APM
Association of Professors of Medicine

Integrating Geriatrics and Subspecialty Internal Medicine: Results of a Survey on Patient Care Practices, Training, Attitudes, and Research

The integration of geriatrics into subspecialty internal medicine is an important priority if the health care needs of the expanding geriatric population are to be met in the coming decades (1). To help accomplish this goal, the John A. Hartford Foundation sponsored a series of geriatric educational retreats (GERs), over a 6-year period from 1995 to 2001 (2). At these retreats, persons in leadership positions in internal medicine subspecialties met with geriatricians and subspecialists-turned-geriatricians for a series of presentations and discussion sessions. At seven separate GERs—held respectively for endocrinology, cardiology (3), oncology (4), infectious disease/rheumatology/immunology (5,6), pulmonary/critical care, nephrology, and gastroenterology—the geriatric/subspecialty interface was evaluated from a discipline-specific perspective. A major goal of the GERs was development of action plans to continue the geriatric education of subspecialists, focusing specifically from the perspective of the individual subspecialties.

The Association of Subspecialty Professors (ASP) serves as a policy and action group for all internal medicine subspecialties. ASP was therefore an ideal organization to continue the pursuit of the subspecialty-geriatric interface from a cross-disciplinary perspective. Accordingly, the 2000 ASP Leadership Conference—Integrating Geriatrics into Subspecialty Internal Medicine—was organized in conjunction with the Hartford Foundation.

There were four broad goals for the conference. Conference participants were charged with developing mechanisms to (1) enhance the training of subspecialty fellows with the skills of geriatric medicine, as well as the geriatric education of medical students, residents, and practicing physicians in the medical subspecialties; (2) focus the interest of academic subspecialists on research in prevalent geriatric problems; (3) develop leaders within each subspecialty whose interests are in geriatric medicine and gerontology; and (4) develop a follow-up agenda whereby strategies can be implemented to achieve the above goals.

Four separate breakout groups were organized to address issues related to clinical care, research, fellowship training, and student and resident education. As cochairs of the breakout group on fellowship training (KAJ, EH), we decided that a critical piece of information was data on attitudes, perceptions, and practices on the subspecialty/geriatric interface among fellows in training. Simultaneously, it was important to understand how faculty involved in fellowship training viewed these same issues. We were unaware of any quantitative published data on this topic. However, we were well aware of the skepticism among many subspecialty participants when arriving at GERs that a geriatric focus was already part of what they did every day in the practice of subspecialty medicine (i.e., "We're all geriatricians"), and the marked change of attitude after attending the GERs. We therefore prepared and distributed a survey to assess these issues. Preliminary results of the survey were discussed at the ASP leadership conference and are presented here in full form.

THE SURVEY

Fifty-two participants from internal medicine subspecialties/departments, geriatric programs, or national organizations attended the ASP Leadership Conference. Thirty-three academic institutions were represented. Four weeks before the meeting, the 30 subspecialty participants received the survey by fax and e-mail. They were asked to distribute the survey to all subspecialty chiefs and training program directors in internal medicine at their institution, who in turn were asked to distribute the survey to all fellows in their subspecialty training program. Responses were requested within 3 weeks. Survey responses from individual institutions and training programs were collected by the ASP conference participant at that institution and delivered to KAJ before or during the conference.

Survey Instrument

A survey instrument was developed to assess issues in patient care practices, training, attitudes, and research. Survey respondents were asked to rate their responses to a series of 44 questions (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). Respondents were asked to "provide the answer which comes closest to your real practices and attitudes, rather than your percep-

