were identified through bibliographic and computerized searches. Medical visits with female physicians were, on average, two minutes (10%) longer than those of male physicians. During this time, female physicians engaged in significantly more communication that can be considered patient-centered. They engaged in more active partnership behaviors, positive talk, psychosocial counseling, psychosocial question asking, and emotionally focused talk. Moreover, the patients of female physicians spoke more overall, disclosed more biomedical and psychosocial information, and made more positive statements to their physicians than did the patients of male physicians. Obstetrics and gynecology may present a pattern different from that of primary care: Male physicians demonstrated higher levels of emotionally focused talk than their female colleagues. Female primary care physicians and their patients engaged in more communication that can be considered patient-centered and had longer visits than did their male colleagues. Limited studies exist outside of primary care, and gender-related practice patterns might differ in some subspecialties from those evident in primary care.

Scholle SH, Gardner W, Harman J, Madlon-Kay DJ, Pascoe J, Kelleher K. Physician gender and psychosocial care for children: attitudes, practice characteristics, identification, and treatment. Med Care. 2001 Jan;39(1):26-38.
OBJECTIVE: To examine differences by physician gender in the identification and treatment of childhood psychosocial problems. DESIGN: Survey of patients (n = 19,963) and physicians (n = 366) in primary care offices in 2 large, practice-based research networks. Multivariate regressions were used to control for patient, physician, and visit characteristics, with a correction for the clustered sample. SUBJECTS: Children ages 4 to 15 years seen consecutively for nonemergent care. MEASURES: Physician report of attitudes, training, practice factors, and identification and treatment of psychosocial problems. Parental report of demographics and behavioral symptoms. RESULTS: Compared with male physicians, female physicians were less likely to view care for psychosocial problems as burdensome. They were more likely to see children who were female, younger, black or Hispanic, in single-parent households, enrolled in public or managed health plans, and with physical health limitations. Children seen by male physicians had higher symptom counts. Male physicians were more likely to report having primary care responsibility for their patient and that parents agree with their care plan. Female physicians spent more time with patients. After controlling for these differences, female physicians did not differ from male physicians in identification or treatment of childhood psychosocial problems. CONCLUSIONS: Male and female physicians see different kinds of children for different visit purposes and have different kinds of relationships with their patients. After controlling for these factors, management of childhood psychosocial problems does not differ by physician gender. Improving management of psychosocial conditions depends on identifying modifiable factors that affect diagnosis and treatment; our work suggests that characteristics of the practice environment, physician-patient relationship, and patient self-selection deserve more research.

Woodward CA, Carroll JC, Ryan G, Reid AJ, Permaul-Woods JA, Arbitman S, Domb SB, Fallis B, Kilthei J. Maternity care and maternal serum screening. Do male and female family physicians care for women differently? Can Fam Physician. 1997 Jun;43:1078-84.
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 < or = 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.

Woodward CA, Hutchison BG, Abelson J, Norman G. Do female primary care physicians practise preventive care differently from their male colleagues? Can Fam Physician. 1996 Dec;42:2370-9.
OBJECTIVE: To assess whether female primary care physicians' reported coverage of patients eligible for certain preventive care strategies differs from male physicians' reported coverage. DESIGN: A mailed survey. SETTING: Primary care practices in southern Ontario. PARTICIPANTS: All primary care physicians who graduated between 1972 and 1988 and practised in a defined geographic area of Ontario were selected from the Canadian Medical Association's physician resource database. Response rate was 50%. MAIN OUTCOME MEASURES: Answers to questions on sociodemographic and practice characteristics, attitudes toward preventive care, and perceptions about preventive care behaviour and practices. RESULTS: In general, reported coverage for Canadian Task Force on the Periodic Health Examination's (CTFPHE) A and B class recommendations was low. However, more female than male physicians reported high coverage of women patients for female-specific preventive care measures (i.e., Pap smears, breast examinations, and mammography) and for blood pressure measurement. Female physicians appeared to question more patients about a greater number of health risks. Often, sex of physician was the most salient factor affecting whether preventive care services thought effective by the CTFPHE were offered. However, when evidence for effectiveness of preventive services was equivocal or lacking, male and female physicians reported similar levels of coverage. CONCLUSION: Female primary care physicians are more likely than their male colleagues to report that their patients eligible for preventive health measures as recommended by the CTFPHE take advantage of these measures.

Woodward CA, Hurley J. Comparison of activity level and service intensity of male and female physicians in five fields of medicine in Ontario. CMAJ. 1995 Oct 15;153(8):1097-106.
OBJECTIVE: To examine the extent to which physician's sex explains variation in the activity level and service intensity of a cohort of physicians in each of five medical fields after other sources of variation are taken into account. DESIGN: Data from the Ontario Ministry of Health (MOH) and the CMA were analysed by means of multivariate regression techniques for panel data. SETTING: Ontario. PARTICIPANTS: A total of 137 dermatologists, 974 general internists, 330 pediatricians and 941 psychiatrists and a random sample of 2771 family physicians and general practitioners who met the eligibility criteria. Physicians were eligible if they billed the MOH for at least three quarters in 1983, did not bill as a medical laboratory director, provided direct patient care, did not have an alternative funding arrangement with the MOH, remained in the same specialty throughout the study period (1983-90) and billed from an Ontario address. OUTCOME MEASURES: Three measures of total activity level (annual number of services provided, annual fee-for-service billings and annual mean number of patients seen per quarter) and one measure of service intensity (annual mean number of services per patient per quarter). RESULTS: Although several variables (e.g., full-time work status, age, type of practice and recent practice move) influenced the four measures examined, physician's sex contributed significantly to explaining variation in activity in 70% of the regression equations. The women provided 33.0% fewere services per year than the men in family and general practice ($p < 0.001$), 25.0% fewer

services in general internal medicine ($p < 0.01$), 22.1% fewer services in pediatrics ($p < 0.05$) and 22.3% fewer services in psychiatry ($p < 0.001$). Total billings by the women in these fields were also significantly less than those of their male colleagues, the difference being greatest among the family physicians and general practitioners (28.0%) and the general internists (27.0%) ($p < 0.001$). The women in these four fields saw significantly fewer patients per quarter than their male colleagues, the difference being greatest in psychiatry (33.0%) ($p < 0.001$). Sex affected service intensity in three fields. The female psychiatrists (14.8%) ($p < 0.001$) and general intenists (5.5%) ($p < 0.10$) provided more services per quarter than their male colleagues, whereas the female family physicians and general practitioners delivered 2.2% fewer services per patient per quarter than their male colleagues ($p < 0.01$). In two specialties differences between women aged 40 years or less and those over 40 years were observed. In general internal medicine the younger women had higher activity levels than the older women ($p < 0.01$). Conversely, in dermatology the younger women had lower activity levels ($p < 0.05$) and provided fewer services per patient per quarter ($p < 0.001$) than the older women. CONCLUSIONS: Although physician's sex explained much of the variation in activity level and service intensity, even after other important correlates were controlled for, the type and extent of differences observed between female and male physicians depended on the particular medical field examined. To understand the effect of the large increase in the number of women on the physician workforce, more detailed analyses by medical field are needed of the volume, mix and intensity of services provided by men and women, with adjustment for any possible differences in the patients seen in their practices.