REVIEW

The Challenge of Problem Residents

David C. Yao, MD, MPH, Scott M. Wright, MD

Internal medicine residency training is demanding and residents can experience a wide variety of professional and personal difficulties. Residency programs everywhere have had and will continue to have problem residents. Training programs should be equipped to effectively identify and manage residents who experience problems. Previous articles that have been published on the topic of problem residents primarily addressed concerns such as impairment due to depression and substance abuse. The content of this article is derived from a comprehensive review of the literature as well as other data sources such as interviews with program directors and workshops at national professional meetings. This article focuses primarily on four issues related to problem residents: their identification, underlying causes, management, and prevention. The study attempts to be evidence-based, wherever possible, highlighting what is known. Recommendations based on the synthesis of the data are also made. Future ongoing studies of problem residents will improve our understanding of the matters involved, and may ultimately lead to improved outcomes for these trainees.

KEY WORDS: **medical education; internship; residency; problem resident.**
J GEN INTERN MED 2001;16:486–492.

The American Board of Internal Medicine (ABIM) defines a problem resident as "a trainee who demonstrates a significant enough problem that requires intervention by someone of authority, usually the program director or chief resident."[1] Problem residents are ubiquitous (present in 94% of internal medicine residency programs during the academic year 1998–1999) and are moderately prevalent (7% of internal medicine residency trainees).[2] They can be found in all types of residency training programs—large and small, community-based and university-affiliated, psychiatric and surgical. Problem residents are challenging to the residency program directors, attending physicians, and often their fellow trainees. They can threaten the integrity of a training program and can negatively influence the residency training experience for other trainees.[3–5]

The goal of an internal medicine residency program is to train and prepare newly graduated medical students to become competent internists. Since 1972, the ABIM has relied on residency programs to evaluate the readiness of eligible candidates for certification. Accordingly, attempts have been made to standardize resident evaluation at the program level. After the identification of a problem resident, program directors often have to help facilitate the successful remedy of the problem in order to recommend the resident for promotion, graduation, and certification.

This report may help to provide a better understanding of the issues related to problem residents, thereby supporting residency program directors, medical educators, and residents themselves. This article reviews the literature, and provides perspectives and recommendations from other sources to comprehensively examine four vital issues related to problem residents: identification, underlying causes, management, and prevention.

METHODS

Literature Search

Databases, including MEDLINE (years 1966–2000), PsychINFO (1977–2000), ERIC (1966–1999), and HealthSTAR (1975–2000), were searched using and combining the MeSH terms "Internship and Residency" and "Medical-Residency" with (1)"Drug Abuse/Addiction/Dependency/Usage," "Alcohol Abuse/Alcoholism" (yield, 27 articles), (2) "Stress," "Occupational Stress," "Stress Management," "Coping Behavior" (yield, 109 articles), and (3) "Behavior Problems," "Psychological Phenomena," "Mental Disorder," "Depression," and "Affective Disturbances" (yield, 101 articles). A search of these databases for articles containing the textword "problem resident" or "resident in difficulty" was also performed. The bibliographies of the retrieved articles were also examined for relevant articles. Abstracts of articles were reviewed and selection criteria included English language and studies involving issues related to resident welfare. Excluded were editorials and studies reporting on residencies outside of North America.

Received from the Division of General Internal Medicine, Johns Hopkins Bayview Medical Center and the Johns Hopkins University School of Medicine, Baltimore, Md.

Address correspondence and reprint requests to Dr. Wright: Division of General Internal Medicine, Johns Hopkins Bayview Medical Center, 4940 Eastern Ave., Baltimore, MD 21224–2780 (e-mail: smwright@jhmi.edu).

Additional Sources of Information

Other resources, including (1) "Chief Residents' Workshop on Problem Residents" organized by the Association of Program Directors in Internal Medicine, (2) a workshop entitled "A Systematic Approach to the Problem Resident" at the 1999 Society of General Internal Medicine National Meeting, and (3) the ABIM's Guide to Evaluation of Residents in Internal Medicine, have also been incorporated in this manuscript.[1,6–8] To our knowledge, no other information has been published.

To gain additional perspective and insight, 45-minute focused interviews with six internal medicine program directors (three university-based and three community-based programs) in Maryland were conducted. The interviews were structured around open-ended questions dealing with the prevalence, identification, management, and outcomes of problem residents in their internal medicine residency programs. The interviews were audiotaped and transcribed.

