Again, the need to be continuously available is a consideration not just for physicians, but in many other professions as well. Epstein et al. found that clients "stigmatize part-time lawyers by avoiding or refusing to work with them. Some attorneys reported that clients wanted to know why they have to work with someone who could be gone tomorrow" (Epstein et al. 1998: 32). Epstein's respondents reported being told that they needed to be available to take calls from clients on their day off.

A related problem that plagues many professionals seeking reduced schedules involves periods of high work load. As this MomMD post indicates, there is an expectation that part-time physicians will contribute additional time during periods of unanticipated high patient demand:

> I currently work part-time 2 days per week in a private pediatric office. My 2 days have been set for some time now, and I've therefore arranged my childcare around my schedule (don't have childcare on my off days). On multiple occasions over the past couple of years, my office mgr. has approached me to see if I could work "extra" days during busy winter months...I have firmly explained that I don't have childcare on those days, and that it would be impossible for me to add "extra" days... Now my office manager has approached me again to see if I could add a third day because the other docs are feeling so "slammed" this winter. I am very frustrated. I told her, once again, that I am unable to do this, and reviewed the reasons why. I might also mention that my contract specifies my days and hours. I wouldn't give it another thought, but I know that my office mgr's requests are coming from the other docs in the office, and it creates an aura that feels like I'm not "pulling my weight." I already feel this way, being the only part-time doc in the office. Does anyone have any suggestions for how to prevent these requests from continuing? 12-12-2006 kiddoc.

The immediate response to this part-time worker was a less than supportive MomMD post:

> While I can certainly understand where you are coming from, I can understand the other docs position as well. During the busy times of the year, everyone ends up working harder. For full time docs, that means staying later, working longer hours, and never having a day off. In the offices that I know the docs do not take vacation during holiday seasons and even if someone is usually off one day a week, they will often come in on that day to help out during the busiest weeks. There are a certain number of patients who need to be seen and the work just has to get done. During the busy seasons I often get out an hour or two later than usual and many docs I know will add extra evening hours.

The bottom line is that the part-time physician feels that since her hours are clearly stated in her contract she should not have to work late. The respondent suggests that although full-time is also clearly delineated, the expectation is that full-time physicians will work overtime to satisfy the need since they are professionals; so she reasons that a similar expectation should be placed on part-time professional workers. While this interaction may seem uniquely medical, we suggest that deadlines are common to many professional settings. A parallel situation inevitably exists, for example, for part-time accountants during tax season.

A final practice-related consideration concerns whether physicians working part-time can provide optimal care. The issues in this area differ for primary care and specialist physicians. Because primary care is often defined as continuous, coordinated, and comprehensive care (Gelb-Safran, 2003), some have inferred that continuous physician availability is important and that a traditional, full-time work schedule is optimal for patient care (Parkerton et al. 2003).

Although the reasoning seems sound, recent research calls the continuity-quality theory into question. For example, one study on part-time primary care physicians suggests that rather than demonstrating lower performance, primary care physicians working fewer clinical hours were associated with both slightly higher cancer screening rates and better diabetic management, and with patient satisfaction and ambulatory costs similar to those of full-time physicians (Parkerton et al. 2003).[16] Another study finds that although physicians working 65 h or more a week provided higher

[16]Research also suggests that part-time primary care physicians in an academic environment are more productive than their full-time counterparts. Most of these clinicians work full-time but limit their clinical responsibilities to attend to teaching and research (Warde 2001).

continuity of care, they also had significantly lower professional satisfaction, which ultimately may compromise their capacity to offer quality health care services (Muray et al. 2000).[17] In other words, while the patient continuity–physician work effort relationship is not debatable, the patient continuity-health care quality association is.

In light of the relationship between continuity and patient satisfaction, how can we explain the comparable satisfaction ratings of part- and full-time primary care physicians discussed earlier? One possibility is that the patients of part-time physicians tolerate the lack of continuity because they believe the higher quality of care provided by these physicians is worth the wait. This explanation jives well with the research that suggests that part-time physicians provide higher quality care, and suggests that although part-time medical work presents unique difficulties they are not insurmountable.

The issue for specialists has to do with the idea that "practice makes perfect." Thus, in some procedural areas, there is an association between case volume or surgical experience and patient outcomes for a variety of procedures (Gordon et al. 1999; Migliore et al. 2007; Dimick et al. 2003; Díaz-Montes et al. 2006; Hammond et al. 2003). In spite of this research, the leap between the volume-quality association and resistance to part-time surgical work may not follow as perfectly as it seems. At the very least, part-time workers could avoid the problem by limiting the range of procedures that they perform so that they can accrue sufficient volume. In fact, academic surgeons routinely specialize in this manner.

Further, while the research documenting a volume-outcome association is consistent and accepted, until recently, it has been limited in scope. Little effort has been made to follow surgeons over the course of their careers and to assess how total experience rather than annual volume relates to outcomes. One study on radical prostatectomy suggests that total experience plays a major role in outcomes. In particular, 5-year progression-free probabilities revealed a lifetime learning curve for the first 250-500 radical prostatectomies. This was true even after adjusting for positive surgical margins. The probability of recurrence decreased from 21% in the first ten cases to 12% after 250 prior cases. For every 11 men treated by an inexperienced urologist, one will relapse compared to those treated by an experienced surgeon (Vickers et al. 2007). If lifetime experience is a better proxy for skill then annual volume and the decisions to funnel patients to high volume surgeons should be rethought. Under such conditions, barriers to part-time surgical work might relax somewhat.

Further, research suggests that although high volume surgeons have better outcomes than low volume surgeons, there is significant variation in outcomes among the high volume population. These results suggest that volume may not entirely explain surgical outcomes. In fact, it is now thought that volume differences only proxy skill differences[18] and that a better approach to quality enhancement for surgical patients involves continuing education for surgeons, certification by procedure, and more frequent evaluation of health outcomes. Such improvements in outcomes research and surgical quality maintenance would inevitably enhance opportunities for part-time work among truly qualified surgeons.

