Sources of Stress for Residents and Recommendations for Programs to Assist Them

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ABSTRACT

Bridging the gap between graduation from medical school and being board eligible in a medical specialty is a lengthy and arduous process. The fact that stress is typical during the residency training period is well-documented in the literature, as are its many situational, professional, and personal sources, which the author reviews: heavy workload, sleep deprivation, difficult patients, poor learning environments, relocation issues, isolation and social problems, financial concerns, cultural and minority issues, information overload, and career planning issues. Stress can also stem from and exacerbate gender-related issues and problems for significant others, spouses, and family members. The author also describes less commonly documented sources of stress—often overlooked or postponed so long that stresses are inevitable for all concerned. These are associated with residents who perform marginally and in some cases should not have been passed on from medical school, or who are studying specialties not compatible with their skills and personalities, or who foster severe interpersonal problems on the job. Common effects of stress include anxiety, depression, obsessive-compulsive trends, hostility, and alcohol and substance abuse.

To respond to the problems that these many stressors present to residents, the Accreditation Council for Graduate Medical Education (ACGME) requires that all post–medical-school medical training programs make assistance services available for all residents. The author outlines essential elements of an assistance program, states how important such problems can be in saving both residents and their institutions needless difficulties and costs, and presents important issues for the consideration of all involved in residents' training.

Administrative responsibilities, inadequate support from allied health professionals, too many difficult patients, and conditions for learning that are less than optimal.

- Personal stressors include family, who may be a source of support, but can also be a source of conflict and negative stress; financial issues, as many residents carry heavy educational debts, and many feel compelled to moonlight; isolation, frequently exacerbated by relocation away from family and friends; limited free time to relax or develop new support systems; psychosocial concerns, brought on by the stress of residency; and inadequate coping skills.

- Professional stressors include responsibility for patient care, supervision of more junior residents and students, difficult patients and problems, information overload, and career planning, which current health care changes make particularly challenging.

Stress, however, is a normal part of residency and can produce desirable effects such as tolerance of ambiguity, self-confidence, and maturity. Stress also may stimulate the acquisition of knowledge and skills.

**Internship Year**

Girard et al.\(^{14,15}\) tracked the course of the first year of graduate medical education (GME)—often called the “internship year”—in internal medicine, finding a fairly predictable progression of emotional experiences. The year begins with anticipation and excitement, rapidly followed by self-doubt and an awareness of realistic limitations. Depression may emerge, followed by a period of relative quiet, often characterized by stable uninteresting duties. By month six, depression may reappear as the schedule begins to feel oppressive and progress is not in sight. The greatest negative impact on the residents’ emotional affect repeatedly occurs in the middle of the internship year.\(^{16}\) During the last three months, progress and skill development are recognized, and a renewed burst of gratification and anticipation about upcoming new responsibilities is experienced.

**Normal Stress**

Toews et al.\(^{16}\) surveyed and compared 216 medical students, 279 residents, and 167 MSc–PhD students on the social readjustment rating scale (SRRS)\(^ {17}\) to measure external stressors, based on the amount of change an individual had to adapt to in the previous year. Participants were also compared on the Symptom Check List 90 (SCL-90-R),\(^ {18}\) with which stress-related symptoms are measured. The students were compared among groups, as well as with a norm group, and comparisons were also made between the men and the women.

Results on the SRRS showed that the residents had only slightly elevated scores compared with the norm group, indicating a slightly increased risk for developing some form of illness within the following year as the result of increased stress. Women scored significantly higher on the SRRS than did men.

The residents’ mean scores on the SCL-90-R indicated somewhat higher levels of perceived distress compared with the norm group on a number of stress-induced behaviors (see examples below). Women scored higher on the SCL-90-R than did men on many of these behaviors. For example:

- On the anxiety scale, men scored .46, women, .59.
- On somatization, men scored .33, women, .48.
- On depression, men scored .74, women, .99.
- On obsessive–compulsive behavior, men scored .81, women, .89.
- On interpersonal sensitivity, men scored .72, women, .81.
- On hostility, men scored .50, women, .54.
- On phobic anxiety, men scored .09, women, .13.
- On paranoid ideation, men scored .44, women, .48.
- On psychotic behavior, men scored .31, women, .26 (here, men scored higher than women).