The authors' perspectives, which have been influenced by reading the published literature, attending the workshops, and interviewing the regional program directors, are also presented in several sections of the manuscript.

RESULTS

Results of Data Collection

Using the searching strategy stated above, 266 citations were identified. The majority of manuscripts were thought pieces with few empiric studies. Almost all studies were surveys. After reviewing the titles and abstracts, 96 citations met our inclusion criteria and were noted to be relevant. These articles were retrieved and reviewed. Fifty-nine articles contained pertinent information germane to one of the topics covered in this review and are referenced throughout this paper. Of these, 33 were surveys in which questionnaires were given to the house officers, 4 papers described interventions that were developed to have an effect one of the underlying causes, 14 were review papers, and 8 manuscripts could be classified as perspective pieces. The first 8 references[1–8] explore various issues related to problem residents, including their identification, some of the possible underlying causes, and potential management strategies. The other manuscripts focus largely on one of the underlying causes (e.g., depression or substance abuse), often describing its prevalence among a cohort of house officers as well as some suggestions for the identification or management of the problem.

Other data, including the interviews, workshops, and guidelines, were complementary and largely consistent in their views and approaches to identification, discovery of underlying causes, and management of problem residents. In the manuscript, statements that are not referenced come from these additional sources of information combined with the authors' perspectives.

Terminology

Problem residents usually manifest difficulties in one or more of the ABIM's seven areas that relate to clinical competency: clinical judgment, medical knowledge, clinical skills, humanistic qualities, professional attitudes and behavior, medical care, and moral and ethical behavior.[1] Various terminology, such as "resident in difficulty" or "impaired resident," have been suggested as substitutes for problem resident, in the hopes of eliminating pejorative connotations related to the latter term; however, the proposed alternatives may also be viewed as disparaging. Problem resident is the term commonly used and specifically defined. "Resident in difficulty," while perhaps less pejorative, has no commonly accepted definition. "Impaired resident" often connotes substance abuse. In this review article, we will use the term "problem resident" to describe a resident with a performance deficiency in at least one of the seven areas of clinical competencies that the ABIM evaluates that is not corrected after a single intervention.

Prevalence

Very little data are available on the prevalence of problem residents within internal medicine residencies. The ABIM, through on-site visits, has estimated that eight to fifteen percent of residents have serious problems.[8] Tracking data of first year residents by the ABIM in 1993 revealed that while four percent were unsatisfactory or marginal, fourteen percent of the "satisfactory" residents left the training program.[6] This dropout rate raises the question of whether some of the "satisfactory" residents may have experienced significant difficulties. A recent study that surveyed internal medicine program directors found a point prevalence of seven percent during academic year 1998–1999 in internal medicine residency programs.[2] The 6 internal medicine residency program directors interviewed believed that the prevalence of problem residents has remained stable during recent years.

Identification

In the aforementioned study, program directors stated that problem residents half the time or more frequently had insufficient medical knowledge (48%), poor clinical judgment (44%), and inefficient use of time (44%). The most frequent processes by which problem residents were discovered included direct observation (82%) and critical incidents (59%). Chief residents and program directors most frequently identified the problem residents (84% and 74%); problem residents rarely come forward themselves (2%).[2]

No other empiric data are available in the area of identification, and the following is a compilation of material from workshops, interviews, and the authors' perspective. Attending physicians who work closely with the residents during month-long rotations also commonly identify problem residents. Thus, it is important for attending

physicians to complete and return evaluations in a timely fashion, and to communicate with the program director in person any concerns they have about an individual resident. Advances in technology, such as computer-assisted blinded evaluations, may improve the return rate and quality of written evaluations.[9] Other ways in which problem residents are routinely noted or discovered are listed in Table 1.

The program director is usually the contact person for other faculty members when a problem resident is identified. A policy of accessibility of the program director to the faculty may facilitate early notification. Regularly scheduled "clinical competency committee" meetings attended by the program director and several core faculty members are also perceived as helpful. In overseeing resident performance, the committee functions as a check and balance to the program director, serves as a forum for discussion and problem-solving, and recommends specific courses of action. This system permits the program director to serve as the main coordinator of evaluations, while relieving him or her of the sole responsibility for analysis and intervention.