[17]Research on the relationship between continuity of care and health outcomes for diabetes patients is mixed. Some studies fail to find an association (Guilliford et al. 2007), while others suggest an association exists.

[18]For example, evidence is mounting that surgeons can extend the survival of cancer patients by ensuring negative margins on their resections (Lange and Lin 2004). The theory is that the positive relationship between higher volume and outcomes for cancer surgery patients stems from the fact that surgeons who perform the case more often are more likely to ensure negative margins.

Residents and the 80-h-Per-Week Rule

One major step toward making medical training more family friendly has been the introduction of the 80-h rule for residents. As we will see, this development had less to do with women's entry into the profession and more to do with concerns about patient safety. Nevertheless, research suggests that residents of both genders are taking advantage of the 80 h work rule as much as they can (Jones and Jones 2007).

Until 2003, there was no official maximum on the number of hours per week that residents could spend in the hospital setting. Historically, residency training has been especially rigorous, with 70 h of work per week required in even the most lenient specialties. Before these regulations, most surgical residents worked a 36-h shift every third night, and routinely put in 12-h days on their "nights off." Residents always worked Saturday mornings. They often worked all day on Saturday and routinely spent at least one Sunday a month in the hospital. Residents in other fields normally had somewhat less demanding schedules that involved 36-h shifts every fourth night and less time on Saturday mornings, but routinely involved 12-h days.

The 80-h work rule was adopted primarily because of public concern about patient safety rather than about issues surrounding resident well-being (Woodrow et al. 2006).

Although the American Medical Student Association and the Council of Interns and Residents actively advocated for resident work hour restrictions, the well-being of residents of either gender was far from the major focus of the debates leading up to the adoption of work hour limits for US resident physicians. Indeed, the status of physician parents was hardly mentioned in these discussions. The initial public recognition of resident overwork came after Libby Zion died in 1984 as a result of the inadequate care provided by overworked and undersupervised medical residents. Her father, a writer for the *New York Times* worked to bring the issue to public attention. (Kwan and Levy 2006)

The Libby Zion case led the New York State Department of Health to convene a committee to review the state's residency training system. The committee recommended a series of reforms that were adopted by New York State in 1989. The regulations, often referred to as the Bell Code, stated that residents not work more than 24 consecutive hours and no more than 80 h a week, among a number of other provisions designed to enhance patient safety. While the Bell Code represented a milestone with respect to the regulation of residency training programs, these regulations were not uniformly implemented. Penalties for violations were limited and oversight was nearly nonexistent. So, many hospitals simply ignored the regulations.

A 1998 review conducted by the New York State Department of Health found that 60% of surgical residents worked more than 95 h per week (Kwan and Levy 2006). The investigation found violations at every single hospital it reviewed. As a result of this review, the state dramatically increased financial penalties for work code violations and hired an independent firm to monitor its hospitals.

As New York began to ratchet up its controls on resident work hours, national attention was drawn to the issue. In November of 1999, the Institute of Medicine released its report, *To Err is Human,* which suggested that medical errors result in 98,000 patient deaths and countless injuries every year. On the other hand, although the report focused public attention on patient safety, it had relatively little to say about residents work effort (Steinbrook 2002).

In April of 2001, the American Medical Student Association, the Committee on Interns and Residents and the nonprofit organization Public Citizen filed a petition with the Occupational Safety and Health Administration (OSHA) requesting that they restrict resident work hours to 80 h a week. The petitioners' main justification for their request involved the hazards sustained by student physicians. In November of 2001, Representative John Coyers (D-MI) introduced the Patient and Physician Safety and Protection Act of 2001 limiting resident work hours. However, the OSHA petition was denied and the federal legislation did not pass. Instead, the American Council on Graduate Medical

Education (ACGME) adopted its own regulations in July of 2003. But unlike the OSHA petition, the major impetus behind federal legislation involved efforts to improve patient care.

While the 2003 ACGME restrictions on resident work hours promise to limit the work effort of residents in the most challenging specialties, residency programs remain far from family friendly. Residents who become parents and seek to be meaningfully engaged in their children's lives will continue to face serious challenges. Even if the reforms are implemented accurately, and evidence suggests that they are still defied frequently (Landrigan et al. 2006), residents still must work 80 h a week and endure 24 straight hours of work periodically. Further, the regulations leave room for manipulation. In particular, at-home call is not subject to the same limitations as in-house call. Official regulations state that at-home call must not be "so frequent as to preclude reasonable rest and personal time." While the intent of the legislation is clear, there is ample room for abuse and interpretation. And research suggests that call duties vary significantly by specialty. One study found that residents in general surgery took call once every 6.9 min while residents in geriatric and general medicine took call once every 5 h (Chiu et al. 2006).

Further, as we noted earlier, changes in the technical content of American medicine are changing the nature of medical education. In particular, technological advances in medicine have increased the average morbidity of patients at all levels of care. Simply put, faced with more severe patient acuity, residents who are on-call at night have more to do, more procedures to complete, more tests to order, and more information to evaluate than was the case a generation ago. Residency programs remain very demanding temporally, physically, and mentally.

Residency programs are not only taxing but they can conflict with the peak period of family demands. Many, and perhaps most, female residents who become mothers do so during their residency training programs. Potee et al. (1999), who surveyed women who graduated from Yale University Medical School between 1922 and 1999, found that the overwhelming majority of these elite female physicians became mothers or intended to become mothers. The rate of having a first child during medical training was increasing for this group. Other studies confirm that more than one half of female physicians have their first child during residency (Seltzer 1999).

Accompanying the growing trend of child bearing during residency is increasing evidence of problem pregnancies for female physicians. Multiple studies show that pregnant residents endure higher rates of preterm labor, restricted fetal growth and preeclampsia than women of comparable age and socioeconomic status (Klebanoff et al. 1990; Gabbe et al. 2003).

