

The unbearable unhappiness of the ObGyn: A crisis looms

➔ One in every five physicians feels dissatisfaction with a career in medicine—some so strongly that they abandon the workforce. An insider proposes solutions to burnout.

“I CAN’T GET NO SATISFACTION”

Mick Jagger and Keith Richards, 1965

“FOR THE TIMES THEY ARE A-CHANGIN’”

Bob Dylan, 1964

The lyrics of two songs written more than 40 years ago are an excellent way to describe today’s physician workforce. Regrettably, many physicians who grew up listening to these performer-philosophers have yet to heed the words of Bob Dylan. Instead, they echo the sentiments of Mick Jagger and Keith Richards without doing much to correct the problem.

Why the decline in work satisfaction? Many reasons have been cited, including:

- loss of autonomy
- economic pressures
- an increasing degree of government and insurer control over practice
- the liability crisis
- a divergence between professional and personal expectations
- physicians’ own high career expectations
- a desire for more time for family and self.¹

The growing level of dissatisfaction with the practice of medicine has, clearly, reached crisis level: Twenty percent of all physicians report that they are dissatisfied with their career.^{2,3} And lack of fulfillment appears to be developing much earlier in the life of a physician than has so

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Dr. Weinstein has no financial relationships relevant to this article.

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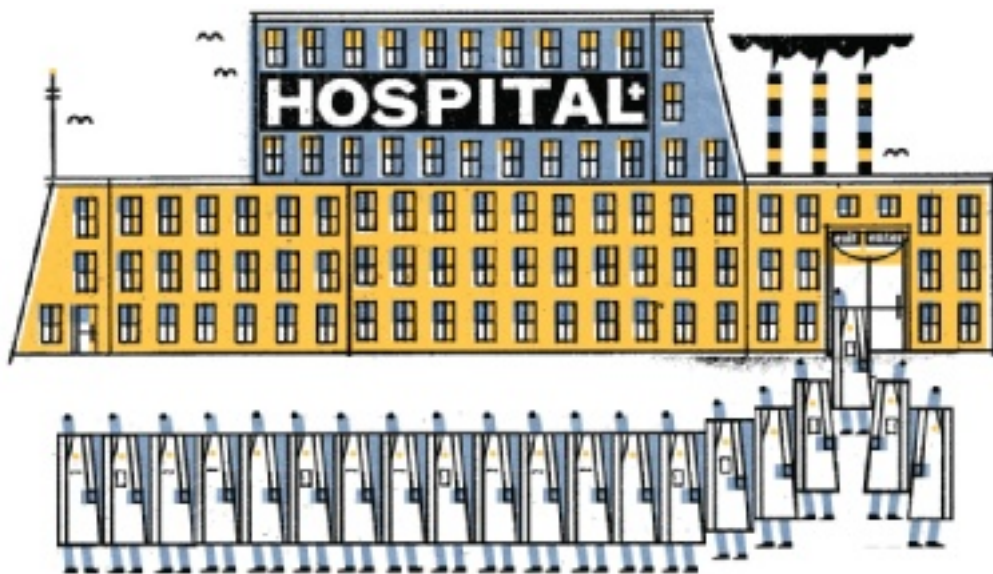
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far been appreciated. Not only is it showing up in residents, job dissatisfaction is evident even among medical students. It is quite revealing—and depressing—that 40% of young physicians would choose not to go to medical school if they had to choose again.

In this article, I examine the characteristics of the dissatisfied physician, explain the apparent reasons for this lack of fulfillment, and propose a number of steps that can be taken to salvage the situation, lengthen the time that a physician works, on average, and add flexibility and variety to work life.

Ultimate effect of dissatisfaction? Loss of a physician

An unhappy physician is two or three times more likely to leave the profession or decrease the number of hours worked than a satisfied physician is.⁴ And when a physician leaves the workforce, we lose a valuable resource. The estimated replacement cost for a physician in 1992 to 1999 dollars was \$250,000, and that cost is at least 50% higher today.^{5,6} Besides the monetary loss, there is disruption to other members of the practice group and to patients when a physician leaves the profession.