As shown in the above list, the women scored significantly higher than did the men (\( p < .05\)) on the anxiety, somatization, and depression scales. On a stress questionnaire, the women also scored significantly higher than the men did (\( p < .05\)) on the dimension of stress whose source was self-expectations that were too high.

**Beyond Normal Stress**

At what point along the continuum of stress does the level of a resident’s experienced distress shift into the manifestation of impairment? “Impairment can be defined as a state wherein the resident’s ability to care for self or others, particularly patients, is hampered because of stress, emotional illness, or substance abuse.”\(^ {19}\) Small\(^ {20}\) described seven features of house-officer stress syndrome, four occurring in most residents and the remaining three being more suggestive of serious impairment. The four dimensions are episodic cognitive impairment (due primarily to sleep deprivation), chronic anger, pervasive cynicism, and family discord. The dimensions indicative of the more severe conditions are depression, suicidal ideation and suicidal behavior, and substance abuse.

**Depression and suicide.** Severe depression as a single dimension impairing a resident is hard to isolate and document with hard numbers. When suicide becomes part of the picture, statistics are available. A historical review of the literature reports overall physician suicide rates to be between
28 and 40 per 100,000.\textsuperscript{21} Suicide rates of white men over 25 in the general population were reported to be 31 per 100,000,\textsuperscript{23} suggesting fairly similar rates. Differences reported historically between male and female physicians were not that major either. One study reported 40.5 per 100,000 for female physicians\textsuperscript{23} versus 38.3 per 100,000 for male physicians; 40.3 versus 38.1 was reported in another study.\textsuperscript{24}

Cameron Johnston Watel,\textsuperscript{25} of the American Medical Association (AMA), presented research findings that indicate 48 physicians practicing in the United States (46 men and two women) committed suicide between 1991 and 1993. These figures include only suicides reported to the AMA. These figures are not terribly impressive when you consider that 12,500 U.S.-based physicians died of natural causes during the same period. According to Watel, the physicians who took their own lives were spread evenly over four age groups: 30–43, 43–54, 55–70, and 70-plus. Only four had been or were currently being investigated by their state medical boards.

The AMA–APA Counsel on Scientific Affairs\textsuperscript{21} has developed a profile of the suicide-prone physician. The characteristics of physicians that their research disclosed to be suicide risk factors were:

- having an awareness of emotional problems and possibly seeking treatment;
- being in treatment;
- having a desire to escape mental pain;
- being depressed;
- having a history of physical and mental health problems;
- having a history of drug abuse, including self-prescribing;
- having social problems related to alcohol; and
- having a difficult childhood and a troubled family of origin.

Substance abuse. Hughes et al.\textsuperscript{9} found alcohol was the most widely used substance accessed by all residents. More than 90% in each specialty reported use in the past month. Baldwin et al.\textsuperscript{26} compared medical students and physicians with the U.S. population at large and found that the rate of heavy drinking of medical students and young physicians (under 30) was one third that of the U.S. population at large. Rates of alcohol consumption go up among physicians after age 60, while the general population's rates go down after that age.\textsuperscript{27} Another study, by McAuliffe et al.,\textsuperscript{28} of medical students and physicians found that only 4% of both men and women qualified as alcohol abusers on the primary basis of having had a past drinking problem.

A family history of alcoholism appears to be the consistent predictive factor of alcoholism among both physicians and the general population.\textsuperscript{29–31} Additional factors cited as correlating with physicians’ alcohol-related problems include a narcissistic personality style; perception of low parental warmth in childhood; and medical school when the medical working environment is one of sleep deprivation, heavy work demands, and inadequate social supports.\textsuperscript{32}

Physicians appear to respond more favorably as a group to substance abuse problems than does the general population.\textsuperscript{33} due, perhaps, to required careful follow-up monitoring and the severe consequences of continued use (i.e., loss of state license and hospital privileges). Because no two physicians are identical, each case presents unique challenges in identification and treatment.

