

Shaping Your Career to Maximize Personal Satisfaction in the Practice of Oncology

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ABSTRACT

The practice of oncology can be a source of both great satisfaction and great stress. Although many oncologists experience burnout, depression, and dissatisfaction with work, others experience tremendous career satisfaction and achieve a high overall quality of life. Identifying professional goals, optimizing career fit, identifying and managing stressors specific to practice type, and achieving the optimal personal work-life balance can increase the likelihood of individual oncologists' achieving personal and professional satisfaction. In this article, we will explore how oncologists can accomplish these tasks and will examine several pervasive professional myths that often distort perspective. The article concludes in a conversation with four oncologists regarding what they find most meaningful about their work, how they manage career-specific stressors, and how they achieve balance between their personal and professional lives.

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INTRODUCTION

Oncologists spend a minimum of 10 years in graduate training to be qualified to care for patients with cancer. In addition to its length, the training curriculum is arduous, requiring long work hours, frequent overnight call, and mastery of a large volume of material. Individuals pursue this training with the belief that their sacrifice will culminate in a fulfilling career after the completion of training. Unfortunately, a number of studies demonstrate many oncologists do not achieve this goal.¹⁻⁸ These studies of oncologists suggest that nearly one third experience significant career burnout,¹⁻⁷ a syndrome of emotional exhaustion, depersonalization, and a sense of low personal accomplishment that leads to decreased effectiveness at work. These studies also suggest that large numbers of oncologists believe that their family and personal lives suffer because they have chosen a career in medicine/oncology.^{1,5-7} This spill-over of work-related distress to physicians' personal relationships with spouses, children, and other loved ones can lead to feelings of guilt and personal dissatisfaction.^{4-6,9-12} Uncertain how to manage this unhappiness related to their work, many oncologists simply bide their time and hope that things will eventually get better.¹³

The personal angst experienced by many oncologists also appears to influence the care they pro-

vide patients. Studies suggest physician burnout affects quality of care,^{14,15} patients' satisfaction with their medical care,¹⁶⁻¹⁸ and patient compliance.^{19,20} Burnout and distress can also lead to cynicism, which undermines physicians' empathy and their relationships with patients.^{5,21,22} This erosion of compassion is particularly concerning in the field of oncology⁶ where patients often rely heavily on their physicians for support as they face incurable and life-threatening illnesses.^{2,23,24}

How do individual oncologists recover from burnout? Even more importantly, what steps can oncologists take to avoid burnout altogether? In this article, we propose several steps to help oncologists address these questions and maximize their satisfaction from their work. These steps, based on expert opinion and the authors' review of the literature, include identifying professional goals, choosing the most fitting type of practice, managing the stressors unique to that practice type, and determining how to balance competing personal and professional goals. Although these principles are somewhat intuitive, a number of myths cultivated and perpetuated during the training experience often lead oncologists to make choices in direct contradiction to personal values. Here, we will examine these myths, and explore how fellows, early-career oncologists, and oncologists contemplating a career change can make personal choices that help maximize the opportunity for personal and professional satisfaction.

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IDENTIFYING PROFESSIONAL GOALS AND CHOOSING THE OPTIMAL CAREER/PRACTICE TYPE

To the unfamiliar observer, individuals who pursue an oncology fellowship appear to be making a highly specific career choice. After all, these individuals have completed 4 years of medical school and 3 years of internal medicine residency and have selected a very focused area of medicine based on this experience. Yet a vast number of careers exist beneath the rubric of medical oncology. In the broadest sense, most of these careers can be categorized as private practice, clinician-educator, translational scientist, or basic scientist, although variations and/or combinations of these categories exist.

The work content and rewards of each of these career options differ widely, with some characteristics in direct contrast to one another (Table 1).²⁵⁻²⁸ These differences may be viewed as positive or negative traits depending on individual preferences. Accordingly, choosing the right career type is perhaps the most critical step for future career satisfaction. To determine which career type is the best personal option, each oncologist must identify his or her personal and professional goals. The professional goals of many oncologists center on themes of being a healer, being an expert, building a successful practice, being a teacher, or making scientific discoveries. For some oncologists, professional goals are even more specific, such as caring for patients at the end of life or for patients with a specific disease. Reflecting on the questions presented in Table 2 can be one way for oncologists to begin to identify their professional goals.