Inadequate maternity leaves postbirth compound these problems. In separate studies of family practice and obstetrics – gynecology residents, the average length of maternity leave was between 4 and 8 weeks, derived from multiple sources including vacation, sick leave, and home-based electives. In other words, although residents took time off after child birth, most did not have a real maternity leave (Gjerdingen et al. 1995; Gabbe et al. 2003). And it is worth emphasizing that residents who returned to work so quickly usually did not do so in stages. Between 4 and 8 weeks after delivery, these women had the full responsibilities of a resident. So it is not surprising that many of them had difficulty arranging child care, guilt about being absent from their children, and difficulty continuing breast-feeding (Gjerdingen et al. 1995). In fact, recent research indicates that although many initiate breast-feeding, residents are often unable to continue because of their work schedules.[19]

Readers unacquainted with the specifics of medical training might find the results of these studies surprising, especially in light of the 1993 Family and Medical Leave Act. This Federal law requires that employees of firms with greater than 100 workers who have at least 1 year of firm specific experience be given at least 12 weeks of unpaid maternity leave. Since most residents do

[19]Healthy People goals suggest that 50% of mothers of 6-month olds should be breast-feeding. The rate for residents was only 15%. Residency work schedule was the most common reason cited for discontinuing breast-feeding (Miller et al. 1996).

not become pregnant during their first year and since most hospitals have at least 100 employees, residents should be eligible for 12 weeks of time that does not count against their vacation or sick leave. Yet, it appears that residents are not availing themselves of this opportunity.

This occurs, in part, because the status of residents is unclear, (residents are considered both employees and students). Their eligibility for maternity leave under the Family and Medical Leave Act is debatable. In other words, if residents are considered students, they are not eligible under FMLA. Only if residents are considered workers rather than students would they be eligible for FMLA coverage.

Second, although the number of teaching hospitals with established maternity leaves is increasing, (Surveys by the Council of Teaching Hospitals confirm this trend.), female residents know that much of the time they take after or before childbirth will have to be made up before they can graduate. They *also know* that other residents usually have to shoulder the additional work load whenever a resident takes any form of leave. Although practices may now be changing as a result of work hour restrictions, historically, replacement workers are almost never used to cope with resident absences. Third, because of their initially low salaries and high debts, residents are often not in a financial position to take unpaid maternity leave.

The obstacles are often logistical and financial. The structure of residency programs makes it logistically very difficult to incorporate women or men who wish to make up their leave time, especially if these individuals need to receive compensation during their make up period. Medicare pays hospitals for the residents they train and makes no allowance for temporary staff, so residents making up time and receiving pay are occupying the full-time slot of one of the potential next generation of residents. Needless to say, residency directors do not want to give up a training slot so that one student can work a few additional months.

Given these results, the availability of true flexibility for pregnant or nursing medical residents remains extremely low. Systematic research on residents in pediatrics revealed that only 43 of the 6609 pediatrics residents in 2003 completed all or some of their training on a part-time basis (Holmes et al. 2005). Data from the American Academy of Family Practice Website on family practice residency programs in the 2005–2006 training year indicate that of the 459 listed residency programs, only 45 of the 459 programs provide part-time or shared residency programs. If these opportunities are rare in family practice residencies, they are even less likely to exist in traditionally male residency programs such as surgery.

There is also some evidence that the female family practice residents are selecting those programs which offer family-friendly supports. We calculated the percent of residents in each program who were women in the 2003–2004 through 2005–2006 years. We then compared this 3-year average for the programs with part-time options to the programs without such flexible work schedules. In fact, programs with part-time schedules averaged 56% female, while programs without part-time options averaged 50% female. This evidence suggests that residency programs with part-time opportunities are more attractive to female residents.

The difference is less pronounced for on-site child care. Programs with this option were, on average, 52% female, while programs without this option were only 50% female. On the other hand, the existence of an on-site child care program does not ensure that resident parents can meet their child care needs since waiting lists often exist for these services and since they are often not available before or after standard business hours when residents are often working. As the number of female residents expands, these issues will become salient ones to larger and larger numbers of newly minted MDs.

Critics of the 80-h workweek might suggest that the solution to the resident mother problem is simple. Women in medicine, and perhaps other elite women, should simply wait until they have completed their training. Yet, many have suggested that graduate school is the ideal time to have children because work demands only increase after physicians enter practice. This is especially true for physicians entering research or management careers.

The Development of the 80 h Work Rules

Although an 80h maximum work rule offers some relief to physicians in training, the Bell Code and AGCME national rules that followed were not designed to make medicine more family friendly. As suggested earlier, the principal impetus instead was patient safety. The residency training period remains a physically demanding period, especially for physicians who are pregnant or nursing. Organizational and cultural barriers continue to inhibit the adoption of work structures that are truly conducive to a meaning work and family balance. It is not surprising that institutions have not acknowledged the need for paternal involvement in the lives of residents' children. There is little evidence that residents themselves consider such issues. One newly hired attending reflects on surgical residents' reactions to work hour regulations:

> You might expect that, as residents, we'd stand up and rejoice that these regulations have been passed. But I'll tell you, if you're the chief resident on the GI service and a case comes up that you may have one or two opportunities to do during your entire residency – well, many of us have to be dragged kicking and screaming out of the hospital (Gilbert and Miller 2004).

Although residents acknowledge that their lives are less stressed physically as a result of the regulations (Myers et al. 2006), many residents are critical of the regulations because the new policy can prevent them from gaining valuable experience and can prevent them from knowing their patients adequately (Cohen-Gadol et al. 2005).