Hughes et al.\textsuperscript{9} reviewed resident physicians’ substance abuse by specialty in 1991. Data were drawn from a national survey of 15,814 U.S. physicians in their third year of residency. Of 3,000 residents randomly selected from the larger group, 1,785, or 60%, responded. Distribution rates among respondents reflected the actual distribution of residents in specialty programs for the year surveyed. Drug use rate by specialty was compared with the rates of all others combined. Results can be viewed in Figure 1.

Common Sources of Stress for Residents

Gender differences. Women tend to report higher levels of stress reaction to residency than do men. Isolation and anxiety related to role stress,\textsuperscript{34} and problems balancing a family and a career\textsuperscript{35} are examples cited. Chadorow\textsuperscript{36} proposes that women tend to find definition through interpersonal relationships and attachments. The residency experience does not always promote such relationships. Firth-Cozens\textsuperscript{39} observes that female residents experience prejudice\textsuperscript{40,41} emanating from patients and other staff, and from nurses in particular. Elliot and Girard\textsuperscript{42} relate the elevated depression and loneliness that female residents experience to having to function in a male-dominated profession, having few role models, and being out of “synchrony” with female peers in general as they pursue training and delay childbearing. The first postgraduate year makes it clear that medicine is not organized in a way that allows female physicians part-time opportunities without affecting their final career plans.\textsuperscript{39} Consequently, female residents face professional demands that may conflict with personal goals, demands that their male counterparts do not face.

Pregnancy and residency. As the number of female house officers rises, the number of pregnancies during residency is also increasing. Phelan\textsuperscript{42} studied sources of stress and support for pregnancy during residency training. Her study of 1,197 obstetrics–gynecology, psychiatry, and surgery residents found that 31% of the female physicians sampled had experienced pregnancy during residency. Fatigue from frequent call and long hours, too little time for the spouse or partner, too much physical activity, and emotional strain were found
Figure 1. Third-year U.S. residents’ use of benzodiazepines, opiates, and amphetamines during 1991 (top panel) and their use during that year of alcohol, marijuana, cocaine, and psychedelics (bottom panel). Data are from 1,785 residents, whose distribution rates among their specialties were representative for the year they were surveyed. Adapted from Hughes et al. Resident physician substance use, by specialty. Am J Psychiatry. 1992;149(Oct):10. Used with permission.
to be sources of stress. Female medical staff were perceived to be supportive, while male counterparts were seen as neutral at best. Ninety percent of the women in the sample had worked until delivery or scheduled maternity leave. The first year of residency was regarded as the most stressful time to be pregnant. Uniformly, these women had used vacation, sick leave, or leave without pay to cover their missed time.

Similar results were found in a study of family practice residencies. Only 56% of the women surveyed were aware of their programs’ having a written maternity leave policy. Factors that detracted most from childbearing were too little sleep, problems arranging child care, and lack of support from the partner, faculty, and other residents.

**Stress from residents’ families.** The requirements of a “significant other” or marriage and family can bring additional pressures to an already overwhelmed individual. Little research has been conducted solely on “significant other” partners of residents. When cited in the literature, significant others are generally lumped together with spouses. Arnold et al. studied the effects of partners and found, regardless of marital status, the partner was the most influential person in the choice of residency. Female physicians, however, had less influence over the decision and were more likely to sacrifice their needs for their partners. On the other hand, Riley et al. found that a reluctant spouse or partner posed an important problem for rural communities in effectively recruiting physicians once they had completed their residencies. Other studies, however, have found that a spouse or partner was an important source of support in surviving the stresses of residency.

Surveys have shown the divorce rate of physicians is lower than the national rate, but the amount of conflict, instability, and dissatisfaction is significantly higher. Certain specialties (i.e., orthopedic surgery, psychiatry) have much higher rates of divorce, and female physicians are reportedly much more prone to divorce than are male physicians. Estimates suggest that two thirds or more of interns and residents are married, indicating the need for training programs to recognize marital stressors as an important issue.

Roy Menniger contended that physicians work hard to prove their self-worth and take care of others, but have never learned how to have intimacy and receive support from others for themselves. Dr. Menniger contended physician marriages were subsequently particularly troubled. More recent studies found that 85% of physicians, dentists, and their spouses all scored in the good or fair range on the Marital Relationship Inventory. Almost nine out of ten physicians and spouses said they would marry the same person again.