Landon and colleagues found that the average age of a physician working full-time

was 47 years, compared with 53 years for a physician who was working fewer than 20 hours a week and 63 years for a physician at retirement.⁴ However, these data are approximately 7 years old; current figures are likely to show curtailment of work hours at even younger ages.

It is not realistic to expect that 1) the educational system will increase medical school class size and 2) enough physicians will finish training and develop a mature practice in the time necessary to offset the number of physicians now altering their workloads or exiting the workforce.

Does gender influence the satisfaction rate?

The profession of medicine has changed strikingly over the past 20 years. Once male-dominated, it now is gender-equal and, in some specialties, female-dominated.

This rapid gender shift in medicine has received much of the blame for the decline in physician satisfaction. However, data suggest that, among full-time academic faculty who do not have children, productivity and career satisfaction are the same for women as for men.⁷ A recent study of internists found few gender differences in work-life balance, work hours, and attitudes toward patient care.⁸

**FAST
TRACK**

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Is there a shortage of physicians?

After much talk of an impending physician shortage, many medical schools have increased class size, and a number of new medical schools recently opened or are on their way to opening. The Association of American Medical Colleges recommends that medical school class size increase 30% by 2015.³²

Some experts believe that there will be a dearth of generalist physicians; others think that specialists will be in short supply.

Possible causes of the shortage

The coming physician shortage has been attributed to a number of variables, including:

- an **aging population**, which will require a greater level of health care
- **aging physicians**, with as many as 30% of the current workforce expected to retire during the next 5 to 10 years
- an increase in the number of **female physicians** who work fewer hours than their male counterparts
- an increase in **physicians from Generations X and Y**, who place greater emphasis on lifestyle and personal time.³³

Cooper, who has written extensively on physician workforce numbers, believes that placement of the Medicare-funded graduate medical education (GME) position cap approximately 10 years ago has been the major driver of the physician shortage. Improvement will come, he says, only when this cap is lifted or altered.³⁴

Are there enough doctors?

The number of physicians per capita is at

its highest point in 50 years in the United States, yet the Council of Graduate Medical Education predicts a 10% shortfall by 2020.³⁵ When regions with a high supply of physicians are compared with regions with a low supply, outcomes are the same, and patients do not perceive any physician shortfall.^{36,37} It is interesting that, in regions where there is a high supply of physicians, physicians perceive there to be greater difficulty in providing the quality of care they desire for their patients.³⁸

A greater supply of physicians leads to more tests and procedures and higher costs.³⁷ Goodman and Fisher believe that having more specialists decreases the flexibility of the physician workforce. They also believe that the GME cap should be maintained, funding should be reallocated to the more cognitive specialties, and the current payment system should be reformed.³⁵ (Any physician who has attended a hospital medical executive committee meeting knows that reallocation of resources to cognitive specialties will never happen: Hospitals want more surgical procedures to boost their bottom line.)

A review of the many studies and opinions published about current workforce numbers and future needs makes it obvious that very little evidence exists to support any of the recommendations made by experts. Almost all studies mention adding to the workforce with minimal discussion about how to keep the current workforce from leaving—a much better use of resources.

Among surgeons, an equal percentage of each gender believes that the work schedule leaves too little time for personal and family life.⁹ Although it has been suggested that women prefer to work fewer hours than men, evidence indicates that younger men have the same desire to work less and spend more time with family.¹⁰

That said, there are some gender-related differences in medical workforce characteristics:

- Women reduce their clinical activity during childbearing and childrearing and retire 5.5 years earlier than men do⁴
- In obstetrics, women younger than 40 years are four times more likely to reduce

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work hours or completely stop practice than male obstetricians are¹¹

- Among surgeons, 90% of women live in dual-career households, compared with 50% of men⁹

- When the surgeon is male, children are cared for by spouses in 63% of households; when the surgeon is female, children are cared for by an employee in 88% of households⁹

- Among surgical subspecialists, women are more likely to be divorced or separated and to have fewer or no children; 34% spend 21 to 40 hours weekly on household management.¹²

Despite these differences, a review of the literature on physician dissatisfaction suggests that the gender shift in medicine is not responsible for the growing level of dissatisfaction.