While a single "critical incident" sometimes suffices to put a resident into the problem resident category, the interviewed program directors believed that a sequence of less serious events pointing to the pattern of poor performance or deficiency is more common. It has thus been recommended by the program directors and in workshops that once deficiencies are noted, close observation and follow-up are necessary and critical.

After a trainee has been identified as a problem resident, it is the responsibility of the residency program to discover the cause for the suboptimal performance. The first step involves data collection. It is recommended that the program director meet with the parties involved (i.e., resident and attending-physician) to flush out the facts and the different points of view. The second step relates to assessment. The program director should determine the gravity of the situation, focusing both on the individual resident and the impact on the residency program. It is preferable for the problem resident and the residency program to collaborate in order to come to a mutual understanding of the issues involved, rather than interact antagonistically. The program director should keep in mind the possibility that the problem may not rest solely on the resident, but may be a function of the residency program.

Table 1. Methods by Which "Problem Residents" Can Be Identified

- Direct observations in clinical setting
- Critical incident
- Monthly evaluations (written and verbal)
- Chart review/medical record audit
- Reports from nurses or patients
- Videotaped interview
- Standardized patients
- Clinical evaluation exercise (CEX)
- In-training exam
- Poor performance at morning report or conferences
- Resident's significant other or family
- Resident him/herself

Potential barriers to more effective resident performance such as cultural differences in philosophy and expectations, language difficulties experienced by some international medical graduates, and gender-specific issues (such as pregnancy) warrant consideration.[10–14] Racial and gender discrimination have been described in residency training programs, and program directors need to be cognizant of these findings and be intolerant of any such prejudice or unfairness.[15,16]

Underlying Causes

It is important to consider underlying causes that may be contributing to the resident's poor performance. They can be conceptualized and classified into five categories: 1) behavioral issues such as those related to professionalism, 2) medical conditions including psychiatric illness, 3) difficulty coping with stress, 4) substance abuse, and 5) cognitive issues such as inadequate knowledge base or learning disabilities (about which there is no evidence).

Professionalism in medicine has been defined as "serving the interests of the patient above one's own interest. Professionalism aspires to altruism, accountability, excellence, duty, service, honor, integrity, and respect for others."[17] The ABIM describes professionalism as "a commitment to the highest standards of excellence in the practice of medicine and in the generation and dissemination of knowledge; to sustain the interests and welfare of patients; and to be responsive to the health needs of society."[18] While there is little evidence about the best way to teach professionalism to residents or the optimal methods for dealing with a resident with a deficiency in this area, role modeling by faculty and resident colleagues is believed to be important.[19–21]

Emotional impairment, including depression and post-traumatic stress disorder symptoms, is not uncommon during residency.[22–29] A national survey of internal medicine program directors showed that between 1979 to 1984, 56% of training programs granted leaves of absence to residents because of emotional impairment, with 1% of house staff requiring a leave of absence.[23] Twelve percent of those granted leave required psychiatric hospitalization, and 2% underwent chemical dependency programs. Most affected residents recovered with 79% continuing in medicine, but 10% dropped out of the profession; 5% attempted or committed suicide. Valko and Clayton conducted psychiatric interviews with 54 residents who had completed internships in medicine, surgery or pediatrics, and found that 30% had suffered significant depression during internship.[24] Four of the 16 interns had suicidal ideation, and three of them had suicide plans. Only one of the depressed interns consulted a psychiatrist. In another study of 124 interns and residents of all specialties in one hospital, Ford found that 33% of interns and 13% of

residents suffered depression or psychological distress.[25] Similarly in a study involving 88 medical housestaff, Reuben found a prevalence of depressive symptoms in 29% of first year residents, 22% in the second year, and 10% in the third year.[26] Hsu and Marshall surveyed over 2,000 Canadian housestaff, and 23% had some degree of depression and emotional distress.[27] Thus, depression or depressive symptoms were noted in about a quarter of medical residents and seemed to decrease in prevalence in later years of training.

