Fellowship Training in Academic General Internal Medicine:
A Curriculum Survey

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Objective: To determine whether current fellowships in general internal medicine (FGIM) meet the perceived needs and objectives of physicians entering careers in academic internal medicine.

Design: A modified Delphi method yielded the 18 curricular elements included in the mailed survey. Participants outlined both actual and ideal fellowship experiences by rating the degree of emphasis of each curricular element on a Likert scale. Respondents then prioritized elements by rank-ordering them on perceived importance. Current job descriptions and opinions on related issues in FGIM were collected.

Participants: Potential fellows, current fellows, and recent graduates were surveyed. Individuals were identified through the Society of General Internal Medicine associates' mailing list and solicitation of program directors. Nonfellow associates served as the proxy group for potential fellows.

Measurements and main results: 579 surveys were mailed; 348 (60%) responses were received, of which 288 (50%) were suitable for analysis. Of all respondents, 38% were current fellows and 40% were recent graduates. When asked to prioritize educational needs during fellowship training, respondents ranked research methodology, ambulatory medicine, critical review of the literature, epidemiology, biostatistics, teaching skills, medical consultation, grant writing, preventive medicine, and design of educational curriculum as the top ten. Only minor deviations in rank order were found between graduates and nongraduates. Mean Likert scale scores for degree of emphasis of each curricular element in graduates' actual fellowships were compared with mean scores for graduates' ideal fellowship descriptions. High-priority elements that were perceived as adequately emphasized included research methodology, critical analysis of the literature, epidemiology, and biostatistics. High-priority elements that were perceived as inadequately emphasized included ambulatory medicine, teaching skills, medical consultation, grant writing, preventive medicine, and design of educational curricula.

Conclusions: FGIM largely meet the expectations of their fellows for preparation for research responsibilities. However, several curricular elements concerned with preparation for future clinical and teaching responsibilities are perceived by graduates as underemphasized. These areas deserve increased emphasis during fellowship training to better prepare fellows for their future roles in academic general internal medicine.

Key words: fellowships, general internal medicine; academic medicine; curricula. J Gen Intern Med 1991; 6:460–465.

FELLOWSHIP TRAINING is becoming a prerequisite to a career in academic general internal medicine. The 1990 Society of General Internal Medicine (SGIM) "Directory of Primary Care Internal Medicine Residency and Fellowship Training Programs" lists 67 fellowship programs. The primary goal of fellowships in general internal medicine (FGIM) is to train faculty for careers in academic general internal medicine. These programs are usually administered by general medicine faculty; program funding may originate locally or from government or private agencies. Most FGIM are still in the developmental stage; only half of all such programs reported more than three graduates in 1988.

There has been no formal delineation of training requirements for physicians choosing to pursue careers in academic general internal medicine. Unlike subspecialty areas in internal medicine, there is no formal certification process for physicians who complete FGIM and there is no accreditation process for these fellowship programs. Recently, the SGIM Interest Group on Fellowship Training has begun to outline their perspectives on the goals and objectives of fellowship training in general medicine. The goal of this project was to outline the educational content of current FGIM from the perspective of recent fellows and to outline the educational needs during FGIM as perceived by recent, current, and prospective fellows.

METHODS

Survey Design

We designed the survey instrument using a modified Delphi method. The initial source of the 18 curricular elements referred to in the questionnaire was the working draft of the SGIM Interest Group on Fellowship Training position paper. Faculty members of the authors' departments of medicine and steering committee members of the SGIM Associates Interest Group
participated in the design of the survey instrument. The questionnaire was pilot-tested among members of the same group.

In its final form, the survey instrument contained four sections. Respondents were first asked to design their "ideal" FGIM by assigning varying degrees of emphasis to the 18 curricular elements, using a modified Likert scale. The Likert scale options were "not at all," "limited exposure," "intermediate exposure," "moderate emphasis," and "heavy emphasis." Our definition of each of these terms was provided in the respondents' instructions (copies of the questionnaire are available upon request). Respondents who had completed a fellowship in general internal medicine then rated the same 18 curricular elements by perceived degree of emphasis in their actual fellowship experiences, using the same Likert scale. All respondents then ranked the 18 curricular elements based on perceived importance to fellowship training. Space was provided for respondents to write in additional curricular elements. The survey also solicited biographical information, job descriptions, descriptions of productivity during fellowship training, and opinions on related issues in FGIM.

Target Groups

The target groups for the survey were current, recent, and potential fellows in general internal medicine. Current and recent fellows in general internal medicine were identified by soliciting mailing lists from all 62 FGIM program directors listed in the 1988 SGIM "Directory of Primary Care Internal Medicine Residency and Fellowship Training Programs."1 The group we chose to represent potential fellows were SGIM associate members. SGIM associate members are by definition still in training, either students, residents, or current fellows. This group was identified through the SGIM Administrative Office. The SGIM mailing list was cross-referenced with the list generated by the program directors to avoid sending current or recent fellows who were also associates two questionnaires. Respondents were excluded from analysis if they were medical students; had specialty training in any area with a board certification, such as geriatrics, occupational medicine, or preventive medicine; were noninternists; or had completed their FGIM training prior to 1985. The first mailing, with stamped, self-addressed return envelopes, took place in October 1989. A second mailing was completed in January 1990.

Data Analysis

Responses from completed questionnaires were entered into a database file by one of the authors (JDO). Because many respondents chose to rank-order only a subset of the 18 curricular elements, we initially chose three separate analysis schemes: 1) the frequency with which an element was ranked in the top five elements, 2) the frequency with which an element was ranked in the top ten elements, and 3) a point score system in which a ranking of "1" received 10 points, a ranking of "2" received 9 points, etc. A ranking below "10" received 0 points; an average rank score was then derived for each curricular element based on the total number of respondents in the group analyzed. Because all three ranking systems yielded virtually identical results, we report only the average rank score for each curricular element. Mean Likert scale scores were tabulated for each curricular element in the ideal fellowships and for each curricular element in the actual fellowships. For each of the 18 curricular elements, we subtracted the mean "actual" Likert scale score from the mean "ideal" Likert scale score to determine which elements were perceived as underemphasized. When these differences were arrayed from greatest to least, there was a natural break between curricular elements with differences of more than 0.75 Likert points and those elements with differences of less than 0.75 Likert points. A difference of 0.75 Likert points between actual and ideal fellowships for any curricular element was thereby chosen as an indication of underemphasis of that element.

RESULTS

We received lists of current and recent fellows from 39 of 54 (72%) FGIM program directors. One of the 15 program directors who did not respond had a total of over 20 graduates. However, the other 14 programs averaged two total graduates per program. Of the 39 programs from which we did receive lists of fellows, at least 31 programs are represented by at least one respondent to our questionnaire.

We mailed 579 surveys and received 348 (60%) responses. Of the responders, 60 were ineligible for this study: 24 had had subspecialty training other than general medicine or were noninternists, 15 had completed FGIM training more than five years ago, one was a medical student, and 20 had supplied inadequate or uninterpretable biographical data. The following results summarize 288 responses representing 50% of the total number of surveys mailed.

Of the respondents, 65% were male and 85% were between the ages of 25 and 35 years. Current fellows numbered 109 (38%), recent graduates totaled 114 (40%), and the remainder were medical residents (22%).

Respondents were divided into two subgroups, graduates and nongraduates (current fellows and residents) of FGIM. These two subgroups had remarkably similar average rank scores for the 18 curricular ele-