

# Development of Geriatrics-Oriented Faculty in General Internal Medicine

Craig D. Rubin, MD; Heather Stieglitz, PhD; Belinda Vicioso, MD; and Lynne Kirk, MD

The need for adequate geriatrics training for the physician workforce has been recognized for decades. However, there are not enough academic geriatricians to provide for the educational needs of trainees, and this situation is not expected to change in the future. General internists are often responsible for teaching medical students and internal medicine residents to care for elderly patients in inpatient and ambulatory settings. These academic general internists could play a pivotal role in providing geriatrics instruction.

To characterize what is being done to develop geriatrics-oriented general internal medicine faculty, we identified current practices, "best practices," goals and targets, and barriers to achieving those goals and targets. We reviewed the literature on

faculty-development programs for general internal medicine faculty, and we held focus groups and structured interviews with general internal medicine unit chiefs and directors of Geriatric Centers of Excellence at 46 medical schools throughout the United States. We found a need for programs to develop geriatrics-oriented academic general internists. Although general internal medicine faculties seem receptive to further geriatrics training, important obstacles exist. These include inadequate time and resources as well as motivational and attitudinal challenges. We discuss potential solutions for overcoming these barriers and the implications of these solutions for stakeholders.

*Ann Intern Med.* 2003;139:615-620.

[www.annals.org](http://www.annals.org)

For author affiliations, see end of text.

The need for all medical students and primary care housestaff to acquire skills in the care of the elderly has been recognized for decades (1, 2). More recently, studies have shown that fellows training in general internal medicine and internal medicine subspecialties need to develop these skills as well (3). It was hoped that faculty with geriatrics training or expertise could meet the educational needs of trainees; however, we continue to have insufficient numbers of academic geriatricians, and this shortage will worsen in the future (4–6). Clinician–educators in general internal medicine do much of the teaching of trainees in both ambulatory and inpatient settings, where many of the patients are elderly. Thus, academic general internists have the opportunity to help impart the basic knowledge and skills necessary to care for older adults (7). To incorporate geriatrics into their already busy teaching agendas, general internists must have the necessary motivation, knowledge, and skills.

We describe what is being done to develop geriatrics-oriented general internal medicine faculty. We identify current practices, "best practices," goals and targets, and barriers to achieving those goals and targets. We then offer potential solutions for overcoming barriers to faculty development in geriatrics among academic general internists.

## METHODS

### Literature Review

We searched the literature using several databases: MEDLINE (1966 to February 2001), ERIC (Educational Resources Information Center) (1966 to February 2001), AgeLine (1978 to February 2001), Best Evidence (1991 to February 2001), Current Contents (1995 to February 2001), the Cochrane Database of Systematic Reviews, and Pre-MEDLINE. Abstracts from national meetings of the American Geriatrics Society and the Society of General

Internal Medicine were reviewed for the years 1999 to 2001. Program reports on geriatrics-oriented faculty-development activities were requested from the John A. Hartford Foundation, Inc., and the Health Resources and Services Administration. We also asked leaders in geriatric medicine about their knowledge of programs related to geriatrics-oriented faculty development in general internal medicine.

We reviewed titles and available abstracts for a match to at least 1 of 6 areas: current practices, best practices, goals and targets for optimal development of geriatrics-oriented general internal medicine faculty, barriers to achieving those goals and targets, solutions to identified barriers, and institutions that have programs and have published in the area of geriatrics-oriented faculty development. Two authors reviewed articles for the following inclusion criteria: 1) inclusion of general internal medicine faculty, 2) description of the educational interventions, 3) evaluation of the outcomes, and 4) description of the outcomes. The literature review identified a total of 504 references. We reviewed all titles and available abstracts (64%) and read 138 articles in their entirety. Four published articles and 3 program project reports (8–14) (Appendix Table, available at [www.annals.org](http://www.annals.org)) met the inclusion criteria.

### Focus Group and Structured Interviews

As a convenience sample, 40 division heads of general internal medicine units at 38 medical schools in the southern United States were asked to participate in an 80-minute focus-group session on training general internists in geriatrics. We used a random-numbers table to select 34 other medical schools for interviewing. We sent letters to the general internal medicine chiefs at those schools, requesting their participation in a structured 15-minute telephone interview. We also sent letters to the directors and

the heads of general internal medicine of 21 Hartford Centers of Excellence.