Age is the determining factor

The Baby Boomer generation (born between 1946 and 1964), which had largely controlled all aspects of medicine, especially leadership roles, is rapidly being replaced by physicians from Generations X and Y (born between 1965 and 1980, and 1981 and 2001, respectively), who value personal time and lifestyle much more than “Boomers” have.¹³

These younger physicians demand flexibility and variety in their careers. They grow dissatisfied when these aspects of their work lives fall out of their control. And when it comes to choosing a specialty in which to practice, these physicians see a balanced lifestyle as the key variable.¹³

Much of the discussion of dissatisfaction in medicine has contrasted Baby Boomers with subsequent generations. The Boomer physician typically has a traditional marriage, with the spouse doing most of the parenting and managing household duties. The Boomer physician is more likely to be male, work long hours, and see professional life as the overall driving force of daily existence.

However, the perception that a Boomer physician is immune to career dissatisfaction is incorrect. Dissatisfaction and departure from practice are directly related to age,

with those who are 50 or older more likely to experience them.¹⁴ In another study, age and dissatisfaction were the principal factors positively associated with intention to leave practice.¹⁵

For Generations X and Y, time is the overarching issue

Generations X and Y physicians are an equal mix of genders, with the majority of couples having dual careers. Their desire for balanced work and family life has made time the primary issue in rising dissatisfaction with medicine. There is less time for each patient encounter, more time required for documentation to justify reimbursement, more time necessary to deal with practice management, and less time to handle family issues—especially personal well-being.¹⁶ These issues have also contributed to rising dissatisfaction among Baby Boomers.

Enter, the 80-hour workweek

In 2003, the Accreditation Council for Graduate Medical Education instituted the 80-hour workweek in an attempt to improve patient safety and the lifestyle of physicians in training. Many senior physicians believed that work-hour restriction would erode the quality of training, but this does not appear to have occurred.

Work-hour restriction among surgical residents has had no effect on academic performance but has markedly decreased psychological distress.¹⁷ Among medical residents, work-hour restriction has improved career satisfaction and decreased emotional exhaustion—but residents perceive restrictions to have impinged on patient care and resident education.¹⁸ Although surgical residents believe that restriction has reduced overall stress, improved quality of life, and provided time in which to manage their personal life, they are concerned about the limitation on exposure to patients—yet 96% of these residents would not be willing to add an additional year to their training.¹⁹

There is evidence that about one third of a resident’s time is spent performing activi-



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ties of marginal or no educational value.²⁰ By eliminating these activities and making better use of simulators and patient surrogates, the workweek could be reduced even further, allowing the physician in training more time for interaction with patients and providing a better balance between work and personal life.

Burnout is widespread

If the goal is to retain physicians in the workforce, it is more important to reduce dissatisfaction than to increase satisfaction. Why? People who are dissatisfied are more likely to change what they are doing than those with any level of satisfaction.⁴

The profession must understand that burnout is common and directly related to increasing dissatisfaction.²¹

Burnout typically occurs when one has a highly demanding position with limited autonomy. A physician experiences burnout when one or more of the following is present:

- emotional exhaustion
- feelings of inadequacy in terms of personal accomplishment
- depersonalization
- increasing cynicism in personal interactions.²¹

This is an accurate description of the current state of medical practice.