0002-9343/02/$–see front matter
PII S0002-9343(01)01125-1

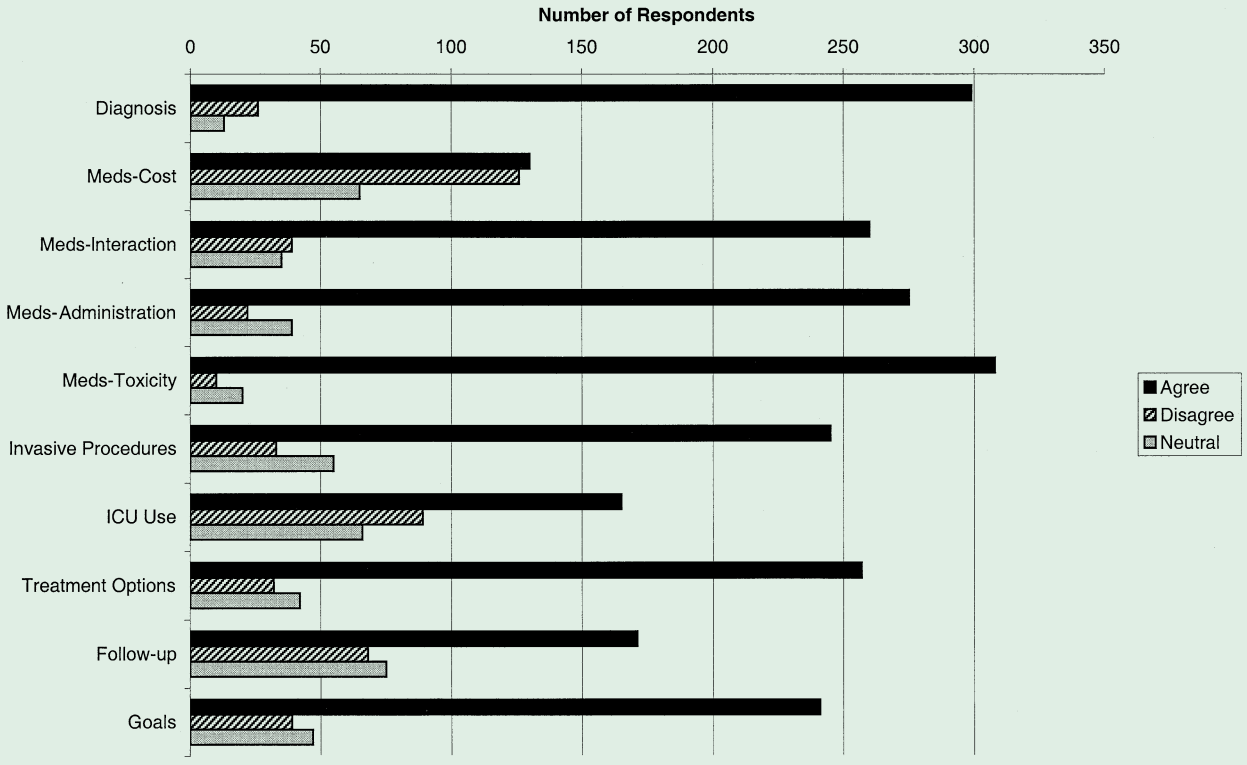

Figure 1. Patient care practices.

tion of what the 'correct answer' should be." All were asked to identify their institution, specialty, position (fellow or faculty), and year training completed (faculty) or year in training (fellow).

Statistical Analysis

The fraction of respondents agreeing (4,5), disagreeing (1,2), or giving neutral responses (3) was determined. For some questions, differences between these responses were compared by chi-squared test. Means were also calculated for all responses. Means from selected groups were compared by *t* test. While many differences were identified which were statistically significant, in general only those where the means varied by greater than 0.5 are described. In some cases, the proportion of respondents giving a specified response were compared by chi-squared analysis.

For some analyses, institutions were grouped into their geographic distributions—Northeast/Mid-Atlantic (Brigham and Women's, Johns Hopkins, Massachusetts General, New England Medical Center, Thomas Jefferson University, Yale); South (University of Alabama at Birmingham, University of Florida, University of Houston, University of South Florida, Vanderbilt, Wake Forest); and Midwest/West (University of Cincinnati; St. Joseph's Hospital; University of Michigan; Medical College of Wisconsin; University of Colorado; University of California, San Diego; University of Washington).