## RESULTS

### Literature Review

The faculty-development projects described in the literature or project reports were all funded by 1 of 2 sources: the Health Resources and Services Administration, as part of its Geriatrics Education Centers in the 1980s, or the John A. Hartford Foundation, Inc., in the 1990s. All faculty-development activities included faculty from more than 1 discipline. The interventions ranged from 9 evening sessions held over 3 years (9) to 1 year of on-site training (10). They all included educational modules related to geriatrics content and training in educational methods. A few included experiential training at geriatric clinical sites or teaching, or both (**Appendix Table**, available at [www.annals.org](http://www.annals.org)) (10, 11; Silliman R. John A. Hartford Foundation Progress Report. Boston University Center of Excellence in Geriatrics: 1/1/98 to 12/31/00, 2001, Personal communication; Stratos G. Final Report: Stanford Education Resource and Dissemination Center for the John A. Hartford Geriatrics in Primary Care Residency Training Initiatives, 2001, Personal communication).

All of the faculty-development projects measured outcomes by using surveys and evaluations of educational offerings at or after the conclusion of the projects. They also measured either 1) the intent of participating faculty to change geriatrics practice or teaching or 2) self-reported change in the activities of participating faculty at some point after the training. Only 1 project (Stratos G. Personal communication) measured and reported change in knowledge, skills, and attitude by learners. None of the projects measured change in behavior by learners that might have resulted from the educational intervention.

### Focus Group and Structured Interviews

Eleven of the 40 division heads, representing 10 schools, participated in the focus-group session. We completed interviews with 13 Hartford Center directors (62%), 21 general internal medicine unit chiefs at medical schools that are not Centers of Excellence (62%), and 9 general internal medicine unit chiefs at schools with a Hartford Center (43%). Between the focus group and the individual interviews, 49 medical schools were represented.

According to general internal medicine unit chiefs, geriatrics was taught exclusively by geriatrics faculty at 24% of schools that are not Centers of Excellence and 67% of schools with Hartford Centers. It was taught by both general internal medicine and geriatrics faculty at 38% of schools that are not Centers of Excellence and 33% of schools with Hartford Centers. It was taught exclusively by general internal medicine faculty at 33% of schools that are not Centers of Excellence and none of the schools with Hartford Centers. At 1 school, internists did not teach geriatrics. At 3 of the 5 schools with Hartford Centers

where both the Center director and the general internal medicine unit chief were interviewed, the director and the chief disagreed about who taught geriatrics. When asked whether geriatrics should be taught by general internal medicine faculty, general internal medicine unit chiefs said yes at 86% of schools that are not Centers of Excellence and at 56% of schools with Hartford Centers. When Center directors were asked the same question, 85% said yes.

General internal medicine unit chiefs were asked whether their faculty perceived that they should teach geriatrics. At schools that are not Centers of Excellence, 57% said yes and 52% said that their faculty currently had the knowledge and skills to teach geriatrics (81% concordance). At schools with Hartford Centers, 22% said yes and 33% said that their faculty currently had the knowledge and skills to teach geriatrics (87.5% concordance). When Hartford Center directors were asked whether their general internal medicine faculty had the knowledge and skills to teach geriatrics, 46% said yes.

Activities to increase clinical or teaching skills in geriatrics for general internal medicine faculty were reported by 5 (24%) of the general internal medicine unit chiefs at schools that are not Centers of Excellence, 5 (56%) of the general internal medicine unit chiefs at schools with Hartford Centers, and 4 (31%) of the Hartford Center directors. Some Center directors noted that although geriatrics-oriented faculty-development activities were offered to general internal medicine faculty, few or no faculty participated. The rest of the reported activities were done as part of ongoing general internal medicine unit activities, such as journal clubs, grand rounds, and conferences. Outcomes have not been measured or published for most of these activities, many of which were not sustained over time.

At Hartford Centers, we identified 2 additional faculty-development programs for which outcomes have not been published. At 1 site, faculty members received a small stipend, participated in didactic work, and were paired with geriatricians who helped them develop a scholarly project. The intervention does not seem to have had a measurable effect on the teaching of geriatrics by general internal medicine faculty at this institution. Another program offered support to assist general internal medicine faculty with the development of core geriatrics content areas for teaching. As a result, general internal medicine faculty and geriatrics faculty provide didactic lectures during resident and student geriatrics rotations.