The debate continues to center around whether 80 h is enough time to expose residents to the range of cases necessary to give them a thorough training and whether such regulations ultimately improve patient outcomes. Research on the effect of the new policy on residents' experiences is mixed. One recent study of internal medicine programs found that although hours allotted to inpatient clinical activity did not change, resident attendance at morning conference, a key didactic aspect of residents' training, declined. Further, residents' clinical elective time was reduced (Horwitz et al. 2006). Similarly, some studies suggest that operative experience did not change after work regulations were adopted (de Virgilio et al. 2006), and others suggest a different reality (Jarman et al. 2004). Still others suggest that the effect of regulations depends on the stage of the resident, with the fifth year residents getting sufficient operative experience (Ferguson et al. 2005). There is also a sense that the quality of medical students' experiences may be harmed by resident work restrictions (White et al. 2006). Further, studies of how the new policy influences patient outcomes have also yielded unclear results (Fletcher et al. 2004).

Thus, it appears that although the reforms were ultimately implemented, general resident well-being has not been prioritized in the health-care system and the well-being of resident parents is almost completely outside the purview of the public. Research indicates that resident well-being has improved since the implementation of work regulations, but there is no reason to believe that the success of these reforms stemmed from the residents themselves. On the other hand, the association between part-time residencies and the representation of women in family practice programs suggests that over time the collective power of women's individual choices might cause change in the profession. The change will be gradual, but it should ultimately occur because women's presence will ultimately be too significant. So, there is little reason to suspect that residents will actively promote more effective work–family balance, but perhaps the mere presence of women will result in small change.

In 2008, the Institute of Medicine released a report, "Resident Duty Hours: Enhancing Sleep, Supervision and Safety" that recommended revising the current regulations. In particular, it suggested providing 1 day off per week to residents, reducing the maximum number of hours a resident can work without rest and restricting the number of consecutive night float (graveyard) shifts to which residents are assigned. The current maximum shift length would be changed from 30 to 30 h with an uninterrupted 5-h break for sleep or a maximum of 16 h without a protected break (AMSA 2008).

While the American Medical Student Association officially supports the IOM recommendations (AMSA 2008), many individual medical students have expressed concern about how these revised regulations might effect their graduate medical education. One resident with whom we spoke suggested that the current regulations would either compromise the quality of her training or force her to extend her training for at least another year. As a result of her tremendous debt burden, she was not excited about the possibility of extending her training.

Further, many other medical organizations, like the American Association of Neurological Surgeons, have expressed concern about the IOM recommendations, suggesting that they will significantly harm patients and increase health care costs. For neurosurgeons concerns centered on the possibility that duty hours would increase mistakes related to patient handoffs and that work restrictions would limit the amount of experiences that residents receive (Jeffrey 2008).

Finally, there is concern if current reforms take effect without adequate oversight and funding, the burden of excessive work and accompanying fatigue may simply be shifted from residents to other providers. This sense was expressed in writing by the Committee on Bioethics of the American Academy of Pediatrics who issued comments on a draft version of the IOM report:

> ...there is a real danger in isolating resident hours from the rest of the system. It is doubtful that there will be additional resources available to the system to hire additional providers and there is no question that older physicians (i.e., attendings) are for the most part being asked to absorb the consequences of duty hour changes. The data are pretty clear that sleep deprivation and long hours are tolerated much less well by older individuals than by younger ones, so that shift can hardly be justified on the basis of patient safety (Tayloe 2009).

One attending physician suggested that the resident work regulations have effectively postponed the period in a physician's life when he or she must work extended hours. He suggested that because of work hour regulations, new attending physicians are being forced to handle middle of the night problems that used to be addressed by residents. Whereas the old system put the bulk of the burden on individuals in their twenties, the new system is forcing attending physicians who are older and thus even less capable of working all night to perform without sleep. Thus, ultimately, women and men in medicine may find that the work hour regulations only postpone the period of unreasonable hardship. Ultimately, middle of the night work is not conducive to family life at any point.

One hospitalist attending expressed a parallel concern. She recalled seeing several residents in the call room one evening who were ineligible to work because of current regulations, and a crowded emergency department being serviced by two physicians assistants. She suggested that health care quality would suffer without appropriate oversight of the extenders, who are hired to cover resident shifts.

Unlike previous reports, the current report dedicates an entire chapter to understanding how resident work schedules affect resident well-being.[20] On the one hand, the Institute's willingness to acknowledge residents' well-being reflects a dramatic change from prior publications on medical errors that focused primarily on health care quality. On the other hand, the discussion continues to be posed in terms of societal needs. According to the report, residents need sleep primarily so they can interact constructively with colleagues and patients. Ultimately, the attempt to understand the interface between work and well-being is woefully incomplete. This chapter considers how extreme work affects residents' physical and mental health as well as their capacity to relate to colleagues and patients, but it does not address work and family conflicts or consider how extreme work affects residents' personal relationships.

[20]The IOM describes research that suggests that extreme work schedules increase residents' risks of occupational injury through percutaneous needle sticks. It suggests that residents who endure long workdays are at significantly higher risks of traffic accidents, because they routinely drive in very fatigued states and it reviews research which indicates that extreme workweeks and limited sleep put resident physicians at risk for weight gain, depression, burnout, and other negative factors. The report even suggests that long workdays jeopardize resident physicians' professional relationships with other health care providers.

The Advent of "Convenient Care"

As restrictions in the resident work hour laws promise to make medical training more family friendly, the development of "convenient care" will increase opportunities for flexible work arrangements for primary care physicians. Convenient care clinics are health care facilities located in high-traffic retail outlets with pharmacies adjacent that provide affordable and accessible, episodic care to consumers who otherwise would have to wait for appointments with a traditional Primary Care Physician or Provider (PCP). Customers at these clinics are charged a flat rate of around $50.00 rather than a standard physician fee which is often over $100. Often, these clinics are staffed with physician extenders such as physicians' assistants and nurse practitioners rather than physicians. However, most clinics have a "collaborating" physician associated with them who oversees the work of the extenders. The exact hours of collaborating physicians vary, but many work only 12 h per week. According to staff we interviewed at flexdoc.com, an agency that recruits physicians for several convenient care organizations, the exact role of the collaborating physician varies in accordance with state-specific regulations, but many collaborating physicians can perform duties via teleconferencing. That is, they can work from home. While collaborating physicians have flexibility, they sacrifice a great deal in terms of benefits. Often, they are employed for an hourly wage rather than a salary.