RESULTS

Demographics of Respondents

A total of 344 responses were obtained. Two or more (range 2 to 39, mean 18, median 14) responses were provided from 19 institutions, with a wide geographic distribution. There were 167 faculty and 87 fellows responding; 90 did not specify their position. Surveys were received from fellows and faculty in all internal medicine subspecialties, including cardiology (40), hematology/oncology (34), pulmonary/critical care (31), gastroenterology (25), infectious diseases (23), rheumatology (21), endocrinology (16), and nephrology (14). Thirty-four responses were from other subspecialties (including dermatology and general internal medicine), and 108 did not specify a subspecialty. Because the number of faculty or fellows who actually received the survey is unknown, a survey response rate could not be calculated.

Patient Care Practices

Patient age was considered an important factor in approaches to diagnosis, in drug interactions, ease of drug administration, and drug toxicity (Figure 1). In contrast, drug cost was considered less important, since more than two thirds of respondents were neutral or disagreed with the importance of this variable ($P < 0.005$, compared with preceding categories). Patient age was a more important variable in invasive procedures, in considering treatment

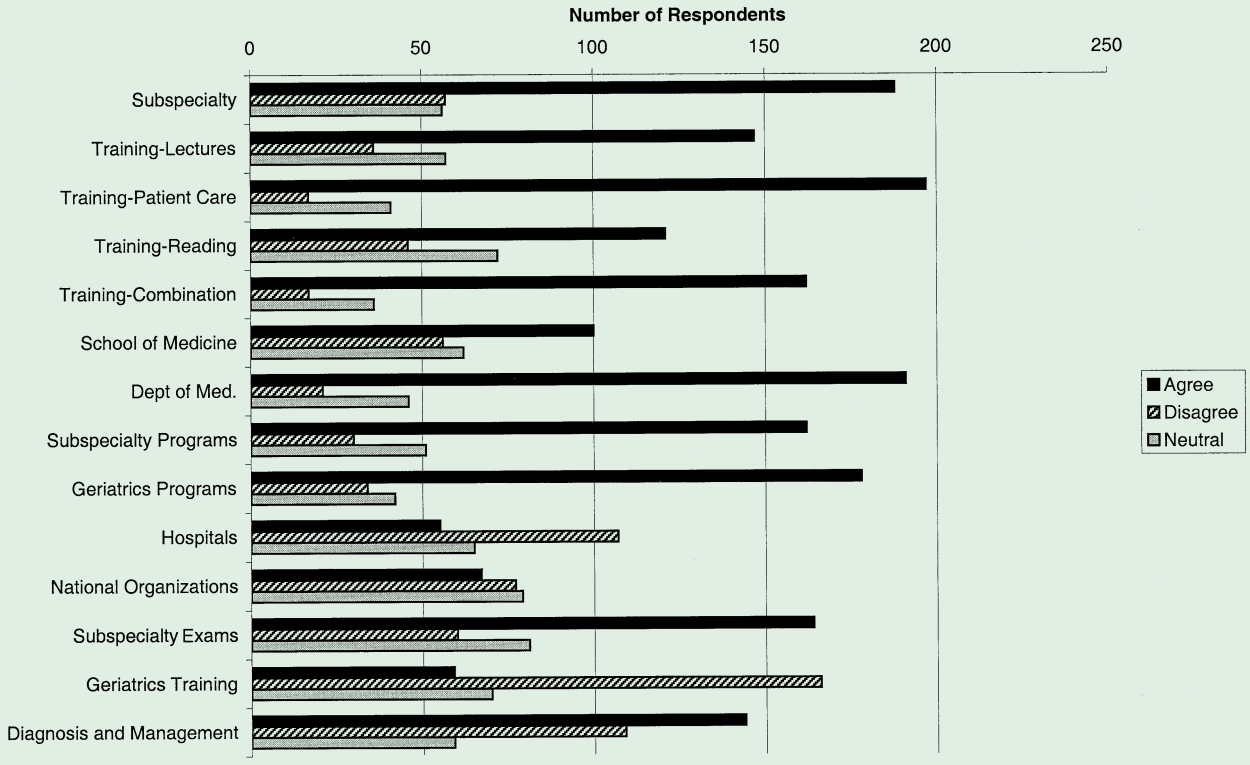

Figure 2. Training subspecialists in geriatric issues.

options, and in treatment goals than when considering intensive care unit (ICU) use or approaches to follow-up ($P < 0.02$ for fraction agreeing).