The general internal medicine chiefs were asked in an open-ended manner to identify existing barriers that hinder their faculty from teaching geriatrics and participating in geriatrics-oriented faculty development. Nineteen (70%) specified lack of time, both for teaching and for participation in faculty development. Ten (37%) suggested that their faculty did not perceive a need to teach geriatrics or were not motivated to teach geriatrics. Some identified a lack of resources as a barrier—specifically, materials for

geriatrics-oriented faculty development and clinical resources to enable interdisciplinary teams to teach geriatrics.

Although the focus-group participants were a subset of a regional group of general internal medicine unit chiefs, their responses yielded information similar to that offered in the structured interviews.

## DISCUSSION

Our findings suggest a great need for geriatrics-oriented faculty-development activities for general internal medicine faculty. General internal medicine unit chiefs identified numerous barriers to achieving optimal teaching of geriatrics by academic general internists. These barriers fall into 3 categories: time, resources, and motivation. The strategies for overcoming impediments to faculty development will require support from many of the stakeholders involved in medical education. The **Table** outlines specific suggestions for and stakeholders' roles in overcoming these barriers.

The barrier mentioned most often was the lack of time in 3 areas: during the clinical encounter, in teaching, and for faculty development. Over the past decade, the clinical environment in which medical education takes place has become less hospitable to teaching. Increasingly, faculty members are under pressure to evaluate and treat more patients in less time to generate clinical income. Concurrently, they must meet increasingly time-consuming regulatory requirements—often at the expense of teaching time—by documenting medical records to ensure appropriate billing and avoid legal penalties (12). Internists perceive their time with patients as too short to allow them to do much of the assessment that geriatricians have determined is necessary for appropriate care of the elderly. Any unique aspects required of the clinical encounter with elderly patients must be incorporated into the limited time available (initiatives 1 and 2 in the **Table**).

Faculty also have little time to incorporate another topic into the curriculum for which general internal medicine faculty members are responsible. Although many curricular areas compete for time, the demographic imperative of our aging population must be acknowledged. Geriatrics skills (such as emphasis on patient–family communication) and knowledge (for example, about community resources) are relevant to other areas of medical training and would benefit the entire patient population (**Table**, initiatives 3 to 5).

Little time is available for faculty development. General internal medicine unit chiefs think that the basic skills in geriatrics teaching necessary for all general internal medicine faculty must be incorporated into current faculty-education formats so that the time needed for instruction is as minimal as possible. Several promising formats for geriatrics-oriented faculty development have been piloted (8–11; Silliman R. John A. Hartford Foundation Progress Report. Boston University Center of Excellence in Geriatrics: 1/1/98 to 12/31/00, 2001, Personal communication; Stra-