The stresses of residency training, both physical and mental, can contribute to poor performance in some residents.[30–43] These stressors have been broken down into three domains with considerable overlap—situational, personal, and professional.[31] Examples of situational stress include starting a new job, moving to a new environment, and sleep deprivation. Family situations (e.g., marriage, parenting) or financial issues (e.g., educational debts) are examples of personal stresses. Landau et al. surveyed 108 residents and fellows in internal medicine and found that over 40% experienced problems with their spouse or partner, with 72% of them believing that the stress of residency was a contributing factor.[32] Professional stressors can include complex medical situations, difficult patients, and career planning issues. Residents have noted that factors such as excessive workloads, chronic fatigue, and frequent on-call responsibilities contribute to their lack of psychological well-being.[36] It has been found that teaching housestaff coping skills and stress management can reduce their perceived level of stress.[44–47]

Psychiatric counseling is often underutilized in treating residents in psychological distress.[48] It is recommended that the content of the counseling be kept confidential. The program director only needs to know if the resident is participating, whether the resident is fit for duty, and conditions of readiness for return to work. Residents' health insurance should cover the counseling sessions' fees; off-campus counseling sites and personnel are preferred in order to maintain confidentiality and prevent awkward working relations.

Substance abuse by residents has been relatively well studied.[49–60] Risk factors for the development of substance abuse during residency training can be separated into factors inherent to the trainee (e.g., personal or family history of substance abuse, psychological vulnerability) and those that come into being during the training (e.g., heavy work load, stress, limited control, inadequate social support).[49] The detection of substance abuse can be difficult. A survey of emergency residency program directors has demonstrated a discrepancy between the number of residents suspected of having an alcohol problem by the program directors (1%) and the number of residents with a CAGE score consistent with alcoholism (12.6%).[56] The American Medical Association reported in 1973 that impairment rates among physicians ranged from 2.3% to 3.2% for alcoholism and from 0.9% to 2% for other substance abuse.[57] In a national survey of a random sample of residents in United States, alcohol was found to be the most commonly used substance of abuse with 5% reporting daily use; marijuana was used by 0.3% on a daily basis; whereas 3.7% reported using benzodiazepines and 1.4% reported using cocaine within the last month.[58] While resident physicians have a lower rate of substance abuse compared to their nonphysician age-matched peers, use of benzodiazepines and prescription opiates is higher and often begins during residency training when the privilege of prescribing is conferred.[52,59] In a study by Jex et al. self-prescribed benzodiazepines were associated with the perceived stresses of residency training.[60]

Management

The circumstances and the nature of the problem dictate the appropriate remedial actions. Acknowledgement and attempts to resolve any underlying causes should be addressed first. Ideally, the intervention will focus specifically on the problem, and a well-defined plan can be outlined with the resident's input and participation. The process should have an established time-line with measurable goals, and a well thought-out evaluation with clear consequences for failure to improve. Follow-up and decision making are vital steps in the evaluation process to ensure that the resident has met the expectation and objectives. Possible outcomes for a given resident include advancement and promotion without consequences, additional training, leave of absence, reduced duty until problems are resolved, nonrenewal of contract, or immediate dismissal. It is important for the program director to also consider the issues of fairness and morale of other house officers, when deciding upon the optimal course of actions. It is thought to be detrimental if problems are either not addressed or unfairly punished. Another difficult decision is whether the time during the remedial process should be counted towards the completion of the residency training.

In our recent study, program directors believed that frequent feedback sessions (65%) and an assigned mentor for structured supervision (53%) were the two most helpful interventions.[2] Some authors have hypothesized that the strategies implemented to support the well-being of house officers[61–63] (see Early Detection and Prevention and Table

Table 2. Supportive Factors that May Be Beneficial for Residents

- Early detection through timely evaluations
- Prompt specific feedback and discussion of concerns
- Orientation and communication of expectations at the beginning of every year
- Advisor/advisee system
- Faculty role models
- Close resident camaraderie
- Support groups among residents
- Planned social events, retreats
- Changing the schedule of highly stressed residents
- Promotion of self-awareness and self-care

2) may be useful in the management of problem residents; however, formal studies evaluating the utility of these interventions in this setting have not been performed. Because very little research has focused on this topic, the following recommendations (as well as those noted in Early Detection and Prevention) are a compilation of information gathered from the additional sources of information (interviews and workshops) and the authors' perspectives.