Like the advent of resident work regulations, convenient care clinics were not developed with the needs of physicians in mind. Instead, companies like Walmart and Walgreens saw opportunities to make a profit and to capitalize on the convenience of their pharmacies. As we will show in section "Inflexibility in the Lives of Individual Male and Female Physicians", many physicians will be unable to consider working as collaborating physicians because of financial pressures. Staff at flexdoc.com emphasized that women are not the only ones taking these positions and that several are maintained by physicians who need extra work in order to make ends meet.

Inflexibility in the Lives of Individual Male and Female Physicians

In light of the significant limitations on family-friendly reforms in the profession, we consider how individual male and female physicians and physician organizations are coping. As we have discussed, since part-time work is available for only a select few, and since the percent of male physicians with full-time spouses is declining, physicians must consider alternative methods of work–family balance.

Those who attempted to balance work and family during the late 1970s and early 1980s did so largely on their own and inevitably endured extremely high levels of stress. Bonita Stanton reflects on her experiences as a young physician mother in 1978. She returned to work just weeks after her first daughter was born, including taking on-call responsibility every fourth night.

> My first night back on call was simply a disaster; I could not get back to my call room to nurse my hungry daughter. Patients kept arriving to be admitted and those already hospitalized demanded attention. As I hustled about, a cadre of students anxious for teaching were left as hungry as my child. Meanwhile, holed up in my hospital call room, my husband paged me repeatedly, eventually putting the phone next to our crying infant to emphasize the point that she was hungry. By the time I got to my room, my daughter was too overwrought to nurse. By the early light of day when a moment of quiet finally arrived, I was stunned with disappointment in the complete failure of my first foray into combining my roles as parent, physician, spouse, and teacher – and overwhelmed with the loneliness of the position in which I found myself. This was not how I had expected young motherhood to feel (Stanton 2007).

While this episode may well represent an extreme case, the obstacles to successful nursing as a physician remain very real. Statistics suggest that many resident (and attending) physician mothers

react to them by weaning children earlier than other highly educated women rather than by delaying their children's feeding (Duke et al. 2007). Ultimately, the failure to provide residents with nursing opportunities reflects a severe hypocrisy in medicine since physicians are currently recommending that mothers breast-feed for the first year of their children's lives.

In addition to enduring severe physical stress, physician mothers of the 1970s and early 1980s had to endure social isolation. They lacked support from a broader community of working professional women. Gail Jacoby, who graduated from Jefferson in 1972, had her first child during the third year of residency. She worked until the day her daughter was born and returned 5 weeks later. A month before she and her husband finished their residencies they moved into a house. Gail comments that she was the only full-time working mother of an infant in the neighborhood. Similarly, Lori DePersia, a 1981 graduate, reflects on her efforts to balance work and family in a recent edition of the Jefferson Medical College alumni bulletin:

> What was the climate like for working mothers at that time? Most of the working moms had jobs to make ends meet. Being a new mom and working was frowned upon by much of society... Most of the other mothers at the schools did not work. It is different now, but back then most professional women took a few years off or went super part-time (one weekend a month or less) until their children were older (20–21).

Inevitably, women physicians of this era not only had to endure the grueling hours associated with medical work and the inevitable guilt associated with leaving young children, but they also had to endure the condemnation of their community.

Over time, it seems reasonable to expect that conditions would have improved for mothers in medicine. In some respects they have. Medical mothers not only encounter other physician mothers in the workplace, they are also more likely to encounter professional mothers in their neighborhoods because more women work. So, the sense of isolation that the early generation experienced inevitably has lessened.

Further, in some specialties, opportunities to pursue reduced schedules have increased so that women in those fields now encounter relatively more family-friendly work opportunities than professional women overall. Laura Weinstein, a 1994 graduate of Jefferson, comments that she went part-time after her youngest child turned three. She says that she reduced her hours so she could spend more time with her children now that "they're interactive humans." Another woman we interviewed, a 1994 graduate of Harvard medical school, dropped out of the labor force when her second child was born and then ultimately returned to work 15 h a week as the medical director of a public clinic.

Yet, as we suggested earlier, it would be premature to suggest that women entering the medical workforce today encounter a truly family-friendly environment. In many ways, the challenges that women physicians confront as they struggle to balance work and family closely parallel those experienced by all working mothers in two career families. For example, as we noted earlier, physicians struggle to continue breast-feeding after returning to work. One physician mother comments on her efforts to breast-feed in the late 1990s:

> When I breastfed in the late 90's, I worked in a small medical research institute. I am a physician. When I asked if there might be a private area where I may pump milk, I seemed to be looked at as if I had two heads. I was told no one there had ever pumped breast milk before, and though they did find me a nice quiet area, I felt as if I was causing a great disruption. Mind you, this is a medical research institute filled with pediatricians and internal medicine physicians. Even in such a place, at least as recently as a half-dozen years ago, breast-feeding was an anomaly (Kantor 2006).

Another woman commented on the lack of breast-feeding space in a recently built Harvard Medical School building:

> I'm at Harvard Medical School working in one of the newest and most spacious buildings on the campus, The New Research Building. Given that many of the young scientists and physicians and support staff are beginning families, you might think this building would include a room for breast-pumping. But in our new multi-million dollar beautiful building our "pump room" is simply a bathroom stall. This is just one of several ways in which Harvard remains hostile to women (Kantor 2006).

While these comments seem surprising, they are inevitably endured by many working women with infants. In this way, medicine is not unique. Only a third of large companies provide a private, secure area where women can express breast milk during the workday, and only 7% offer on-site or near-site child care, according to a 2005 national study of employers by the nonprofit Families and Work Institute (Kantor 2006)." Thus, for many women breast-feeding on the job involves breaking new ground.