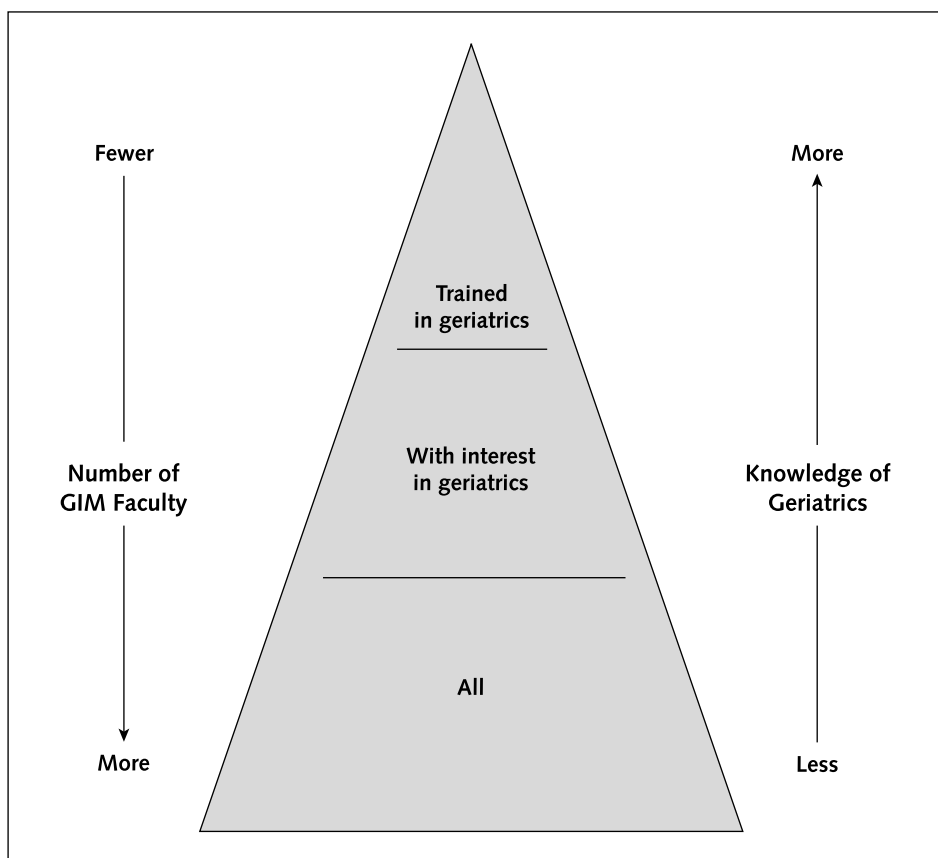
**Table. Suggested Initiatives for Overcoming Barriers to Geriatrics-Oriented Faculty Development\***

1. Promote the use of existing tools to incorporate geriatrics assessment into primary care visits. AAMC, ACP, AGS, and SGIM should collaboratively emphasize the importance of geriatrics assessment in position papers and by sponsoring educational venues during regional and national meetings.
2. Fund health services research to determine which assessment tools positively affect care outcomes. The AHRQ and new initiatives from foundations committed to geriatrics should lead this investigation.
3. Develop position statements from medical education leadership organizations (e.g., AAMC and APM) that emphasize the importance of geriatrics education and the time required to attain that education.
4. Establish curricular goals and objectives related to geriatrics. The Accreditation Council for Graduate Medical Education and the Liaison Committee for Medical Education should do this.
5. Fund new initiatives from HRSA and CMS to develop alternative teaching venues, such as nursing homes and housecall programs, where geriatrics curricular content can be taught more effectively than in traditional settings.
6. Develop and disseminate core educational materials for geriatrics-oriented general internal medicine faculty aimed at all faculty.
7. Develop and fund well-defined academic career awards to protect faculty time for geriatrics-oriented faculty development activities. The HRSA, the National Institute on Aging, and the Veterans Health Administration could expand current programs to meet this need, and foundations could assist in developing new programs.
8. Develop alternative ways for academic general internists to qualify for the Certificate of Added Qualification in Geriatrics.
9. Appoint a joint commission of members representing AGS, SGIM, and ACP to define and articulate specific geriatrics content for incorporation into general internal medicine practice.
10. Demonstrate institutional support of faculty development in geriatrics. Promotion and tenure committees should acknowledge faculty teaching and development activities, and AAMC and APM should emphasize their support.
11. Fund core geriatric-assessment team members as part of the infrastructure needed to conduct physician training in the care of the aged; geriatrics social workers and nurse practitioners are essential. Academic health centers should use their CMS educational funds for these positions.
12. Fund research to identify optimal lengths for the clinical encounter, the personnel who should be at the encounter, and the effect of changes in encounter length and personnel on health care and teaching outcomes. AHRQ should do this.

\* AAMC = Association of American Medical Colleges; ACP = American College of Physicians; AGS = American Geriatrics Society; AHRQ = Agency for Healthcare Research and Quality; APM = Association of Professors of Medicine; CMS = Centers for Medicare & Medicaid Services; HRSA = Health Resources Services Administration; SGIM = Society of General Internal Medicine.

tos G. Final Report: Stanford Education Resource and Dissemination Center for the John A. Hartford Geriatrics in Primary Care Residency Training Initiatives, 2001, Personal communication; Sullivan G. John A. Hartford Foundation "Geriatrics in Generalist Training" Annual Reports: 1995 to 1998, University of Connecticut Center on Aging, 2001, Personal Communication). Programs that provide well-defined release time seem to be the most successful and the most likely to achieve widespread adoption (Silliman R. Personal communication; Stratos G. Personal com-

Figure. Relationship between number of general internal medicine (GIM) faculty and knowledge of geriatrics.