Approximately twenty percent of program directors state that they avoid the issues of problem residents in fear of legal retribution (ABIM Marginal Resident Project, personal communication). Legal repercussions are common in that almost half of program directors acknowledged having been threatened by litigation as a result of their experiences with problem residents.[2] It is thus important for the program to have in place a due process for the resident under scrutiny and to document clearly the procedures undertaken. Under academic due process, the residency program should (1) notify the resident of the concern early on, (2) allow the resident to discuss the issues, voicing his or her point of view, and (3) be clear that competency is judged by professional standards. While it is the responsibility of the resident to improve, it is also the duty of the faculty to facilitate the process. Continuous open channels of communication between the problem resident and the program may also decrease the likelihood of legal action.[6]

Probation is reserved for disciplinary action taken for clearly unacceptable behavior such as confirmed substance abuse, falsifying information, or unethical behaviors. Depending on specific state laws, these incidents may need to be reported to the State Licensure Board and placed on the permanent record of the physician.[53,55]

Early Detection and Prevention

Program directors may attempt to screen out potential problem residents in their pool of applicants to the program. Indicators such as medical school reputation, ranking, board scores, dean's letter, recommendation letters, or interviews may be helpful, but there is a lack of evidence to suggest that any of these data are predictive. Many would argue that it is difficult to predict the response and reaction of an individual to the stresses of residency and that more emphasis should be placed on detecting problem residents early and on effective interventions. In our interviews with program directors, they repeatedly stressed the importance of timely, accurate evaluations of residents. Fellow house officers have been shown to be able to detect impaired residents.[64] Ideally, residents would feel comfortable confronting their colleagues in a supportive way, as well as notifying the chief residents and program director. Because identification by this means is unlikely to occur consistently due to many factors, we would recommend that any complaints made by one house officer about another be thoroughly investigated. Settings where reflection on self-awareness and self-care, such as support groups, are also encouraged and may be beneficial.[61–63] Factors that are thought to be supportive to house officers, and may even prevent various problems, are listed in Table 2. To date, however, no empiric data exist that conclusively prove the utility of these interventions.

CONCLUSIONS

Problem residents represent a significant challenge to medical educators. For many physicians, residency training represents the final supervised step in their prolonged educational journey that culminates in becoming a doctor. While the ideal approach to the identification, management and possibly prevention of problem residents has not been formally studied, this review has attempted to highlight what is known as well as make some thoughtful recommendations.

Several limitations of this review should be considered. First, the amount of published literature addressing many topics related to problem residents is inadequate. Most of the studies describe the results of cross-sectional surveys of program directors or residents. This study design relies on self-report, which may be inaccurate and biased for this sensitive topic. Second, this review has focused most of its attention on the resident as the individual with the problem. It remains unclear the extent to which the training culture, which is stressful and demanding, contributes to the problem and should be held accountable.

Challenges in conducting research about problem residents include the heterogeneity of this population of learners, the variability in the point at which different training programs will consider a trainee as a problem resident, and the fact that numerous problems observed on the job accompanied by several underlying causes are not infrequently seen in problem residents. This being said, additional research focusing on the most effective ways to identify problem residents, studies exploring underlying causes of poor resident performance (from the residents' perspective), and studies prospectively looking at the management of problem residents would contribute greatly to our knowledge in this area.

Although each problem resident requires individualized consideration, the application of a sound framework as outlined in this paper should prove helpful to both the resident and the residency program.

The authors are indebted to Drs. Randy Barker, Dobbin Chow, Robert Ferguson, Nicholas Fiebach, David Hellmann, David Kern, Thomas Lansdale, Susan Wolfsthal, and Roy Ziegelstein and to Ms. Cheri Smith for her assistance in searching the literature.

REFERENCES

1. American Board of Internal Medicine. Association of Program Directors in Internal Medicine (APDIM)'s Chief Residents' Workshop on Problem Residents; 1999.