A potential complicating factor is the emergence of the “dual-doctor marriage.” An estimated 40,000 physicians in the U.S. are married to other physicians. Advantages to such unions may include the ability to empathize, acceptance of sleep deprivation, and tolerance of frequent leisure-time interruptions. Disadvantages may include deciding who makes sacrifices for the other’s career, how mundane chores are divided, and how to provide child care and still preserve time for the marital relationship.

**Financial issues.** Acquired student-loan debt is another significant pressure faced by residents. For example, in 1999, only 20% of the indebted graduating U.S. medical students owed less than $50,000. A total of 39% owed $50,000–$99,999; 26% owed $100,000–$149,999, and 13.9% owed $150,000 or more. In recent years this problem has intensified because of several factors: increasing medical school tuition, longer training periods, and more stringent terms for federally subsidized loan repayment. Furthermore, since July 1, 1993, the federal Health Professions Student Loan Program stopped automatically making available loans of up to $2.5 million to students choosing non–primary-care specialties. Additionally, the emergence of managed care has tended to decrease physicians’ salaries, handicapping their ability to pay off debt. Medicare cuts have not enhanced the ability of hospitals to increase residents’ salaries.

Because of these and perhaps other factors as well, the average amount of medical school debt per student has climbed 5–7% each year, and up to 10% each year for those attending private medical schools. This trend exceeds tuition increases and outpaces recent low inflation rates. Adding fuel to the fire, the borrowing process has been streamlined, some loans have been made more available, and interest rates are low,” thus creating concerns about unmanageable debt loads and career path decisions.

**Minority and cultural issues.** Current figures indicate that 97,383 resident physicians were enrolled in specialty or combined specialty GME programs accredited by the Accreditation Council for Graduate Medical Education (ACGME) as of August 1, 1998. Twenty-six percent of these residents had graduated from non-U.S. medical schools, and 43% were classified as other than white (not including Hispanic residents). This trend toward diversity will continue, since it has been projected that by 2010, the U.S. minority population will have increased by 60%. American-born members of that population (i.e., black non-Hispanic, Native American, Alaskan native, Mexican American, Puerto Rican, other Hispanic, Asian/Pacific Islander, and others) will continue to make up an important and significant percentage of U.S. residents. These individuals bring unique perspectives and experiences that enrich the educational process, but also may cause some to experience added stressors. Another contribution to the diversity of U.S. residents is made by the annual arrival of international medical graduates (IMGs), many representing the cultures of the countries in
which they were trained. These physicians also bring much that is enriching, but, inevitably, stressors typically emerge as a result of language difficulties and cultural differences (e.g., customs, attitudes toward authority, attitudes toward men, attitudes toward women, religion, etc.).

The AAMC's Division of Medical Education in 1997 began a project to develop programs for medical schools to develop skills in cultural awareness and competence. The goal was to provide doctors with the essential skills needed to provide high-quality health care to diverse patient populations. These courses attempt to increase awareness of one's self and value system, and to foster an understanding and ability to deal effectively with cultural issues. Residency programs would be prudent if they also offered cultural awareness instruction not only to promote patient care, but also to foster understanding and communication among residents and faculty, and to improve the teaching process in those situations where the resident who is teaching is from a different culture or subculture than that of his or her students. Cooperation with the residency institution's office of diversity could further support these endeavors.

**Touchy Issues That Must be Faced**

To this point, I have reviewed many commonly seen and documented stress-related issues that residents experience and institutions must face. Let me now describe some additional problems that are also common but less well documented and, therefore, easier to misidentify early on. The examples I have given below concern residents' deficits in such areas as interpersonal skills, personality development, clinical skills, and academic skills, and also cultural issues. Regardless of their origins, these deficits and cultural issues inevitably give rise to significant stress to the residents who exhibit them. Advance knowledge by faculty, the director of the residents' assistance program, and the GME committee of what to look for and how to document and respond will substantially reduce disruptive effects on the resident and, in some cases, on the institution as well.