Once professional goals are identified, it is crucial for oncologists to make a critical appraisal of which set of characteristics in Table 1 best aligns with their professional goals. Although some private practice positions provide opportunities for oncologists to participate in

Table 2. Identifying Professional Goals

Questions for Professional Goal Setting

1. Why did I choose to become a physician?
2. Why did I choose to become an oncologist?
3. What do I like most about my job?
4. What motivates me professionally?
5. By the end of my career, what three things do I hope to have accomplished?

cooperative group trials and/or resident education, these positions should not be viewed as a way to “have it all.” These hybrid positions can be a good fit for some oncologists, but they are unlikely to allow adequate involvement in research or education for optimal satisfaction if these elements are a passion. Once the ideal job type is identified, it becomes easier to evaluate and compare specific job opportunities.

Despite the critical importance of choosing the right career category at the completion of fellowship, the training experience often fails to help oncology fellows make an informed decision. Fellowship training occurs almost exclusively in large academic medical centers where supervising physicians and role models are typically academic researchers and educators. Although studies in internal medicine residents suggest that trainees often admire the expertise and teaching abilities of their mentors,²⁹ residents and fellows typically observe only the clinical aspects of their practice and have limited insight into faculty members’ research responsibilities, administrative obligations, and the challenges of obtaining research funding and academic

Table 1. Typical Characteristics of Various Career Categories

Characteristics	Private Practice	Clinician Educator	Translational Scientist	Basic Scientist
Percentage of time devoted to patient care	90%-100%	50%-90%	25%-50%	0%-25%
Scope of clinical practice	Typically full spectrum of malignant hematology and oncology, often with substantial nonmalignant hematology and palliative care	Typically full spectrum of malignant hematology and oncology, but often with area of specialized focus	Typically specialized clinical expertise in specific disease	Specialized clinical expertise if any contact with patients
Schedule	Heavy clinical schedule, typically with frequent night and weekend responsibilities	More controlled schedule than private practice, with night and weekend call often shared with residents and fellows	Schedule dependent on clinical and laboratory responsibilities, often challenging to balance clinical and research responsibilities	Schedule dependent on laboratory responsibilities
Intellectual rewards	Caring for a wide variety of malignant diseases	Time spent teaching residents and fellows, clinical expertise in specific area	Development of both scientific and clinical expertise in specific disease area	Pursuit of scientific knowledge and discovery in a specific area
Financial compensation	Higher pay than other categories, with reimbursement often dependent on efficiency and schedule	Typically salaried position, with reimbursement somewhat dependent on number of patients seen	Typically salaried position, with reimbursement related to academic rank and somewhat related to grants	Typically salaried position, with reimbursement related to academic rank and somewhat related to grants
Prestige	Recognition as a subspecialist by patients and physicians in local community	Typically regional recognition as medical educator, occasionally national/international recognition for contributions to medical education	Regional, national, or international recognition as clinical expert in the treatment of a given disease	Regional, national, or international recognition as a scientific expert in the biology of a given disease

promotion.³⁰ Likewise, trainees often do not understand the workload and practice management responsibilities required in private practice.³¹ In a recent survey of practicing oncologists, more than 60% recommended fellowship programs develop additional curriculum on office management and reimbursement issues.¹³

A message that academic careers are “more prestigious” or “a better use of your talent” may also be subtly or overtly implied to some young physicians during training. Some oncology trainees actually report feeling a sense of shame when their personal career ambitions do not align with their mentor’s or program director’s hopes. This leads some residents and fellows to avoid candidly discussing career planning with faculty members who can provide insight into career options and help fellows make well-informed career decisions.³¹ In other cases, even when fellows do seek career assistance, their mentors mistakenly suggest that the recipe that has proved successful for their own career is a universal prescription. This “be like me” approach to career counseling is a missed opportunity for faculty to help fellows identify what matters most to them and gain insight into the challenges of various career types.