Basic knowledge and skills are needed by all general internal medicine faculty so that they can teach geriatrics in the ambulatory and inpatient settings (base of triangle). More knowledge and skills are needed by the subset of the general internal medicine faculty who will serve as a resource on geriatrics for the rest of the general internal medicine faculty (middle of triangle). Advanced skills and knowledge are needed by a small subset of general internal medicine faculty who will serve as experts in geriatrics (apex of triangle).

munication). Other faculty-development models may have applications in geriatrics. These include programs in substance abuse (13), genetics (14), and end-of-life care (15). Participation by several persons from a single institution seems to facilitate both training and its sustainability at that institution. Although geriatrics-related educational materials exist, many general internal medicine faculty members expressed the opinion that sufficient core teaching materials in geriatrics have not been produced. This barrier can be overcome by developing and disseminating core educational materials for geriatrics-oriented general internal medicine faculty aimed at all faculty (Table, initiative 6). Initiatives funded by the Donald W. Reynolds Foundation are under way to help address this issue.

For a small number of faculty members, the time needed to develop more extensive activities in geriatrics research and education can be supplied by traditional academic career awards. These currently exist but are limited to faculty with credentials in geriatrics. General internists willing to devote their professional activities to geriatrics should also be eligible for this support (Table, initiative 7).

At institutions without academic geriatrics units, a

subset of general internal medicine faculty may need to become the geriatrics experts. To achieve this high level of geriatrics skills and knowledge, physicians usually need to complete fellowship training and attain the American Board of Internal Medicine's Certificate of Added Qualification (CAQ) in Geriatrics. Current eligibility for the CAQ requires at least 1 year of geriatrics fellowship training, away from faculty responsibilities. A possible way to create more geriatrics experts is to accredit a local faculty-development program that would lead to eligibility for the CAQ examination. Such a program should be academically rigorous, well defined with established requirements, and endorsed by the relevant professional organizations (Table, initiative 8). Minimum requirements might include 1) full-time faculty appointment at the assistant professor level or higher for a defined period, 2) most clinical time spent in the care of older patients, 3) participation in research on aging, and 4) participation in the teaching of geriatrics.

We conceptualize 3 target levels for the development of geriatrics-oriented general internal medicine faculty (Figure). The goal of geriatrics-oriented development programs would be to provide training and resources for fac-

ulty at each of these levels. The degree to which each institution's faculty development plan should proceed will depend on an evaluation of their own resources and the skills and knowledge of their faculty. All general internal medicine faculty will need the basic knowledge and skills necessary to care for the elderly in primary care and inpatient settings. They will also need the knowledge and skills necessary to teach this content to others. Examples of knowledge needed at this level are an understanding of age-related changes in physiology and knowledge of pharmacokinetics. Level 2 training would lead to greater geriatrics skills and knowledge for general internal medicine faculty who have a special interest in teaching geriatrics and in creating faculty-development experiences. Examples of knowledge and skills needed at this level would be additional knowledge in functional assessment and skill in the advanced management of some geriatric syndromes, such as urinary incontinence. Level 2 faculty would serve as a resource to other faculty members and would be able to teach a greater array of geriatrics content. Level 3 training would cover advanced geriatrics skills and knowledge for a subset of general internal medicine faculty who would serve as geriatrics specialists.

The motivation and attitude of general internal medicine faculty are major impediments to faculty development in geriatric medicine (16). Because general internal medicine faculty already care for older patients, many perceive no need to develop additional skills. Some even question the value of the geriatrics model of care by citing limited evidence in support of improved health outcomes. Nonetheless, most general internal medicine unit chiefs acknowledge the need for greater expertise and training in geriatrics (16). Sox (17) points out that "the evidence suggests that internists have room to improve their care for patients with chronic disease." He warns that "the failure to recognize this and the key role general internists can play in the provision of care to the frail (chronically ill) may have significant consequences for internists as well as patients." Changes in faculty behavior can take place only if geriatrics teaching is made an institutional priority, the appropriate clinical teaching environments are available, and faculty members have the time and resources to gain and implement the skills they need to teach geriatrics. This level of support will require action by general internal medicine unit chiefs, geriatrics faculty, internal medicine department chairs, medical school deans, and chief executive officers of health systems (Table, initiatives 9 and 10). General internal medicine chiefs and department chairs must make the teaching of geriatrics a priority for their faculty. They must then provide the training and environment for its facilitation. Medical school deans and curriculum leaders should make the geriatrics curriculum a priority for medical students. In turn, chief executive officers of academic health systems should provide the resources needed to create appropriate clinical venues for care of the elderly and the teaching of that care.