2. Yao DC, Wright SM. A National Survey of Internal Medicine Residency Program Directors Regarding Problem Residents. JAMA. 2000;284:1099–104.
3. Shapiro J, Prislin MD, Larsen KM, Lenahan PM. Working with the resident in difficulty. Fam Med. 1987;19:368–75.
4. Steinert Y, Levitt C. Working with the "problem" resident: guidelines for definition and intervention. Fam Med. 1993;25: 627–32.
5. Gordon MJ. A prerogative-based model for assessing and managing the resident in difficulty. Fam Med. 1993;25:637–45.
6. Lucy C, Williams FK, Holmboe E, et al. A systematic approach to the problem resident. Workshop presented at the 1999 SGIM national meeting; April 1999.
7. Guide to Evaluation of Residents in Internal Medicine. 2nd Ed. Philadelphia: American Board of Internal Medicine; 1992.
8. "The Problem Resident." VHS videocassette produced by American Board of Internal Medicine; Portland, Ore: 1992.
9. DiTomasso RA, Gamble JD, Willard MA. Precept-Assist. A computerized, data-based evaluation system. Fam Med 199;31: 346–52.
10. Arthur GK, Brooks R, Long ML. A language-cultural course for foreign psychiatric residents. Am J Psychiatry. 1979;136:1064–7.
11. Knoff WF, Oken D, Prevost JA. Meeting training needs of foreign psychiatric residents in state hospitals. Hosp Community Psychiatry. 1976;27:35–7.
12. Kelner M, Rosenthal C. Postgraduate medical training, stress, and marriage. Can J Psychiatry. 1986;31:22–4.
13. Phelan ST. Sources of stress and support for the pregnant resident. Acad Med. 1992;67:408–10.
14. Coombs RH, Hovanessian HC. Stress in the role constellation of female resident physicians. JAMWA. 1988;43:21–7.
15. vanIneveld C, Cook DJ, Kane S, et al. Discrimination and abuse in internal medicine residency. J Gen Intern Med. 1996;11: 401–5.
16. Balon R, Mufti R, Williams M, Riba M. Possible discrimination in recruitment of psychiatry residents? Am J Psychiatry. 1997;154: 1608–9.
17. Reynolds P. Reaffirming professionalism through the education community. Ann Intern Med. 1994;120:609–14.
18. American Board of Internal Medicine. Project Professionalism. Philadelphia: ABIM; 1995.
19. Wright SM, Kern DE, Kolodner KB, Howard DM, Brancati FL. Attributes of excellent attending-physician role models. N Engl J Med. 1998;339:1986–93.
20. Branch W, Kroenke K, Levinson W. The clinician-educator—present and future roles. J Gen Intern Med. 1997;12:S1–4.
21. Mufson MA. Professionalism in medicine: the Department Chair's perspective on medical students and residents. Am J Med. 1997;103:253–5.
22. Samkoff JS, McDermott RW. Emotional impairment in resident physicians. Penn Med. 1989;92:40–3.
23. Smith JW, Denny WF, Witzke DB. Emotional impairment in internal medicine house staff. JAMA. 1986;255:1155–8.
24. Valko RJ, Clayton PJ. Depression in the internship. Dis Nerv Syst. 1975;36:26–9.
25. Ford CV. Emotional distress in internship and residency: A questionnaire study. Psychiatr Med. 1983;1:143–50.
26. Reuben DB. Depressive symptoms in medical house officers. Arch Intern Med. 1985;145:286–8.
27. Hsu K, Marshall V. Prevalence of depression and distress in a large sample of Canadian residents, interns, and fellows. Am J Psychiatry. 1987;144:1561–6.
28. Klamen DL, Grossman LS, Kopacz D. Posttraumatic stress disorder symptoms in resident physicians related to their internship. Acad Psychiatry. 1995;19:142–9.
29. Hainer BL, Palesch Y. Symptoms of depression in residents: a South Carolina family practice research consortium study. Acad Med. 1998;73:1305–10.
30. McCue JD. The effects of stress on physicians and their medical practice. N Engl J Med. 1982;306:458–63.
31. Resident Services Committee, Association of Program Directors in Internal Medicine. Stress and impairment during residency training: strategies for reduction, identification, and management. Ann Intern Med. 1988;109:154–61.
32. Landau C, Hall S, Wartman SA, et al. Stress in social and family relationships during the medical residency. J Med Educ. 1986;61:654–60.
33. Nelson EG, Henry WF. Psychosocial factors seen as problems by family practice residents and their spouses. J Fam Pract. 1978;6:581–9.