Being true to oneself in selecting between the available options is essential if personal satisfaction is to be achieved. Oncologists must also recognize that preferences change. What was attractive to you at one point during your career may later lose its appeal. It is important to stop at periodic intervals to reassess one’s values and consider other opportunities. Although moving between some career tracks can be difficult, it may ultimately be worth the challenge.

Finally, the work content of an individual’s practice may insidiously drift away from the activities that originally attracted them to a specific career category. An oncologist who chooses a private practice career to maximize patient contact but who later becomes increasingly involved in office management is such an example. Similarly, clinician educators who are assigned excessive committee/administrative tasks may discover that little of their time is actually devoted to teaching residents and fellows. Preventing such “career drift” by identifying why you chose your specific career type and defending the time you spend devoted to that component of your work is critical if career satisfaction is to be achieved and maintained.

AWARENESS AND MANAGEMENT OF PRACTICE-SPECIFIC STRESSORS

Once the optimal practice type for personal satisfaction is selected, individuals must be mindful of the unique challenges and stressors that accompany that career type. Although some professional stressors such as educational debt, the rapidly expanding medical knowledge base, productivity expectations, personnel issues, and job security are shared across all practice types, other stressors vary by career category (Table 3).

After choosing the category that best fits personal preferences, oncologists must also recognize and manage the challenges specific to that category. Individuals in private practice typically have a higher patient load, more frequent overnight call/weekend duties, greater exposure to patient death/suffering, and greater administrative duties related to practice management.²⁵ Whether these oncologists are based in a health management organization, single-specialty group, multispecialty group, or solo practice can have profound implications

Table 3. Stressors Specific to Different Career Types

Career Type	Stressor
Private practice	<p>Heavy clinical patient volume</p> <p>Unpredictable work schedule due to patient care issues</p> <p>More frequent overnight call and weekend duties</p> <p>Greater exposure to patient death and suffering</p> <p>Administrative duties due to practice management</p> <p>Greater insurance reimbursement issues</p>
Clinician educator	<p>Heavy clinical patient volume (although night coverage and weekend coverage may be shared with residents/fellows)</p> <p>Significant exposure to patient death and suffering</p> <p>Path for academic promotion may be poorly defined</p> <p>Often perceive that they are less valued by academic medical centers than translational or basic science researchers</p> <p>Lower pay than private practice (this challenge can be magnified since many academic centers are in large metropolitan areas where the cost of living is high)</p>
Translational researcher	<p>Challenge of maintaining both clinical expertise and scientific expertise; often feel clinical skills in areas outside their specific disease focus are eroding and simultaneously feel their scientific knowledge is inferior to their basic science colleagues who do not have patient care responsibilities; can lead to the unsettling notion that they are no longer a good general oncologist and will never be an expert scientist</p> <p>Difficulty obtaining protected time for research, often viewed by administrators as a safety valve for clinical overflow when divisional workload increases; must compete for grants with basic scientists who have no clinical demands competing for their effort</p> <p>Managing regulatory issues related to clinical trial conduct</p> <p>Path of academic promotion can be less clear than for basic scientists</p> <p>Often perceive that they are less valued by academic medical centers than basic science researchers</p> <p>Lower pay than private practice (this challenge can be magnified since many academic centers are in large metropolitan areas where the cost of living is high)</p>
Basic scientist	<p>Challenge of maintaining grant support; only 10-15% of National Institutes of Health (Bethesda, MD) grants are funded and significant effort invested in grant applications frequently goes unrewarded; failure to obtain funding threatens personal job security as well as job security of technicians and graduate students in the laboratory dependent on the principle investigator, which magnifies pressure to obtain funding</p> <p>Continuous pressure to publish with promotion and job security dependent on research publications</p> <p>Constant scientific competition where a 2- to 3-month delay in the date of publishing a discovery may equate to reporting a corroboration rather than novel discovery</p> <p>Stress related to laboratory management; basic scientists must manage how research funds are spent, make hiring/firing decisions, perform performance evaluations, and function as a supervisor for laboratory technicians, graduate students, and administrative staff in their laboratory</p>

on the total hours worked, night and weekend coverage, and the amount of time dedicated to administrative tasks.³²