Women in medicine, like other working women, endure criticism for pursuing paid work outside the home. One participant in the MomMD Website shared her surprise when she received this type of judgment from another physician:

> I recently had a strange email interaction with another mommy physician, and I am wondering if I will be in for more of it as I transition to my "first job". I belong to a local mother of twins group and we have an email group. One of the other moms noticed I was a physician, so she emailed, "Oh, how nice, another mommy who is a physician" type of email. I thought I had made a new friend. I replied to her and asked her if she had any tips on balancing career and family, and she replied, "I only moonlight occasionally on the weekend. I find that my twins' mental health is more important than fulfilling my own selfish goals of having a career." posted June 25, 2007 12:50 PM by Tsunami

Another MomMD participant complains about missing her children during the day when they are most energetic and positive, only to interact with them later on when they are tired and cranky:

> I always felt guilty and disappointed about this, that I couldn't be with the kids when they were their brightest. Be glad you are part-time so can enjoy them on your other days. I think it's very real – that we are tired and that our young children are tired by 5:30, and that we need more flexibility in the workplace to help us with our exhaustion (posted August 20, 2007 by sisriver).

Like other women with demanding careers, many women physicians cope with the demands of parenting and work by neglecting household duties. This can incur the judgment and disapproval of others and inevitably raises the stress of those struggling to balance. One woman described her domestic challenges in a post to the MomMD Website:

> We get nasty notes in our mailbox about our yard not being mowed and some of my kids' friends parents have stopped allowing their children to come to our house and play because our house is very lived-in and NEVER up to their standards. The only way to do it all is to give up doing some of it (the things that are least important) (posted August 11, 2006 by OBRN2MD).

Research on women physicians indicates that they spend almost no time gardening or doing yard work. This compares with 3 h per week for women overall (Robinson and Godbey 1997).

Like other women in the workforce, physician mothers struggle to focus their limited energy on bonding with their children. One participant in the MomMD Website commented on her experiences;

> It is MOST frustrating to get home "early" then spend time with unhappy kids/feeling guilty/exhausted. I agree with change of dinner plans if possible – kids will be much better off with cereal for dinner and attention from you in the long run. I also agree from personal experience that you need to eat before you play, too! My husband and I stock "healthy" cereal, snack bars, leftover salad to snack on if it's a "witching hour" night for the kids. For a while, I tried just making time to play before making dinner, but then the kids are tired by dinnertime and won't eat (even if happy). My husband's stomach also couldn't deal with the delay ;-) (posted August 20, 2007 by ohiomomMD).

Further, like other working mothers, women physicians with families struggle to achieve the ultimate efficiency. One physician mother recalls:

> When the kids were little, they slept in their clothes so I could shovel them from the car to the sitter's door without arousing them (quoted in Chin et al. 2002: 291).

Dr. Cabot is not alone. In a survey of 800 academic physicians in departments of medicine around the country, respondents were asked to provide coping strategies used to balance work and family life. More than 50% cited efforts to improve efficiency (Levinson et al. 1992). Inevitably, however,

efficiency can only go so far without infringing on family life. Clearly, Dr. Cabot was not seeing her children when they were awake in the morning.

Another similarity between women physicians with children and other professional mothers involves spousal support. In general, mothers in elite occupations often suggest that supportive husbands are key to their success. Mothers in medicine are no exception:

> ...I am really happy, but I think it's for exactly the reasons that have been already listed:..., and great husband who really IS involved and very supportive. I wonder if we did a survey and correlated "happiness" with "supportive husband who actively participates in child and house care" whether that would explain most of the variance?... (posted march 14, 2003 by psych).

In reality, however, like other working women, physician mothers often assume the bulk of the child care responsibilities. This is especially true for women physicians with physician spouses. One midlife female physician with a physician spouse complained that she often had to reject speaking opportunities during the early years of her career because she could not arrange adequate child care, but that her husband accepted speaking invitations without ensuring that child care was available. He simply assumed that the children would be handled by his wife. Another complained that her husband can, "Clip an aneurysm without breaking a sweat, but a poopie diaper makes him cry like a baby."

On the other hand, it also appears that because of their earning potential, and their increasing willingness to marry men outside of medicine, that there is an increasing cadre of women physicians who honestly share household chores equally and/or who have more supportive spouses. Two MomMD participants shared their experiences:

> My husband had a very involved dad, and I think that has really shaped him in being a very involved dad himself. He took over as primary parent during my first 1 and a 1/2 yrs of residency (when my son was 1) until my schedule got reasonable again. When I had my daughter, I stayed home for 8 months, but I went back to work 2 evenings and Sat afternoon from 2 months on, and guess who took care of the baby and our 5 year old? My husband! I am so glad we talked about all of this before we got married. Posted by psyc posted April 11, 2003 7:12 PM

> My call is endocrinology (my specialty) and medicine shared and is 1 in 10. When I am off, I am OFF. I work in the office 8:30–4:45 with Wednesday afternoon off. My husband is home all day on Thursdays. We have evening meals together. My husband [who was a lawyer] has a gourmet kitchen store. He can cook, clean, wipe babies at either end. He does windows, does my taxes, reviews my contracts, and is a consistent, persistent force in my life. I am so sorry there aren't any available brothers. Posted by enddoc April 16, 2003 10:11 PM April 16, 2003 10:11 PM

One woman physician whom we interviewed admitted being seriously involved with a retina surgeon, but ultimately ending the relationship because she knew that the marriage would have required her to sacrifice her career. The woman is now the head of a hospital department and the mother of two children. Her husband is a part-time chaplain at the hospital where she works. Increasingly, women physicians find themselves in more balanced marriages. Here again, there experiences parallel those of other high earners. Research by Julie Brines finds that men take "men tend to share more housework as their wives' incomes approach theirs (McNeil 2004)" Another woman we interviewed has four children and a husband who stays at home to maintain her house and care for them. She commented that they made this decision because his earning potential as an engineer was ultimately lower and less stable than hers was as a primary care physician.