34. Taylor AD, Sinclair A, Wall EM. Sources of stress in postgraduate medical training. J Med Educ. 1987;62:425–8.
35. Hurwitz TA, Beiser M, Nichol H, Patrick L, Kozak J. Impaired interns and residents. Can J Psychiatry. 1987;32:165–9.
36. Butterfield PS. The stress of residency. Arch Intern Med. 1988;148:1428–35.
37. Archer LR, Keever RR, Gordon RA, Archer RP. The relationship between residents' characteristics, their stress experiences, and their psychosocial adjustment at one medical school. Acad Med. 1991;66:301–3.
38. Gordon GH, Girard DE, Hickam DH. Comparison of mood changes and satisfaction among first-year medical residents in three programs. J Med Educ. 1987;62:428–30.
39. Urbach JR, Levenson JL, Harbison JW. Perceptions of housestaff stress and dysfunction within the academic medical center. Psychiatr Q. 1989;61:283–95.
40. Schwartz AJ, Black ER, Goldstein MG, et al. Levels and causes of stress among residents. J Med Educ. 1987;62:744–53.
41. Koran LM, Litt IF. House staff well-being. West J Med. 1988;148:97–101.
42. Revicki DA, Whitley TW, Gallery ME. Organizational characteristics, perceived work stress, and depression in emergency medicine residents. Behav Med. 1993;19:74–81.
43. Firth-Cozens J. Emotional distress in junior house officers. Br Med J. 1987;295:533–6.
44. McCue JD, Sachs CL. A stress management workshop improves residents' coping skills. Arch Intern Med. 1991;151: 2273–7.
45. Ferguson KB, Drotar D. Coping styles and health-related behaviors in pediatric and internal medicine house staff: the role of personality styles, gender, and year in training. Dev Behav Pediatr. 1994;15:162–9.
46. Toth EL, Collinson K, Ryder C, et al. Committee to prevent and remediate stress among house staff at the University of Alberta. Can Med Assoc J. 1994;150:1593–7.
47. Firth-Cozen J, Morrison L. Sources of stress and ways of coping in junior house officers. Stress Med. 1989;5:121–6.
48. Borenstein DB, Cook K. Impairment prevention in the training years. JAMA. 1982;247:2700–3.
49. Flaherty JA, Richman JA. Substance use and addiction among medical students, residents, and physicians. Psychiatr Clin North Am. 1999;16:189–97.
50. Myers T, Weiss E. Substance use by interns and residents: An analysis of personal, social and professional differences. Br J Addict. 1987;82:1091–9.
51. Maddux JF, Timmerman IM, Costello RM. Use of psychoactive substances by residents. J Med Educ. 1987;62:852–4.
52. Hughes PH, Baldwin DC, Sheehan DV, Conard S, Storr CL. Resident physician substance use by specialty. Am J Psychiatry. 1992;149:1348–54.
53. O'Connor PG, Spickard A. Physician impairment by substance abuse. Med Clin North Am. 1997;81:1037–52.
54. Benzer DG. Managing substance use disorders in resident physicians. JAOA. 1993;93:217–20.
55. Herrington RE. The impaired physician—recognition, diagnosis, and treatment. Wis Med J. 1979;78:21–3.
56. McNamara RM, Margulies JL. Chemical dependency in emergency

medicine residency programs: prospective of the program directors. Ann Emerg Med. 1994;23:1072–6.
57. American Medical Association Council on Mental Health. The sick physician: impairment by psychiatric disorders including alcoholism and drug dependency. JAMA. 1973;223:684–7.
58. Aach RD, Girard DE, Humphrey H, et al. Alcohol and other substance abuse and impairment among physicians in residency training. Ann Intern Med. 1992;116:245–54.
59. Hughes PH, Conard SE, Baldwin DC, et al. Resident physician substance abuse in the United States. JAMA. 1991;265:2069–73.
60. Jex SM, Hughes P, Storr C, et al. Relations among stressors, strains, and substance use among resident physicians. Int J Addict. 1992;27:979–94.
61. Quill TE, Williamson PR. Healthy approaches to physician stress. Arch Intern Med. 1990;150:1857–61.
62. Siegel B, Donnelly JC. Enriching personal and professional development: the experience of a support group for interns. J Med Educ. 1978;53:908–14.
63. Brashear DB. Support groups and other supportive efforts in residency programs. J Med Educ. 1987;62:418–24.
64. Reuben DB, Noble S. House officer responses to impaired physicians. JAMA. 1990;263:958–60.

◆