Fellows earlier in their training (30 first-year and 21 second-year trainees) were much more likely ($P < 0.002$) than more advanced fellows (26 third-year trainees or later) to say that patient age influenced their use of intensive care units and approaches to follow up. Faculty were more likely than fellows ($P < 0.02$) to say that patient age influenced ICU use. No major differences were identified when faculty completing training over 4 decades (1960 through 1990) were compared with one another.

Training

There was strong agreement that principles of geriatrics should be a formal part of fellowship training (Figure 2). The most useful training was through interactions between subspecialists and geriatricians in direct patient care. Other mechanisms, including lectures/discussion groups/symposia led by geriatricians, and readings were also viewed favorably. There was a clear sentiment that training should be organized by departments of internal medicine, geriatrics programs, and subspecialty programs rather than by hospitals, schools of medicine, or national organizations.

While supporting the notion that principles of geriatrics should be incorporated into specialty examinations, only 1 in 5 respondents agreed that geriatrics was a specific subcomponent of fellowship training at their institution. Responses were equally divided with regard to whether diagnosis and management issues specifically related to patient age were emphasized during training.

Attitudinal

There was general support for the concept that interfacing subspecialists and geriatricians improves care of elderly patients (Figure 3). In particular, respondents agreed that geriatrics was an important supraspecialty, that geriatric input improves patient care, that subspecialty input improves the care of elderly patients, that geriatricians valued the input of subspecialists, and that geriatricians are underutilized in the outpatient care of elderly patients. These responses were more positive than the notion that subspecialists have a valuable role for nursing home care or that geriatricians contribute usefully to care of ICU patients ($P < 0.02$ for those agreeing).

Questions related to the intensity and appropriateness of care were also addressed. Only 1 in 6 thought that geriatricians undertreated elderly patients with reversible disease, and only 1 in 9 thought geriatricians were too eager to withdraw care. Geriatricians and subspecialists were considered similar in providing realistic prognostic expectations. Geriatricians, but not specialists, were thought to consistently address end of life issues in patients with chronic or terminal diseases. Subspecialists were considered to overtreat elderly patients with irre-