**The marginal resident.** One not so uncommon problem is the resident who was acceptable, although somewhat marginal, in medical school. He or she was passed on, perhaps inappropriately, and entered a residency. It soon becomes evident to the residency faculty that gaps are present in this individual's knowledge base and/or clinical judgment. I have observed this to occur more frequently in residents who show up in transitional-year programs. These individuals often are unable to decide what specialty to go into or are unable to match to a categorical position. Academic and clinical deficits become apparent, sometimes including spotty clinical judgment skills, although interpersonal or personality deficits may or may not be present. Performance is often adequate for such residents to barely pass academically, but problems of what to do to bring them up to standard inevitably must be faced.

The solution to this problem is rarely simple, but several common mistakes are often made. First, faculty need to be aware of this phenomenon up front, so it can be spotted quickly and addressed before the ninth or tenth month of residency. All too often these residents get marginal evaluations, but the faculty, unaware as a group, do not put together what is happening. Subsequently, diagnosis of the resident's difficulties and development and implementation of a plan of action do not occur until late into the academic year. This is not kind to the resident, who is stressed along the way and who becomes more stressed when faced with the prospect of no placement the next year and a marginal academic review.

Unfortunately, medical schools may be remiss, since they sometimes pass on these problems to GME programs rather than dealing with them during the medical school years. One way for the director of the residents' assistance program to spot marginal residents is to make sure all potential first-year residents have passed Step 1 and Step 2 of the United States Medical Licensing Examination before admission to the internship year.

Sometimes these individuals will claim, after being identified as problematic, that they possess a diagnosed learning disability or have attention deficit disorder. It is best to ask all applicants before admission if any such problems exist. If they are claimed, the institution must show efforts to accommodate residents with such learning disorders to assure that the residents have every chance to succeed. However, once such a resident is accommodated, he or she must successfully meet the essential requirements and standards of the program to complete the residency.

**The mismatched resident.** Another not uncommon type of resident is the individual who ends up in a specialty program for which he or she is not well suited. Surgery is a common example. Some individuals who gravitate to surgery have strong academic records, but may lack mechanical and spatial-relationship skills, as well as the personality best suited to the unrelenting schedule required by surgery. Frequently, individuals who are in the wrong specialty perform marginally acceptably or are unnoticed in the first year, only to be identified as problematic in the second or third year. Once residents of this type have finally been referred to me in my role as director of the residents' assistance program, subsequent interviews and psychological testing have shown that their natural abilities and personalities do not match well with those of their peers in the chosen specialty. In my experience, once such mismatched residents transfer into areas more matched to their skills and attitudes, they frequently perform better and are much happier and less
stressed. Unfortunately, the difficulties of such residents are not picked up by faculty early enough.

**The disruptive resident.** Most residency directors can tell you about residents who are competent academically and clinically, but interpersonally create all kinds of disruption. They have an uncanny ability to upset attendings, fellow residents, nurses, other staff, and even patients and their families. Some have problems getting along with authority; some annoy persons of the opposite sex; some will not answer their beepers. Because their clinical competency appears to be acceptable, or even good, the problem behaviors are ignored, or poorly documented until a critical mass of dissatisfaction finally moves faculty to conclude something must be done. I have been struck by with how many attendings have significant difficulty confronting residents about their poor interpersonal behaviors.

**The IMG resident with difficulties.** Another common issue is the international medical graduate (IMG) whose license exam scores and training experiences look good, but who, once placed, exhibits various difficulties, including problems of performance. Language deficits, cultural differences, and uneven knowledge-base development emerge as obstacles not anticipated during the admission process. All too commonly the faculty will observe such residents’ deficiencies, and uneven knowledge-base development emerge as obstacles not anticipated during the admission process. All too commonly the faculty will observe such residents’ deficiencies, but will not document them well in monthly rotation evaluations, or will not talk about them until a residency review meeting months into the academic year. Addressing these concerns early is obviously much kinder to the resident, allowing remediation before it is too late.

**Recommendations for an Effective Residents’ Assistance Program**

In light of the several sources of stress that can affect residents, I would like to offer several recommendations to assure the viability and effectiveness of programs that medical schools and/or teaching hospitals may design to assist residents in coping with stress.