Because “the times they are a-changin’,” it is necessary that leaders within the medical profession drastically change the way that medicine is taught and practiced.²²⁻²⁴ Any further changes—beyond work-hour limitations—should be carefully designed with a mechanism in place to evaluate effects on both physicians and patients. A new approach to the practice of medicine is desperately needed to allow a better work-life balance while maintaining the focus on quality and safety.

Ways to reduce dissatisfaction

Dr. Abigail Zuger summed up the feelings of many when she wrote: “The profession of medicine has taken its members on a wild ride during the past century: a slow, glori-

ous climb in well-being, followed by a steep, stomach-churning fall.”²⁵

I offer the following proposals for discussion. My primary aim in developing these suggestions was to give physicians more of that most precious of commodities: time. More time has the potential to change the work-life balance and improve both professional and personal satisfaction at the same time that it decreases dissatisfaction.

Again: **The key to retaining physicians in the workforce is to decrease dissatisfaction.** That is more likely to have the desired effect of a larger, stable workforce than is increasing the number of medical students and physicians in training. As is true in most aspects of life, it is easier and cheaper to improve what you already have, recycle what you can, and replace only what is absolutely necessary.

Recommendations—for practitioners, academic and private

- **Limit work hours to 50 or fewer per week.** Many physicians work too many hours; this is not beneficial to them, their families, and their patients.²⁶ For both patient safety and physician well-being, it is time to voluntarily restrict our work hours before federal legislation creates limits for us.
- **Develop new models of practice,** such as the use of a laborist for obstetric coverage. The implementation of a hospital-based laborist program allows a safer environment for the patient, a rapid-response team presence, and a controlled lifestyle for physicians who desire to practice obstetrics.²⁷ Structured properly, such models are revenue-neutral for the institution. (See OBG MANAGEMENT’s recent article, “*The laborists are here, but can they thrive in US hospitals?*” in the August 2008 issue, available at www.obgmanagement.com.)
- **Create part-time professional liability insurance policies.** Premiums for these policies should be prorated according to the amount of clinical time worked and the physician’s work record. Insurance policies also need to

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Job dissatisfaction in ObGyn

be written to cover a slot rather than a particular individual, so that several physicians can share the same position to equal one full-time practitioner.

- **Increase job sharing and part-time employment** so that these options become more attractive. With job sharing, two physicians work 50% of the time, adding up to one full-time practitioner. This option will reduce physician dissatisfaction and has the potential to increase the work life of the practitioner while improving patient safety.²⁸ Job sharing will also facilitate recruitment and retention of the current workforce.²⁹

- **Acquire time- and money-management skills.** Most practitioners need to develop these abilities because so many stressors are related to limits on time and money.

- **In academic medicine, revamp the current career trajectory.** The timeline that includes tenure and unrealistic expectations for promotion is archaic and needs to be eliminated. Most Generations X and Y physicians find it to be inflexible at exactly the wrong time in their life. Forced to choose between work on one hand and family and personal well-being on the other, they will almost always choose family and personal life first.³⁰ Similar changes are recommended for the private practitioner under consideration for partnership.

Recommendations—for physicians in training

- **Limit work hours to 65 or fewer per week.** The current 80-hour week is not conducive to improving physician satisfaction or safe care. There is evidence that work exceeding 18 hours a day may impair a physician.³¹ No physician likes working long hours, and it is clearly not safe for patients. Elimination of responsibilities of no or marginal educational value would make a 65-hour work-week practical. Training institutions will need to add more support staff, including physician extenders, to implement a shorter week.

- **Increase the use of teaching simulators.** This improvement would assist in the development of technical skills. The training insti-

tution would be responsible for developing a simulation center. In areas with multiple training programs, a central location would be developed, with cost shared by all parties. Some of the cost would be recouped by the time saved in the operating room. There is also the potential to prevent medical errors and reduce liability cost. (See OBG MANAGEMENT's recent article, "How simulation can train, and refresh, physicians for critical OB events," which describes, among other issues, the use of regional simulation centers. The article appeared in the September 2008 issue, available at www.obgmanagement.com.)