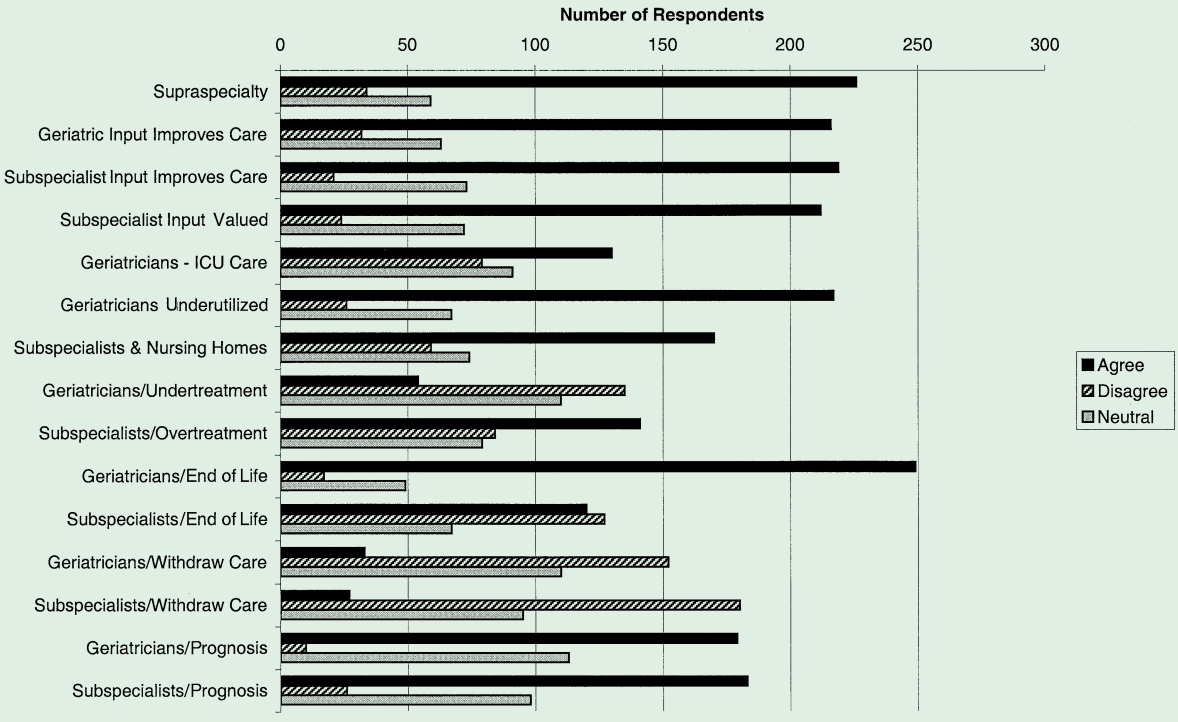

Figure 3. Attitudes of subspecialists regarding the geriatric/subspecialty interface.

versible disease, while only 1 in 10 thought subspecialists were too eager to withdraw care.

Research

Respondents agreed that subspecialty fellows should be encouraged to undertake research in geriatric issues and that such research constituted a viable career path (only 1 in 7 respondents disagreed with either notion; Figure 4). However, only one quarter thought that such research should always be conducted in conjunction with a geriatrician. Surprisingly, only 1 in 5 agreed that research funding was readily available, and a greater fraction of negative responses were from faculty (fewer than 1 in 8 faculty agreed) than from fellows. While fewer than 1 in 20 of first- or second-year fellows disagreed with the idea that research in geriatrics was a viable career option, nearly one quarter of more advanced fellows expressed this opinion.

DISCUSSION

This survey provides a broad look at the practices and attitudes of subspecialty fellows and faculty toward geriatrics. While there were no "big surprises" from the results (and in fact, none were expected), there were a number of trends that could not be predicted a priori, but which can now form the basis either for further study or intervention.

In light of recent attention to prescription drug costs in the elderly, the data are timely in noting that two thirds of respondents did not consider drug cost an important consideration in prescribing for the elderly. While federal mandates to deal with this issue are one solution, a complementary approach involves educating fellows and faculty about the cost of drugs frequently prescribed to this population.

Given the general enthusiasm for geriatric input in patient care, it is compelling that input of geriatricians into the ICU care of patients was not valued. This is particularly pertinent when considering the growing data that geriatric syndromes are common and contribute to increased morbidity and mortality among elderly patients admitted to the ICU. For example, delirium occurs in 60% of elderly patients (7). Recent data suggest delirium may occur in as many as 87% of ICU admissions (8) and the elderly are at particular risk for this syndrome, often termed "ICU psychosis." Studies are now under way to determine if geriatric input early in the ICU stay can reduce the incidence of delirium in elderly ICU patients, reduce length of ICU stay, and improve patient outcomes (personal communication, E. Wesley Ely, MD). The authors are aware of similar innovative approaches that have been applied successfully across subspecialties at a few institutions throughout the United States that could serve as templates for faculty interested in such collaborative efforts.