Clinician-educators are subject to similar challenges as their private practice colleagues, but typically do not perform office management tasks and often have less night and weekend call since it may be

shared with residents and fellows. Despite these benefits, clinician-educators usually receive substantially less financial compensation than oncologists in private practice, often report feeling “less valued” by academic medical centers than clinical or basic science researchers, and may face a more difficult path for academic promotion than faculty engaged in research.^{26,30,33-35}

For translational researchers, the requirement to develop scientific knowledge in a focused area can lead to an unsettling erosion of general clinical knowledge. Simultaneously, translational researchers often feel that their scientific expertise is inferior to their basic science colleagues, who have fewer patient care responsibilities, leading them to feel they are neither master clinicians nor master scientists.³⁶⁻³⁸ It may also be difficult for translational researchers to maintain adequate protected time for research,^{37,39-41} which may necessitate performing research during personal time. Basic scientists are under constant pressure to publish and obtain grants, face significant scientific competition, and must devote substantial time to laboratory management (determining how research funds will be spent, hiring/firing laboratory personnel, and functioning as a supervisor for laboratory technicians, graduate students, and administrative staff).⁴²

How do oncologists cope with these challenges? Unfortunately, some habits developed during the training process may promote unhealthy approaches for dealing with the stress of practice. Faced with little control over their schedule and workload, many residents and fellows cope with their stress by taking a “survival attitude” and believing the myth that “things will get better after the completion of training.”^{13,14} The reality is that fellows completing training exchange one set of challenges for another, and the overall stress level often remains unchanged. Many young oncologists respond to this unexpected situation by resuming the survival attitude and hoping things will get better when they are more established in practice. This mentality of delayed gratification is maintained by many oncologists throughout their entire career and can prevent them from making choices to promote personal and professional satisfaction.^{8,13,43}

To avoid this unhealthy approach to stress and instead develop an approach that promotes personal well-being, oncologists must recognize the stressors typical of their practice type and devise a strategy to manage them. For example, individuals who spend significant time caring for dying patients must take time to process personal distress precipitated by patient suffering.^{23,44,45} Office management tasks that are not personally rewarding should be assigned to other personnel as appropriate or subcontracted to practice management companies. Developing a system of shared coverage to provide time off from work is critical—particularly for individuals in solo or small group practices who may need to partner with other groups in their area or hospitalists to provide adequate coverage. Additional training in communication skills, palliative care, or office management may also help make some tasks for which physicians typically receive little training less stressful.^{2,7,13,46,47}

Other strategies may be helpful for academic oncologists. Clinician-educators should define the path for promotion and how much time they will have for teaching with department chairs, ideally before accepting a position.^{26,48-50} Translational researchers must negotiate how adequate protected time will be provided for their research and determine how they will navigate the nether land between clinical practice and basic research.^{36,38} Spending time on hospital consult services and inpatient teaching services can help maintain general clinical skills; however, the amount of time translational sci-

entists spend in such activities must be closely regulated if they are to be successful scientists. A deliberate prioritization of which clinical skills are most critical to maintain can help these individuals focus their effort to stay current (eg, focusing on maintaining knowledge in solid tumor oncology rather than nonmalignant hematology or some subspecialties of internal medicine). Collaborations with basic scientists and subspecialty colleagues in other disciplines of internal medicine who can be formally and informally consulted is critical for translational scientists.^{36,38} Basic scientists may benefit from training in how to effectively manage their laboratory or by delegating some of these tasks.^{42,51}

These strategies are a limited example of deliberate approaches oncologists in different career categories may take to navigate specific challenges. Each oncologist should assess what aspects of their practice are most stressful and which activities they find least rewarding. Where possible, oncologists should delegate unrewarding tasks to appropriate individuals (practice administrator). For other tasks, additional training may allow some initially stressful tasks to become sources of challenge and satisfaction. Setting limits and using pragmatic strategies to help decompress from stressful aspects of practice can also be helpful (eg, planning a vacation immediately after a month on the hospital service for an academic oncologist). Discussions with colleagues about how they handle particularly challenging aspects of practice can also provide useful ideas, particularly to oncologists at the beginning of their career.³¹