- **Teach physicians in training time- and money-management skills.** Many of the stressors experienced by these young physicians relate to understanding how to budget time and money.

- **Sponsor 24-hour, on-site child care at reasonable or no cost.** This recommendation for the training institution is important because child care for the dual-career couple is difficult to arrange, often incompatible with the couple's schedule, and expensive. Any training institution that sponsors a residency program and benefits from this low-cost workforce should be required by the Accreditation Council of Graduate Medical Education to fund this benefit. It is the right thing to do and is certainly a valuable recruiting tool. It will make physicians who have children feel more comfortable working the hours required for their training while removing a major stressor—worrying about their child.

- **Supply extra support for residents** when a co-resident is on maternity or paternity leave. The training institution should implement this protection to prevent working residents from being penalized when it is necessary for a co-resident to be on leave.

- **Create the option of job sharing during residency.** In the business world, job sharing has become common and increases satisfaction and productivity. A resident would work half-time, with salary and benefits prorated so that the cost to the sponsoring institution is revenue-neutral. This would be a valuable recruiting tool among residents who are willing to accept a prolonged period of training.

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the best and brightest professionals. As the satirical poet Auguste Marseille Barthélemy pointed out, way back in 1832: “The absurd man is he who never changes.”

References

- Holsinger JW Jr, Beaton B. Physician professionalism for a new century. *Clin Anat*. 2006;19:473–479.
- Buchbinder SB, Wilson M, Melick CF, Powe NR. Primary care physician job satisfaction and turnover. *Am J Manag Care*. 2001;7:701–713.
- Leigh JP, Kravitz RL, Schembri M, Samuels SJ, Mobley S. Physician career satisfaction across specialties. *Arch Intern Med*. 2002;162:1577–1584.
- Landon BE, Reschovsky JD, Pham HH, Blumenthal D. Leaving medicine: the consequences of physician dissatisfaction. *Med Care*. 2006;44:234–242.
- Berger JE, Boyle RL Jr. How to avoid the high costs of physician turnover. *Med Group Manage J*. 1992;39:80–91.
- Buchbinder SB, Wilson M, Melick CF, Powe NR. Estimates of costs of primary care physician turnover. *Am J Manag Care*. 1999;5:1431–1438.
- Carr PL, Ash AS, Friedman RH, et al. Relation of family responsibilities and gender to the productivity and career satisfaction of medical faculty. *Ann Intern Med*. 1998;129:532–538.
- Jovic E, Wallace JE, Lemaire J. The generation and gender shifts in medicine: an exploratory survey of internal medicine physicians. *BMC Health Serv Res*. 2006;6:55–71.
- Schroen AT, Brownstein MR, Sheldon GF. Women in academic general surgery. *Acad Med*. 2004;79:310–318.
- Helliger PJ, Hingstman L. Career preferences and the work-family balance in medicine: gender differences among medical specialists. *Soc Sci Med*. 2000;50:1235–1246.
- Pearse WH, Haffner WHJ, Primack A. Effect of gender on the obstetric-gynecologic work force. *Obstet Gynecol*. 2001;97:794–797.
- Grandis JR, Gooding WF, Zamboni BA, et al. The gender gap in a surgical subspecialty. *Arch Otolaryngol Head Neck Surg*. 2004;130:695–702.
- Schwartz RW, Jarecky RK, Strodel WE, Haley JV, Young B, Griffen WO Jr. Controllable lifestyle: a new focus in career choice by medical students. *Acad Med*. 1989;64:606–609.