There is a notable tendency for fellows in training to become progressively less convinced of the value of the subspecialty/geriatric interface or of the viability of re-

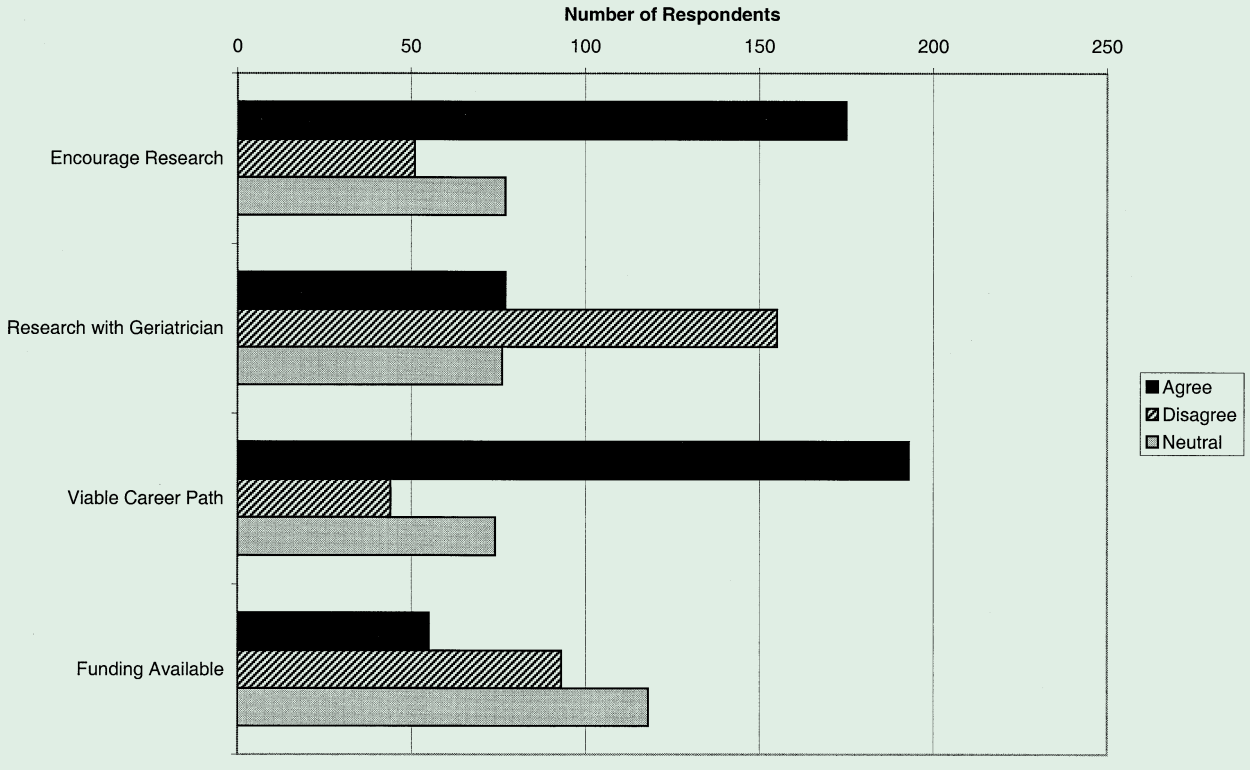

Figure 4. Subspecialists' perceptions about research in geriatrics.

search in geriatrics as a career option. Given the high enthusiasm for incorporating geriatrics training into subspecialty fellowships, an obvious corrective solution (assuming one is needed) is to integrate geriatricians into the educational program and to emphasize the need and viability of career paths focused on the geriatric aspects of subspecialty medicine. It is encouraging that research in this arena is considered a viable option. In some respects, it is surprising that this option was not viewed more positively, given the demographics of the population. Most in need of correction is the notion that research funding is not readily available. In fact, this is one of the fastest growing areas or research emphasis, with multiple special funding mechanisms through federal and private sources (Brookdale, Pfizer, and Beeson awards; Hartford, Merck, and Ellison Foundations; AFAR [American Federation for Aging Research] and the National Institute of Aging [NIA]. Two good sources for funding opportunities are the American Geriatrics Society web page [www.americangeriatrics.org] and the NIA home page [www.nih.gov/nia]).