**Characteristics and Responsibilities of the Director**

The director of an institution’s residents’ assistance program should be a well-trained and licensed clinician with a solid background in and knowledge of residents’ needs and vulnerabilities, as well as of the issues involved in residency training. This individual also should be firmly entrenched in his or her training institution’s graduate medical education committee and function as an integrated team member. This allows the director to remain current on issues and goals of the institution, national policies, requirements, and trends. He or she can then effectively offer input to and receive input from the GME committee on key issues so that a coordinated series of relevant services may be provided. The director should not have responsibility for evaluating residents’ academic performances, as this would pose a potential conflict of interest to the role.

**Elements of a Residents’ Assistance Program**

(Organizational Issues)

Assessment should be among the clinical services offered by the program, and should consist of interviews, but may also include psychological testing, which may be valuable for clarifying why a resident isn’t performing, or for ruling out the presence of depression, substance abuse, or problems in thinking.

**Short-term counseling** should be available to the resident and his or her family members. When problems appear to be more complicated (i.e., serious psychopathology, substance abuse, complex marital problems, or simply the need for longer-term intervention), an outside network of providers should be in place for referral.

**Follow-up services** should be offered by the residents’ assistance program for as long as needed. Some residents need periodic support. Others require monitoring. Some residents seen regularly outside the system may need verification of their continued involvement in required outside treatment to assure their ability to be providing health care services at the training site.

**Referral.** Voluntary referral by the resident is always the preferred method. But supervisory (i.e., non-voluntary) referral often occurs in cases of disciplinary action and/or suspected substance abuse or serious emotional impairment. Problems with authority, interpersonal skill deficiencies, failure to acquire knowledge and practice skills, to cite examples, may lead to action on the part of the residency director. In such cases, referral is strongly recommended, and may, when appropriate, be on a voluntary and confidential basis. In the case of verified or suspected substance abuse and/or significant emotional impairment, a non-confidential interview may be mandatory. Results and recommendations will be shared with the program director.

**Confidentiality** is preferred, when possible, and should be seriously maintained. In cases where confidentiality must be limited, only the most pertinent information should be shared on a need-to-know basis with the key person(s) involved.

**Educational and training components** should be provided as part of the residents’ assistance program. The director of the assistance program should coordinate with GME committee personnel and the directors of the various residency specialties in planning and providing training activities, which may include social activities, retreats, support groups for residents’ spouses/partners, seminars on relevant topics, the facilitation
of child care services, and referral to financial advisors, to name a few possibilities.

All records should be kept confidential in a locked file in a non-centralized location that should be accessible only to the director of the assistance program and, when appropriate, to key GME staff.

Legal Issues

Boote developed guidelines to avoid legal problems that may result from a number of slippery slopes that commonly occur in the residents’ assistance domain. Boote maintains that legal problems are avoidable, so long as reasoned academic judgments are documented and disciplinary actions follow formal due process. Provision of due process to the resident before taking adverse action virtually protects the institution from a successful suit. Due process requires only an informal structured conference.

The resident’s file should include evaluative judgments. Negative reviews should be addressed early. Inconsistent evaluations should be resolved with a clear conclusion. Residents should be informed early about judgments and expected performance in writing, and expectations should be enforced. In cases of misconduct, psychiatric problems, or substance abuse, careful documentation is essential. Legal counsel should be consulted prior to drug testing, psychiatric evaluation, or significant investigation. Drug testing and/or psychiatric evaluation can generally be mandated when problems of safety or unsatisfactory performance are judged to be present.

Cost Issues

One complaint institutions may raise is that a strong residents’ assistance program is an expense their tight budgets need to keep to a bare minimum. Consequently, some programs are not as well staffed with professionals knowledgeable about complicated residents’ issues, nor are they integrated with the institution’s residency programs and GME committee or adequately introduced and made accessible to the residents and their families. I would argue that the costs are not that high on the front end, but without a strong program, the costs will certainly be much higher on the tail end after problems emerge. Additionally, many stressors that could have been avoided might not be, and no one wants that scenario.

**Final Thoughts**

Enlightened support from GME staff can greatly reduce physicians’ anxieties and help them accomplish their educational goals and transition to practice. A successful residents’ assistance program reduces stress for the resident and his or her family or significant other; facilitates an optimal environment for professional growth and long-term well-being that survives long after residency training is completed; facilitates successful conflict resolution; and assures the protection and safety of patients.

**REFERENCES**