ACHIEVING BALANCE BETWEEN PERSONAL AND PROFESSIONAL GOALS

Identifying professional goals, selecting the optimal career category, and managing category-specific stressors are necessary steps to achieve professional satisfaction; however, oncologists must also determine the optimal balance between personal and professional responsibilities to achieve peak overall life satisfaction. Fame, fortune, and family/personal life are competing interests that contend for the loyalty of each individual. Many oncologists are deceived by the myth that “you can have it all,” and try to pursue all interests simultaneously and with equivalent emphasis. More often than not, this strategy fails. Fame is typically achieved through extensive publication, academic productivity, or building the largest practice in town. Fortune is achieved by having a busier practice and seeing more patients per day. Accordingly, achieving these goals requires staying longer at the laboratory and/or office, preparing manuscripts on personal time, or spending more time in the clinic seeing additional patients. It should be no surprise that seeking prestige and maximal earnings requires some degree of sacrifice of family and other personal life activities.

Thus, oncologists must recognize that their time, talents, and energy are ultimately limited resources. Once acknowledged, oncologists must determine which personal and professional goals are most important and prioritize their time accordingly. No single formula is right for everyone, and these decisions about work-life balance have profound personal and professional consequences that must be considered. For example, two translational researchers of equal intelligence and talent who place a different priority on personal life and academic achievement are likely to have vastly different life experiences. Although both individuals are likely to perform similar tasks during their traditional 40- to 60-hour work week, after hours and

Table 4. Identifying and Integrating Personal and Professional Values

Questions for Identifying and Integrating Values

1. What is my greatest priority in life? Have I been living my life in a way that demonstrates this?¹³
2. Where am I most irreplaceable? At home? At the hospital? Elsewhere?^{52,53}
3. Do I have adequate balance between my personal and professional lives?¹³
4. How much professional achievement (eg, publications, prestige, financial compensation) am I willing to sacrifice to have more personal time or a better relationship with my family/children? Be specific.
5. Am I asking more of my spouse and children than I should?^{52,53}
6. What kind of a legacy do I want to leave my children?¹³
7. What person or activity have I been neglecting?¹³
8. If I could relive the past year, what would I spend more time doing? What would I spend less time doing? What changes do I need to make to help this happen this year?¹³
9. What would I like my life to be like in 10 years?⁵³
10. What do I fear?⁵³

NOTE. Adapted from Shanafelt.¹³

on weekends one individual is likely to spend time with family whereas the other is likely to be writing manuscripts, protocols, and grants. Ten years later, it would not be surprising for one individual to have achieved higher academic rank, have more publications and grant

support, and greater international recognition. The oncologist who prioritized personal life may still have a productive academic career and closer relationships with family and friends as compensation for the reduction in academic achievement relative to their colleague. The career paths chosen by these two individuals may be of equal merit with respect to their potential for personal happiness. Dissatisfaction typically arises when a given individual intended to arrive at one destination (or mistakenly believed they could arrive at both) and instead arrived at another.

To avoid this mismatch between expectations and experience, it is important to make an honest appraisal of personal and professional priorities and acknowledge how these competing priorities influence one another. Some priorities are likely to be mutually incompatible (eg, being the world's expert in a given field and not taking home work to be performed during personal time). Reflecting on the series of questions in Table 4 may be a useful way to identify values and facilitate a realistic integration of personal and professional goals. Individuals who prioritize personal life by setting limits on their work and defending their personal time typically swim against the current in a culture of career-driven colleagues who may view them as unmotivated. It is important for these individuals to recognize that their decision to prioritize personal life will likely affect their professional prestige, academic productivity, and/or personal income. If these oncologists compare themselves to colleagues using only a professional yardstick (personal income, number of publications, academic rank,

Table 5. Worksheet for Individual Application

Worksheet

I. Identifying Professional Goals and Choosing the Optimal Career/Practice Type

- A. Review Table 2. After reflecting on these questions, what would you say are your two to three most important career goals?
- B. Review Table 1. In light of your career goals, rank each career characteristic in the far left column from most important to least important to you by placing numbers 1-6 next to each characteristic.
- C. In each row of Table 1, circle the item that best describes your ideal. In which career column did you place the most circles?
- D. Do the circles for the two to three career characteristics you ranked as most important all fall in the same column? If so, consider this a strong indicator of your preferred career type. If your circles for the two to three career characteristics you ranked as most important do not aggregate in a single column, review each of the characteristics (rows) individually. Note how the columns differ for each characteristic and decide whether the difference is important to you (ie, for some, the distinction between 50%-75% patient care v 75%-100% may be relatively unimportant). If you have to place all circles for the two to three career characteristics you ranked as most important in the same column, which column would you prefer?