Several limitations of this survey are readily apparent. The allotted response time was short, potentially excluding responses from the busiest clinicians. A response rate could not be calculated, but was likely to be low, particularly for fellows. It is therefore conceivable that persons already persuaded by the virtues of the specialty/geriatric interface either preferentially responded or failed to respond. Some subspecialties were predominantly represented from one or two institutions, potentially introducing bias if particular attitudes were prevalent within that individual training program. The survey was only distributed within institutions with a faculty member already committed to attend the ASP Leadership Conference, perhaps biasing the results toward those already integrating geriatrics into the training and research programs. Twenty-six percent of respondents failed to identify their position, potentially confounding the comparison between faculty and fellows. Finally, inclusion of a neutral response in the survey precluded a distinction between indifference or true neutrality with regard to responses, especially as nearly one third of all responses to some questions were neutral.

Caution must be exercised in assuming that the most desirable responses are those applauding the geriatric/subspecialist interface. Nonetheless, the predominant view emerging from the survey is enthusiasm for the importance and relevance of the geriatric/subspecialty interface in patient care, training, and research. Educational programs driven by departments of medicine, subspecialty programs, and geriatrics programs should emphasize the clinical components of the interface, the multiple research opportunities available for fellows and junior faculty, and the viability of career paths in academia inte-

grating geriatrics and subspecialty internal medicine. In cooperation with the Hartford Foundation and the American Geriatrics Society, ASP, as a result of the 2000 Leadership Conference, has launched the Geriatrics Development Initiative. One aspect of this program is coordinating and providing significant funding for young investigator grants to be awarded through the several partnering subspecialty societies' granting programs. These awards, $75,000 per year for 2 years, are targeted toward faculty within 3 years of their initial appointment to a subspecialty division of internal medicine, and require both a subspecialist and geriatric mentor. Through this effort, ASP and its partner organizations hope to enrich the pool of subspecialists focusing on geriatrics to fulfill critical research, teaching, and clinical care needs in the coming decades.

Keith A. Joiner, MD
Edward Haponik, MD
Kevin P. High, MD

Dr. Joiner is Chief of the Division of Infectious Diseases in the Department of Internal Medicine at Yale University School of Medicine. Dr. Haponik is Clinical Director of the Division of Pulmonary Medicine in the Department of Medicine at the Johns Hopkins University School of Medicine. Dr. High is Program Director in the Division of Infectious Diseases in the Department of Medicine at Wake Forest University School of Medicine.

The authors thank Charlene Bloch and Setsuko Chambers (New Haven, Connecticut) for superb assistance with collating the survey data.

REFERENCES

1. Angus DC, Kelley MA, Schmitz RJ, et al. Current and projected workforce requirements for care of the critically ill and patients with pulmonary disease. Can we meet the requirements of the aging population? *JAMA.* 2000;284:2762–2770.
2. Hazzard WR, Woolard N, Regenstreif DI. Integrating geriatrics into the subspecialties of internal medicine: the Hartford Foundation/American Geriatrics Society/Wake Forest University Bowman Gray School of Medicine Initiative. *J Am Geriatr Soc.* 1997;45:638–640.
3. Applegate WB, Rich MW, Cheitlin MD. Integrating geriatrics into cardiology training programs. *J Am Geriatr Soc.* 1997;45:641–642.
4. Kennedy BJ. Integrating geriatrics and oncology. *J Cancer Educ.* 1997;12:139–140.
5. High KP, Joiner KA. Meeting review: integrating geriatrics into infectious diseases clinical training, research training, board certification and continuing education. *Clin Infect Dis.* 1999;28:753–756.
6. High KP, Yoshikawa TT. Introduction: integrating geriatrics into the subspecialty of infectious diseases. *Clin Infect Dis.* 1999;28:708–709.
7. Inouye SK, Bogardus SK, Charpentier PA, et al. A multicomponent intervention to prevent delirium in hospitalized older patients. *N Engl J Med.* 1999;340:669–676.
8. Ely EW, Margolin RR, Francis J, et al. Evaluation of delirium in critically ill patients: validation of the confusion assessment method for the intensive care unit (CAM-ICU). *Crit Care Med.* 2001;29:1481–1483.