General internal medicine unit chiefs identified inadequate resources as a major barrier to clinical care of the elderly, teaching of geriatrics to trainees, and faculty development in geriatrics. Inadequate clinical resources include clinical facilities, time for the clinical encounter, and interdisciplinary personnel needed to provide optimal care. Sullivan (Sullivan G. Personal communication) has identified the need to "geriatricize" major clinical training sites. Providing time for the clinical encounter and necessary interdisciplinary personnel will require investments by the health system. We suggest funding core geriatric-assessment team members and research to identify optimal visit characteristics (Table, initiatives 11 and 12).

The entities that certify medical knowledge and accredit medical education, and those that support such education, should act to enhance the motivation and ability of institutional administrators to provide the support and environment that general internal medicine faculty need to teach geriatrics. The Liaison Committee for Medical Education and the Accreditation Council for Graduate Medical Education and their parent organizations should include explicit geriatrics curriculum requirements for medical students and internal medicine residents. Previous efforts that simply required time spent in geriatrics have been inadequate. The National Board of Medical Examiners and the American Board of Internal Medicine should verify that appropriate geriatrics knowledge is covered on their examinations, and they should explicitly report geriatrics subscores to diplomates, medical schools, and residency programs. The Accreditation Council for Graduate Medical Education and the American Board of Internal Medicine should require documentation by residents of key skills necessary for the care of the elderly. The American Board of Internal Medicine should work with leaders in geriatrics, general internal medicine, and family practice to explore how a subset of faculty can acquire the credentials for the CAQ in geriatrics without a full year of mid-career training.

State governments should provide support for medical education to ensure that the needs of their elderly citizens are met. This support should be in the form of increased funding to medical schools and residencies and to consortia of these groups developing and implementing geriatrics curricula. The U.S. government has several potential ways to assist in enhancing the geriatrics workforce. Most health care for the elderly is financed through the Centers for Medicare & Medicaid Services, which should increase clinical reimbursement for the most time-intensive components of geriatric clinical encounters and support the necessary interdisciplinary care teams. This would increase the availability of clinical settings for the teaching of geriatrics. A secondary benefit would be to attract more physicians to the care of the elderly. The Centers for Medicare & Medicaid Services also provide important funding for graduate medical education. These funds should be made available

to nontraditional teaching sites, such as nursing homes and housecall programs.

The U.S. government has a record of enhancing interdisciplinary geriatrics education through the Geriatric Education Centers supported by the Health Resources and Services Administration's Bureau of Health Professions and through the Geriatric Research, Education and Clinical Centers supported by the Department of Veterans Affairs. The outcomes of these centers with respect to physician behavior, knowledge, and skills should be evaluated. Those models that show evidence of improving outcomes should be expanded and disseminated. A final area in which the U.S. government should give assistance is in the determination—through outcomes evaluation—of the clinical components of geriatric care that should be universally incorporated to improve patient care. The lead agency for these efforts should be the Agency for Healthcare Research and Quality.

Several foundations, including the John A. Hartford Foundation, Inc., and the Donald W. Reynolds Foundation, have generously and consistently supported geriatric care and education. These and other foundations should continue to offer competitive grants to help institutions develop and evaluate methods of providing and teaching geriatric care. The outcomes of these projects should be shared so that other institutions can adopt the components that meet their specific needs.

Professional organizations whose members have a key role in teaching about and providing geriatric care should bring together experts to better define standards of care and teaching and to advocate for appropriate funding. Organizations should work together to provide resources and data so that their members can implement better care and teaching at the local level. For example, the American College of Physicians, the American Geriatrics Society, and the Society of General Internal Medicine could work together to define the geriatrics content to be incorporated into the primary care of elderly patients by general internists. Their advocacy efforts could promote coverage of this care by the Centers for Medicare & Medicaid Services and the evaluation of its outcomes by the Agency for Healthcare Research and Quality.