II. Awareness and Management of Career/Practice-Specific Stressors

- A. What aspects of work do you enjoy the most? What things could you do to allow you to spend more of your time on these activities (eg, develop disease-specific expertise within group practice, devote time to hospice work, etc)?
- B. Review Table 3. What aspects of work do you enjoy the least? Are there ways you could spend less time on these activities (eg, delegate or hire someone to perform administrative tasks)?
- C. Describe aspects of your work that, although you enjoy them, are very stressful. Why do you enjoy these activities? What makes each of these activities stressful? Are there ways you can preserve what is enjoyable about this activity, but reduce the stressful aspects (eg, pursue additional training in delivering bad news to patients, contract with hospitalist group to provide some night coverage, define path for academic promotion with your department chairman, etc).

III. Achieving Balance Between Personal and Professional Goals

- A. What are your most important personal (non-work-related) goals (eg, relationship with your significant other, relationships with children/family, religion/spirituality, personal health/fitness, activities that provide personal meaning/fulfillment, life goals, etc)? For each of these goals describe four to five concrete examples of what success in this area of life means to you.
- B. Review the professional goals you identified in section I and the personal goals identified in part IIIA. Now reflect on the questions in Table 4. Attempt to make a single, integrated priority list of personal and professional goals. Have you been living in a way that is consistent with this integrated priority list? In what areas do you need to make some changes to live according to your values? Can you think of some specific examples when you have not acted in accordance with your values? Can you think of ways you can avoid such actions in the future (eg, saying "no," making a schedule change to avoid conflict, delegating, etc)?

Other Resources

American Academy of Physician and Patient (<http://www.physicianpatient.org>)
 Vanderbilt Center for Professional Health (<http://www.mc.vanderbilt.edu/root/vumc.php?site=cph&doc=480>)
 Finding Meaning in Medicine (<http://www.meaninginmedicine.org>)
 RENEW (<http://renewnow.org>)

and so on), they are likely to be disappointed. Thus, it is important to recognize and value personal life accomplishments when evaluating overall success.

SUMMARY

The field of oncology offers opportunities for tremendous career satisfaction. The career categories available to oncologists emphasize patient care, education, and scientific discovery to different degrees and also vary widely with respect to financial remuneration and control over work schedule. Identifying professional goals and selecting the career type that best fits these goals can help individuals focus their professional effort on the activities they find most personally mean-

ingful. Once a career category is selected, it is important to recognize and manage the challenges unique to that career type. Oncologists must also decide how they will balance their personal and professional priorities. The optimal work-life balance varies for each individual, but should be intentionally defined and followed. Although presented here in a consecutive fashion, these steps are interrelated and often occur in a synchronous manner. A tool designed to help individual oncologists apply these principles is provided in Table 5.

Rarely can one "have it all." Regardless of career category, individuals who prioritize personal responsibilities above professional duties often have to swim against the current. Assessing one's goals and values and prioritizing personal and professional activities accordingly can help oncologists achieve success in both their personal and professional lives.