On the other hand, the essential nature of physicians' work makes the challenges faced by physician parents somewhat unique. Since it is not possible for many physicians to stay home with sick children, they have to make alternative arrangements. On the other hand, many of the physicians in this category, earn enough to hire in-house child care. One anesthesiologist addressed this issue in her recent comments on the MomMD Website:

> I (anesthesiologist) will be going back to work in Jan 2008 for 2 days of the week- after taking a year + off. My husband is returning from an Iraq deployment soon and is an ER doc. Our son will be 15 months old when we start work in Jan 2008. Between both of our jobs, I don't forsee either one of us being able to leave immediately or even soon to get him if he is in daycare- how do other people work this esp if no family is in the area. we don't live in a neighborhood with extremely friendly people – I think that is just part of living in DC- and everyone we know works full-time. Anyone been in this situation. We'd like to avoid paying an agency for back up care esp as I only work 2 days per week. (posted October 7, 2007 by bpt).

This woman was quickly advised to seek in-home nanny care so that she did not have to confront the possibility of leaving work for a sick child, and the woman seemed very receptive to the idea, not mentioning the possibility that such services would be costly compared with 2 days of earnings.

Another discussion on the MomMD Website involved the struggle to get housekeeping and child care services simultaneously. Prior research on working women physicians indicates that they typically spend about one half hour a day cooking and another half hour per day on housework (Frank et al. 2000). A nationally representative survey indicates that working women in general spend on 1 h and 10 min per day on cooking and only 40 min per day on housework (Robinson and Godbey 1997). Women physicians appear to make up the gap by relying more on domestic services. One recent woman participant on the MomMD Website discusses how she solved her need for household help by hiring two nannies.

> but my experience and that of my friends who have worked with nannies in the past, it's difficult to find a nanny who wants to both take care of your child and do the housework and do the cooking. I started with one nanny for my twins at 8 weeks. All we asked of her was to prepared meals for the kids and pick up after them and do their laundry as needed (though we frequently did it ourselves). We also had someone come clean our house once a week for a few hours. As they got older and more mobile, she asked that we hire someone part-time to help her. Also, the nanny and housekeeper did not get along so we had to get rid of the housekeeper. Well, in the end, we have one full-time live-out nanny (7–6 pm M-F) and another nanny/housekeeper (9-6 M-F) who helps with the kids and picks up the house, cleans bathrooms, kitchens, etc. She's not the best housekeeper and we end up doing more stuff on the weekends ourselves, but it keeps our house from looking like a war zone and she's great with the kids and gets along with our primary nanny (posted August 6, 2007 by Pulpo).

Another couple we interviewed, who was expecting their fourth child, turned to the two nanny solution when the wife decided to quit a part-time primary care internal medicine job and pursue an oncology fellowship. The wife commented that her entire fellowship salary would not cover their child care costs. While the two nanny solution discussed in this post may seem extreme, it must be increasingly common throughout the medical workforce as the number of two physician, two career marriages grows. As we have seen, 95% of female physicians with physician spouses are in two career marriages and 50% of these couples work an average of 100 h or more collectively in an average week. So, these couples are facing extreme pressures on their time and increasingly they have significant additional income. Since many of these couples have children, they must seek the additional help. For some, two nannies is an attractive solution.

Although efforts to promote greater work–family balance remained limited, there is some evidence that the critical mass of women in medicine began having a small effect on the structure of the profession during the 1980s and 1990s. One of the first major reforms that occurred involved the couples match. Prior to 1983, physician couples seeking residency spots had to either limit their selections to one city or rely on the poorly known and rarely used option 7, which allowed physician couples to negotiate their residencies outside of the match system. Apparently, the few who attempted to use option 7 encountered significant resistance from hospitals who preferred single residents or residents with a supporting spouse. Nevertheless, the critical mass of women in medicine and the growing number of two physician couples forced the system to evolve so that couples can now match together (Belkin 1985). Between its inception and 2004, the number of two physician couples taking advantage of the couples match increased continuously. It has declined only slightly since then.

Further, there is limited evidence that conditions are improving for women in the medical education system. One woman we interviewed who graduated in 1985 told the story of a classmate who was pregnant with her first child during their first year in medical school. At the time, the woman gave birth 2 days before her final exams. She was not granted an extension and was told that she needed to take the test or get a zero. She took the test standing because she couldn't sit on her episiotomy. She got a D. Although this story appears draconian, there is every reason to believe that relatively little changed throughout the 1990s. The following 2006 letter to editor of the New York Times captures the experiences of one physician mother struggling to breast-feed:

> To the Editor:
>
> I am a mother of four and a pediatrician. My first child was born when I was in medical school, and my second and third during my residency. Returning to work after only 10 weeks (12 weeks was the maximum maternity allowed), I struggled to breast-feed my babies while working nights, weekends, 15-h days and 24-h shifts. I was forced to pump breast milk in bathrooms, call rooms, wherever I could find an outlet and a place to sit. I would struggle with engorgement through rounds that lasted for hours, or E.R. shifts that were too busy to take a break from. If the very profession that is supposed to be the largest supporter of breast-feeding treats its own mothers in this way, who are we to put such pressure, guilt and expectation on all new mothers? Until this society is structured to support and nurture those women who are lucky enough to be able to breast-feed, we can only expect any mother to do the best she can.
>
> Dr. Kimberly Fahey Brown
> Sands Point, N.Y.

Today, in contrast, a Massachusetts appeals court recently ruled in favor of Sophie Currie. As a result, Ms. Curie will be granted additional break time when she takes Step 2 of the U.S. Medical Licensing Exam so that she can pump milk for her young infant.