All of the stakeholders discussed here are committed to providing the best possible care to the elderly. By working together and focusing time and resources on training the general internal medicine physician workforce, they can attain this goal. The result will be better-trained internists who understand and can meet the needs of our graying population.

From the University of Texas Southwestern Medical Center at Dallas, Dallas, Texas.

**Grant Support:** In part by the Society of General Internal Medicine through a grant from the John A. Hartford Foundation, Inc.

**Potential Financial Conflicts of Interest:** None disclosed.

**Requests for Single Reprints:** Craig D. Rubin, MD, Department of Internal Medicine, The University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75390-8889; e-mail, craig.rubin@utsouthwestern.edu.

Current author addresses are available at [www.annals.org](http://www.annals.org).

## References

1. **Institute of Medicine.** Aging and Medical Education. Washington, DC: National Academy of Sciences; 1978.
2. **Dans PE, Kerr MR.** Gerontology and geriatrics in medical education. *N Engl J Med.* 1979;300:228-32. [PMID: 759870]
3. **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;45:638-40. [PMID: 9158591]
4. **Reuben DB, Bradley TB, Zwanziger J, Fink A, Vivell S, Hirsch SH, et al.** The critical shortage of geriatrics faculty. *J Am Geriatr Soc.* 1993;41:560-9. [PMID: 8486892]
5. **Reuben DB, Beck JC.** Training Physicians To Care for Older Americans: Progress, Obstacles, and Future Directions. Washington, DC: Institute of Medicine; 1994.
6. **Reuben DB, Bradley TB, Zwanziger J, Vivell S, Fink A, Hirsch SH, et al.** Geriatrics faculty in the United States: who are they and what are they doing? *J Am Geriatr Soc.* 1991;39:799-805. [PMID: 2071811]
7. **Larson EB.** General internal medicine at the crossroads of prosperity and despair: caring for patients with chronic diseases in an aging society. *Ann Intern Med.* 2001;134:997-1000. [PMID: 11352700]
8. **Feather J, Karuzu J Jr, MacKellar M, Calkins E.** Interdisciplinary faculty training in geriatrics and gerontology: a non-clinical model. *Gerontol Geriatr Educ.* 1988;8:165-79. [PMID: 3240871]
9. **Swagerty D Jr, Walling A, Studenski S.** Preliminary report from the Kansas Hartford Geriatrics Project: a model of community university collaboration in geriatric medicine faculty development. *J Am Geriatr Soc.* 2000;48:1513-8. [PMID: 11083334]
10. **Robbins LJ.** Mid-career faculty development awards in geriatrics: does retraining work? *J Am Geriatr Soc.* 1993;41:570-1. [PMID: 8486893]
11. **Fasser CE, Roush RE, Wright TL.** Education in geriatric medicine: the TCGEC faculty development model. *Gerontol Geriatr Educ.* 1988;8:37-47. [PMID: 3240877]
12. **Fihn SD, Schleyer AM, Kelly-Hedrick H, Martin DB.** Effects of the revised HCFA evaluation and management guidelines on inpatient teaching. *J Gen Intern Med.* 2000;15:451-6. [PMID: 10940130]
13. **Fleming M, Clark K, Davis A, Brown R, Finch J, Henry R, et al.** A national model of faculty development in addiction medicine. *Acad Med.* 1992;67:691-3. [PMID: 1388535]
14. **Bureau of Health Professions of the Health Resources and Services Administration.** Genetics in Primary Care: A Faculty Development Initiative. 2000. Accessed at <http://bhpr.hrsa.gov/medicine-dentistry/genpc.html> on 17 July 2001.
15. **Emanuel LL, von Gunten CF, Ferris F.** EPEC: Education for Physicians on End-of-Life Care. Trainer's Guide. Chicago: Northwestern Fineberg School of Medicine; 1999.
16. **Rubin C, Stieglitz H, Kirk L.** Development of geriatrically oriented faculty in general internal medicine. Training General Internists in Geriatrics: Planning for Sustained Improvement. Baltimore, Maryland; 2001.
17. **Sox HC.** Supply, demand, and the workforce of internal medicine. *Am J Med.* 2001;110:745-9. [PMID: 11403763]

---

**Current Author Addresses:** Drs. Rubin, Stieglitz, Vicioso, and Kirk:  
Department of Internal Medicine, The University of Texas Southwestern  
Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX  
75390-8889.