- Pathman DE, Konrad TR, Williams ES, et al. Physician job satisfaction, dissatisfaction, and turnover. *J Fam Pract*. 2002;51:593.
- Rittenhouse DR, Mertz E, Keane D, Grumbach K. No exit: an evaluation of measures of physician attrition. *Health Serv Res*. 2004;39:1572–1588.
- Weinstein L, Wolfe H. The downward spiral of physician satisfaction: an attempt to avert a crisis within the medical profession. *Obstet Gynecol*. 2007;109:1181–1183.
- Zaré SM, Galanko JA, Behrns KE, et al. Psychologic well-being of surgery residents after inception of the 80-hour workweek: a multi-institutional study. *Surgery*. 2005;138:150–157.
- Goitein L, Shanafelt TD, Wipf JE, Slatore CG, Back AL. The effects of work-hour limitations on resident well-being, patient care, and education in an internal medicine residency program. *Arch Intern Med*. 2005;165:2601–2606.
- Karamanoukian RL, Ku JK, DeLaRosa J, Karamanoukian HL, Evans GR. The effects of restricted work hours on clinical training. *Am Surg*. 2006;72:19–21.
- Boex JR, Leahy PJ. Understanding residents' work: moving beyond counting hours to assessing educational value. *Acad Med*. 2003;78:939–944.
- Gabbe SG, Webb LE, Moore DE Jr, Mandel LS, Melville JL, Spickard WA Jr. Can mentors prevent and reduce burnout in new chairs of departments of obstetrics and gynecology: results from a prospective, randomized pilot study. *Am J Obstet Gynecol*. 2008;198:653.e1–653.e7.
- Cooke M, Irby DM, Sullivan W, Ludmerer KM. American medical education 100 years after the Flexner report. *N Engl J Med*. 2006;355:1339–1344.
- Jauhar S. The demise of the physical exam. *N Engl J Med*. 2006;354:548–551.
- Arky RA. Shattuck Lecture. The family business—to educate. *N Engl J Med*. 2006;354:1922–1926.
- Zuger A. Dissatisfaction with medical practice. *N Engl J Med*. 2004;350:69–75.
- Weinstein L, Garite TJ. On call for obstetrics—time for a change. *Am J Obstet Gynecol*. 2007;196:3.
- Weinstein L. The laborist: a new focus of practice for the obstetrician. *Am J Obstet Gynecol*. 2003;188:310–312.
- Parkerton PH, Wagner EH, Smith DG, Straley HL. Effect of part-time practice on patient outcome. *J Gen Intern Med*. 2003;18:717–724.
- Shields MC, Shields MT. Working with Generation X physicians. *Physician Exec*. 2003;29:14–18.
- Williams J. *Unbending Gender: Why Family and Work Conflict and What To Do About It*. New York: Oxford University Press; 2000.
- American College of Obstetricians and Gynecologists. ACOG Committee Opinion No. 398: Fatigue and patient safety. Washington, DC: ACOG; Feb 2008.
- Association of American Medical Colleges. AAMC statement on the physician workforce, June 2006. Available at: <http://www.aamc.org/workforce/workforceposition.pdf>. Accessed Oct. 31, 2008.
- Iglehart JK. Grassroots activism and the pursuit of an expanded physician supply. *N Engl J Med*. 2008;358:1741–1749.
- Cooper RA. It's time to address the problem of physician shortages: graduate medical education is the key. *Ann Surg*. 2007;246:527–534.
- Goodman DC, Fisher ES. Physician workforce crisis? Wrong diagnosis, wrong prescription. *N Engl J Med*. 2008;358:1658–1661.
- Goodman DC, Fisher ES, Little GA, Stukel TA, Chang CH, Schoendorf KS. The relation between the availability of neonatal intensive care and neonatal mortality. *N Engl J Med*. 2002;346:1538–1544.
- Fisher ES, Wennberg DE, Stukel TA, Gottlieb DJ, Lucas FL, Pinder EL. The implications of regional variations in Medicare spending. *Ann Intern Med*. 2003;138:273–298.
- Sirovich BE, Gottlieb DJ, Welch HG, Fisher ES. Regional variations in health care intensity and physician perceptions of quality of care. *Ann Intern Med*. 2006;144:641–649.