It also appears that medical specialty societies like the American Academy of Pediatrics and the American College of Physicians have acknowledged the increasing demand for flexible schedules. In particular, the American Academy of Pediatrics; Committee on the Pediatric Workforce has a section dedicated to women's issues. They have helped to fund significant survey research to understand the scope of part-time work in their specialty and have drafted written resources for those in their field who are seeking flexible schedules.

Nevertheless, it is worth reiterating that women physicians failed to unite even during the 1990s over work and family issues. Instead, the growing number of women in medicine has continued to face motherhood alone. One woman obstetrician reflects on her experiences trying to combine work and family as a fellow during the 1990s:

> When, at age 37, I delivered my firstborn 1 week to the day after beginning a fellowship in high-risk pregnancy, I was devastated to have him admitted to the neonatal intensive care unit. On my way out the door, I ran into the senior fellow, who said to me, "Too bad about what happened. When can I put you back on the call schedule?" I seriously considered skipping my 4 allotted weeks of maternity leave, since if both my son and I were at the hospital, I could arrange to see him more. Little has changed since then: Our residents get a few weeks off for maternity leave, after which they must either resume their 12-h days (and every third or fourth night in the hospital) or add extra time to their 4 years of residency training (Plante 2004: 840).

The efforts that women physicians must make to balance work and family do not end with their children age out of infancy. They continue to make hard choices and ultimately they seriously limit their time for parenting.

Conclusion

Although relatively little has been done to promote family-friendly work environments, we remain cautiously optimistic and acknowledge that even in the absence of a large-scale transformation of medical work, women's presence in the profession is having effects. Over time, there has been little

change in the tendency for men and women in medicine to work part-time. Nevertheless, the stability of trends in part-time work ultimately suggests that women's presence in medicine will have an effect on the structure of the profession simply because more women work part-time, and more physicians are women. So, ultimately, as the representation of women in the profession grows, the intensity of medical work effort per provider should decline and in the absence of increases in physician supply, the availability of medical care should decrease. This structural change has already been noted by many in medical policy. Further, as we noted earlier, structural changes in the profession of medicine may be increasing opportunities for some physicians, like residents and primary care providers to maintain more family-friendly schedules.

We emphasize, however, that declines in the supply of medical services are driven almost exclusively by demographic changes rather than by structural reforms prompted by women's presence. Further, we reiterate that increases in the total number of part-time physicians must be understood in the context of increasing diversity in work effort. On the one hand, the feminization of medicine will cause declines in the average medical workweek in the short term. On the other hand, trends suggest that more female physicians are working long weeks. So, in the absence of change, over time the initial declines in work effort will dissipate. The increasing numbers of women in all aspects of the medical profession will inevitably enhance the possibilities for meaningful change. Mary Lou Schmidt, an Associate Professor of Pediatrics and a contributor to Eliza Chin 2002 anthology on the experiences of women physicians reflects on her friend Becca and "her six girlfriends who created their own private OB/GYN practice where everybody works four days a week, everybody has at least one or two kids and everybody shares the profits equally (Chin 2002: 280)." And Becca is not alone. The number of all female practices is inevitably increasing, especially in specialties where women are well-represented. Health care institutions are also slowly increasing their response to the growing need for family-friendly support. One neonatologist we interviewed said that she had negotiated a position that involved nearly continuous work 1 week out of every month, but that during that week, her child would receive 24-h care in a hospital center. There is even an advocacy organization, Child Care in Health Care, designed to encourage the development of child care options for health care workers. The questions are whether a critical mass of women physicians will be able to take medicine in a new direction, and how many women it will take to create a critical mass.

Agenda for the Future

As we write this, some form of national health insurance seems on the horizon, but we cannot say what form it will take. How will this impact women physicians? This is a key area for future research. The role that women physicians play in the future of the medical profession and the potential of the profession to adopt more family-friendly work schedules will inevitably depend on the structure that health care reform takes.

In previous generations, women physicians have opted to pursue primary care medicine more than their male colleagues. The current generation of physicians is not adopting this traditional gender gap. As we discuss elsewhere (Boulis and Jacobs 2008), the rate at which new physicians opt to pursue primary care is declining at an alarming rate, regardless of medical student gender, and the future supply of foreign medical graduates is not stable. So, an increasing number of primary care visits are now handled by nurse practitioners and physicians assistants. Yet, as we discussed earlier, the evolution of primary care is not completely eclipsing the need for primary care physicians. In the absence of legal reforms, physicians are still needed to supervise nurse practitioners and physicians assistants providing primary care.

Future research needs to explore how the evolution of primary care will affect the profession. On the one hand, in the absence of government intervention, the shift toward physician extenders might

increase opportunities for family-friendly work schedules among physicians. As we discussed earlier, the development of convenient care has resulted in more opportunities for part-time work. On the other hand, the widespread adoption of the primary care home might increase pressure on physicians to adopt more continuous hours because one of the primary premises of the primary care home is that patients need a continuous relationship with their provider (Champlin 2007).

Future research could also focus on the specialties that have, heretofore, offered greater opportunities for family-friendly work. According to the Community Tracking Study Physician Survey, the percent of psychiatrists and pediatricians who currently work reduced schedules is significantly higher than in other specialties. Research efforts could explore how and why these fields have evolved and consider if they will evolve further in the face of health care reforms.

A third issue to consider in future investigations involves how the cost of medical school and physician salaries influences physicians' work efforts. In the absence of change, physicians will continue to accrue substantial debt and face declining reimbursements. These realities will make the possibility of family-friendly schedules increasingly unrealistic unless something is done.

Finally, efforts should explore how physicians' family structures will affect the profession's family-friendly opportunities. As we discuss elsewhere (Boulis and Jacobs 2008), the number of two physician marriages is increasing. Although women in these relationships continue to assume the bulk of responsibilities for domestic life, the willingness of male physicians to sacrifice work hours and work location for family life should increase as their spouses' commitment to the labor force increases.

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