**Appendix Table. Faculty-Development Programs Meeting Literature Review Criteria**

Study, Year (Reference)	Participants	Interventions	Outcomes	Barriers
Feather et al., 1988 (8)	Faculty (20 to 25 yearly) from 6 disciplines (medicine, nursing, allied health, social work, education, and social sciences); 25% were physicians (MDs) from 5 specialties (internal medicine, family medicine, psychiatry, surgery, and rehabilitation medicine)	Year 1: Weekly 3-h presentations in biomedicine and social policy Year 2: Implementation of curriculum innovation	Faculty satisfaction >3 on a 5-point scale Unchanged attitude and knowledge Increases in reported professional activity	Lack of motivation Inability to maintain commitment Lack of rewards for time required
Fasser et al., 1988 (11)	Faculty (63 faculty members over a 3-y period) from 14 health-related disciplines: medicine, nursing, physician assistant, dentistry, dental hygiene, home economics and design, social work, dietetics, optometry, pharmacy, psychology, medical sociology, health care administration, and health education*	2-y curriculum of modular readings Two 4-d institutes Personal action plans	Survey of activities of 43 participants showed that 51% were involved in course or curriculum development, 16% were involved in training faculty in geriatrics, and 63% were preparing papers in geriatrics	
Robbins, 1993 (10)	29 midcareer faculty members in family practice, internal medicine, psychiatry	1 y of training at 1 of 4 Hartford Centers of Excellence in Geriatrics	Of 24 participants responding to a survey, 67% acquired a Certificate of Added Qualification in Geriatrics, 88% increased time spent in teaching geriatrics, 58% published articles, 88% felt that the intervention had a major effect on their career, and 88% recommended the intervention to others	Need to spend 1 y away Lack of support at home institution Training time too short
Swagerty et al., 2000 (9)	30 community preceptors in general internal medicine and family practice	9 evening sessions over 3 y	Retention of 87% at 18 mo; 95% of participants rated the intervention as highly satisfactory or excellent, 88% said that they would change clinical practice, and 88% said that they would change geriatrics teaching	
Silliman, 2001 (Personal communication)	Over 3 y, 17 faculty scholars (7 in general internal medicine; 5 in family practice; 2 in psychology; 1 each in physical medicine, rehabilitation, geriatrics, obstetrics and gynecology, and management)	4 modules presented in 2.5-h sessions over 1 y	Participants evaluated each module and the entire year and gave feedback on their activities after 6 mo; all 7 general internal medicine faculty used skills gained during the intervention in patient care, research, or teaching; 2 participants specified increased skills, activity, or both in teaching	Time commitment
Stratos, 2001 (Personal communication)	27 faculty from 25 institutions were trained as facilitators (1997–2001); 21 were from internal medicine and 6 were from family medicine	Month-long facilitator-training course included a series of 7 modules and resource curriculum Dissemination of an interactive-seminars curriculum to be used at each facilitator's home institution	Faculty scholars showed increased geriatrics knowledge, confidence in teaching skills, and plans to teach skills to residents As of 30 May 2003, 23 of the 27 facilitators had presented the curriculum to residents or faculty. Second-order outcomes were apparent: Assessment of 33 faculty attendees at 6 sites and 50 resident attendees at 11 sites had increased knowledge, skills, and attitudes	
Sullivan, 2001 (Personal communication)	5 faculty in general internal medicine	In a 10-mo period, participants had nine 90-min didactic sessions on geriatric content and teaching skills, 5 half-day clinic sessions with geriatricians, 2 hospital rounds with acute care geriatrics patients, and development of geriatrics patient care and educational materials	Increased geriatrics knowledge Increased confidence in teaching geriatrics Two participants changed career direction; the other 3 are more "sensitized" to geriatrics issues	

\* Numbers of faculty members from each discipline were not specified.