REFERENCES

- Whippen DA, Canellos GP: Burnout syndrome in the practice of oncology: Results of a random survey of 1,000 oncologists. *J Clin Oncol* 9:1916-1920, 1991
- Ramirez AJ, Graham J, Richards MA, et al: Burnout and psychiatric disorder among cancer clinicians. *Br J Cancer* 71:1263-1269, 1995
- Kash KM, Holland JC, Breitbart W, et al: Stress and burnout in oncology. *Oncology (Huntington)* 14:1621-1634, 1636-1637, 2000
- Grunfeld E, Whelan TJ, Zitzelsberger L, et al: Cancer care workers in Ontario: Prevalence of burnout, job stress, and job satisfaction. *CMAJ* 163:166-169, 2000
- Allegra C, Hall R, Yothers G: Prevalence of burnout in the US oncology community: Results of a 2003 survey. *J Oncol Pract* 1:140-147, 2005
- Grunfeld E, Zitzelsberger L, Coristine M, et al: Job stress and job satisfaction of cancer care workers. *Psychooncology* 14:61-69, 2005
- Ramirez A, Graham J, Richards MA, et al: Mental Health of hospital consultants: The effects of stress and satisfaction at work. *Lancet* 347:724-728, 1996
- Shanafelt T, Novotny P, Johnson ME, et al: The well-being and personal wellness promotion practices of medical oncologists in the North Central Cancer Treatment Group. *Oncology (Karger)* 68:23-32, 2005
- Geurts S, Rutte C, Peeters M: Antecedents and consequences of work-home interference among medical residents. *Soc Sci Med* 48:1135-1148, 1999
- Linzer M, Visser MR, Oort FJ, et al: Predicting and preventing physician burnout: Results from the United States and the Netherlands. *Am J Med* 111:170-175, 2001
- Warde CM, Moonesinghe K, Allen W, et al: Marital and parental satisfaction of married physicians with children. *J Gen Intern Med* 14:157-165, 1999
- Visser MRM, Smets EMA, Oort FJ, et al: Stress, satisfaction and burnout among Dutch medical specialists. *CMAJ* 168:271-275, 2003
- Shanafelt TD: Finding meaning, balance, and personal satisfaction in the practice of oncology. *J Support Oncol* 3:157-162, 164, 2005
- Shanafelt TD, Bradley KA, Wipf JE, et al: Burnout and self-reported patient care in an internal medicine residency program. *Ann Intern Med* 136:358-367, 2002
- Firth-Cozens J, Greenhalgh J: Doctors' perceptions of the links between stress and lowered clinical care. *Soc Sci Med* 44:1017-1022, 1997
- Haas JS, Cook EF, Puopolo AL, et al: Is the professional satisfaction of general internists associated with patient satisfaction? *J Gen Intern Med* 15:122-128, 2000
- Linn LS, Brook RH, Clark VA, et al: Physician and patient satisfaction as factors related to the organization of internal medicine group practices. *Med Care* 23:1171-1178, 1985
- Lichtenstein RL: The job satisfaction and retention of physicians in organized settings: A literature review. *Med Care Rev* 41:139-179, 1984
- DiMatteo MR, Sherbourne CD, Hays RD, et al: Physicians' characteristics influence patients' adherence to medical treatment: Results from the Medical Outcomes Study. *Health Psychol* 12:93-102, 1993
- Melville A: Job satisfaction in general practice: Implications for prescribing. *Soc Sci Med [Med Psychol Med Sociol]* 14A:495-499, 1980
- Firth-Cozens J: Emotional distress in junior house officers. *BMJ (Clin Res Ed)* 295:533-536, 1987
- Bellini LM, Baime M, Shea JA: Variation of mood and empathy during internship. *JAMA* 287:3143-3146, 2002
- Cherny N, Catane R: Attitudes of medical oncologists toward palliative care for patients with advanced and incurable cancer: Report on a survey by the European Society of Medical Oncology Taskforce on Palliative and Supportive Care. *Cancer* 98:2502-2510, 2003
- Graham J, Ramirez A, Cull A, et al: Job stress and satisfaction among palliative physicians. *Palliat Med* 10:185, 1996
- McMurray JE, Williams E, Schwartz MD, et al: Physician job satisfaction: Developing a model using qualitative data: SGIM Career Satisfaction Study Group. *J Gen Intern Med* 12:711-714, 1997
- Levinson W, Linzer M: What is an academic general internist? Career options and training pathways. *JAMA* 288:2045-2048, 2002
- Gerrity MS, Pathman DE, Linzer M, et al: Career satisfaction and clinician-educators: The rewards and challenges of teaching—The Society of General Internal Medicine Career Satisfaction Study Group. *J Gen Intern Med* 2:S90-S97, 1997(suppl 12)
- Wright SM, Beasley BW: Motivating factors for academic physicians within departments of medicine. *Mayo Clin Proc* 79:1145-1150, 2004
- Wright SM, Kern DE, Kolodner K, et al: Attributes of excellent attending-physician role models. *N Engl J Med* 339:1986-1993, 1998
- Beasley B, Simon S, Wright S: A time to be promoted. *J Gen Intern Med* 21:123-129, 2005
- Hoover EL: Mentoring surgeons in private and academic practice. *Arch Surg* 140:598-608, 2005
- Linzer M, Konrad TR, Douglas J, et al: Managed care, time pressure, and physician job satisfaction: Results from the physician worklife study. *J Gen Intern Med* 15:441-450, 2000
- Beasley BW, Wright SM: Looking forward to promotion: Characteristics of participants in the Prospective Study of Promotion in Academia. *J Gen Intern Med* 18:705-710, 2003
- Levinson W, Branch WT Jr, Kroenke K: Clinician-educators in academic medical centers: A two-part challenge. *Ann Intern Med* 129:59-64, 1998
- Levinson W, Rubenstein A: Mission critical—integrating clinician-educators into academic medical centers. *N Engl J Med* 341:840-843, 1999
- Nathan DG: The several Cs of translational clinical research. *J Clin Invest* 115:795-797, 2005
- Nathan DG: Careers in translational clinical research—historical perspectives, future challenges. *JAMA* 287:2424-2427, 2002
- Goldstein JL, Brown MS: The clinical investigator: Bewitched, bothered, and bewildered—But still beloved. *J Clin Invest* 99:2803-2812, 1997
- Williams GH, Wara DW, Carbone P: Funding for patient-oriented research: Critical strain on a fundamental linchpin. *JAMA* 278:227-231, 1997
- Nathan DG, Wilson JD: Clinical research and the NIH: A report card. *N Engl J Med* 349:1860-1865, 2003
- Rosenberg LE: The physician-scientist: An essential—and fragile—link in the medical research chain. *J Clin Invest* 103:1621-1626, 1999
- Cech TR, Bond E: Managing your own lab. *Science* 304:1717, 2004
- Gabbard GO, Menninger RW: The psychology of postponement in the medical marriage. *JAMA* 261:2378-2381, 1989
- Shanafelt T, Adjei AA, Meyskens FL: When your favorite patient relapses: Physician grief and well-being in the practice of oncology. *J Clin Oncol* 21:2616-2619, 2003
- Catalan J, Burgess A, Pergami A, et al: The psychological impact on staff of caring for

people with serious diseases: The case of HIV infection and oncology. *J Psychosom Res* 40:425-435, 1996

46. Back AL, Arnold RM, Tulskey JA, et al: Teaching communication skills to medical oncology Fellows. *J Clin Oncol* 21:2433-2436, 2003

47. Baile WF, Buckman R, Lenzi R, et al: SPIKES—A six-step protocol for delivering bad news: Application to the patient with cancer. *The Oncologist* 5:302-311, 2000

48. Fleming VM, Schindler N, Martin GJ, et al: Separate and equitable promotion tracks for clinician-educators. *JAMA* 294:1101-1104, 2005

49. Atasoylu AA, Wright SM, Beasley BW, et al: Promotion criteria for clinician-educators. *J Gen Intern Med* 18:711-716, 2003

50. Beasley BW, Wright SM, Cofrancesco J Jr, et al: Promotion criteria for clinician-educators in the United States and Canada: A survey of promotion committee chairpersons. *JAMA* 278:723-728, 1997

51. Howard Hughes Medical Institute: Making the Right Moves: A Practical Guide to Scientific Management for Postdocs and New Faculty, in Institute HHM (ed). <http://www.hhmi.org/grants/office/graduate/labmanagement.html>

52. Myers MF: The well-being of physician relationships. *West J Med* 174:30-33, 2001

53. Clever LH: A checklist for making good choices in trying—or tranquil—times. *West J Med* 174:41-43, 2001



Appendix

The Appendix is included in the full-text version of this article, available online at www.jco.org. It is not included in the PDF version (via Adobe® Reader®).

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