Clinical Pharmacists in Family Practice Residency Programs

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A project was undertaken to determine the number, specific activities, and demographics of clinical pharmacists directly involved with residency programs in family practice. A survey was mailed to the directors of all 381 family practice residencies, with a request either to forward it to the participating pharmacist or to return the survey if a pharmacist did not directly participate in the teaching program. With two mailings, responses were received from 85.3% of the residencies, with 80 pharmacists completing surveys. While the involvement of pharmacists in family practice residencies was similar to that reported in a survey 9 years ago, academic appointments and funding, in whole or in part by a college of medicine, had increased. This increased involvement may represent an acknowledgment by medical educators in family practice of the value of pharmacists participating in residency programs.
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Residency programs in family practice have stressed a multidisciplinary approach to the training of family physicians. In addition to physicians in academic family practice and in other specialties, faculty have included psychologists, nutritionists, and clinical pharmacists. The primary purpose for involving clinical pharmacists in residency activities has been for the advancement of rational, cost-effective pharmacotherapy. An estimated 1.4 million prescriptions are written each year, yet the Health and Public Policy Committee of the American College of Physicians recently stated that house officers "are poorly informed about basic laws governing prescription and distribution of medications, and about basic elements of prescription-writing."[1] The availability of such pharmacologic classes of drugs as the angiotensin-converting enzyme inhibitors, as well as the proliferation of agents within older drug groups, presents many alternative therapies for common disease states. In addition, controversies regarding the place in therapy for medications such as benzodiazepines continue to present challenges to physicians practicing in primary care. Pharmacists with advanced training represent one practical approach to teaching clinical pharmacology, especially at the residency level, where interventions to improve prescribing habits may be most effective.[2–4]

Clinical pharmacists have been involved in the teaching, service, and research activities of some residencies for over 10 years. Through working on specific patient care problems with individual residents, as well as through case conferences, the involvement by clinical pharmacists may result in more appropriate prescribing by family physicians and may improve patient perception regarding the overall quality of their health.[4–7] Actual benefits have extended to patients, residents, and practicing family physicians as well as to the individual clinical pharmacists.[4,8]

In 1981, Johnston and Heffron[9] reported the results of a survey of the directors of the 359 residencies in family practice designed to determine the extent and outcome of the involvement of clinical pharmacists in their programs. Of the 323 responses obtained, 94 programs had a clinical pharmacist. While the roles of the clinical pharmacist varied among residencies, program directors were consistently positive in their assessments of the contribution of individuals.

Increased awareness of patient compliance, drug interactions, drug-induced disease, and costs of medications

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were identified by program directors as contributions by the pharmacists to their programs.

Since the report by Johnston and Heffron,[9] new controversies regarding the cost-effectiveness of many medications have confronted physicians in family practice. In addition, some residency training programs have faced cutbacks in their funding. As a result, the challenges to teaching and to the provision of rational cost-effective pharmacotherapy have increased significantly.

A project was developed with the primary objective to determine the number, specific activities, and demographics of clinical pharmacists directly involved with residency programs in family practice.

METHODS

A 46-item questionnaire was developed to assess the teaching, service, and research activities, as well as to describe the individual demographics, of pharmacists associated with residency programs in family practice. All answers to the questionnaire were confidential, and names and addresses of respondents were not required.

The questionnaire was mailed with a cover letter to the directors of the 381 residencies in family practice. The letter inquired whether a clinical pharmacist was directly involved either on a part-time or full-time basis with the residency program. If so, the questionnaire was to be completed by this pharmacist and returned to the investigators. If a pharmacist was not involved, the director was asked to return the uncompleted questionnaire.

After 3 weeks, a follow-up letter and self-addressed return postcard were sent to the residencies from which a questionnaire had not been returned. Again, the directors were requested to identify on the postcard whether a clinical pharmacist was involved directly with the residency. From this mailing, any pharmacists who were identified received a questionnaire directly from the investigators. Descriptive data analysis was performed using Statview 512+ statistical software.[10]

RESULTS

With the two mailings, responses were obtained from 325 of the 381 residencies (85% response rate). The directors of 79 residencies indicated that a pharmacist was directly involved in their program (24%). In another five residencies the position of clinical pharmacist was vacant but funded, and the directors of three programs currently were seeking funding for such a position. The directors of 37 residencies indicated that a clinical pharmacist was available indirectly for inpatient rounds. In two programs, a physician faculty member had either a pharmacy or pharmacology background.

TABLE 1. ACADEMIC AFFILIATION AND RANK OF SURVEY RESPONDENTS

Academic Affiliation	Number	Percent
College of Pharmacy	61	76
Clinical instructor	7	12
Assistant professor	15	25
Associate professor	10	16
Professor	3	5
Other	21	32
College of Medicine	29	37

The questionnaire was completed by 80 pharmacists from 79 residencies in family practice. Of the respondents, 68% were male, with a mean age of 34.6 years (range 24 to 51 years). A doctorate in pharmacy (PharmD) was held by 85% of respondents. In addition, 54 pharmacists had completed a residency and 11 had completed a fellowship program. The average respondent had been in his or her current position 4.7 years (range 0.18 to 15 years).

Of the respondents, 76% of the pharmacists had an academic appointment to a college of pharmacy, while 37% had an appointment to a college of medicine. Academic rank within the college of pharmacy is presented in Table 1.

To determine which organizations best served the needs of pharmacists involved with family practice programs, membership status in both pharmacy and medical societies was surveyed. Ninety percent of respondents belonged to the American Society of Hospital Pharmacists. Additionally, 38% were members of the American College of Clinical Pharmacy, and 12% were members of the American Pharmaceutical Association. Less than 20% were members of the Society of Teachers of Family Medicine.

Sources of funding for the position of clinical pharmacist are listed in Figure 1. The majority of positions were funded from more than one source, frequently split between a college of pharmacy and another source. The major source of funding was either hospital pharmacy departments (45%) or colleges of pharmacy (30%), though 24% of the positions were funded in whole or in part by either a college of medicine or a nonacademic residency. The range of annual salaries is presented in Figure 2.

Activities of Pharmacists

The respondents were asked to estimate the number of hours per week they were involved directly with the residency and the percentage of time they devoted to service, teaching, and research activities. Respondents

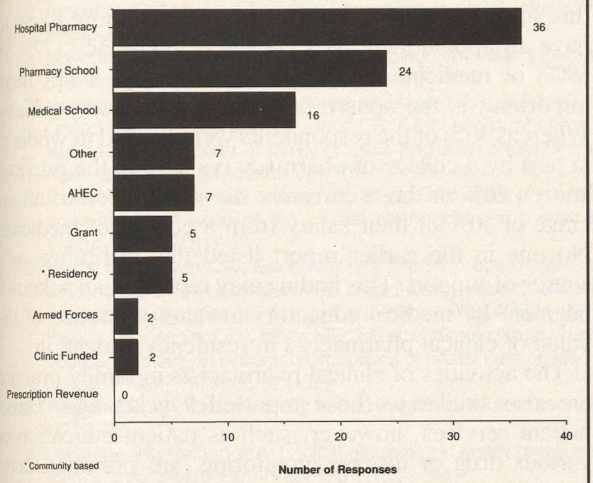

Figure 1. Sources of funding (more than one response possible) AHEC—Area Health Education Consortium.

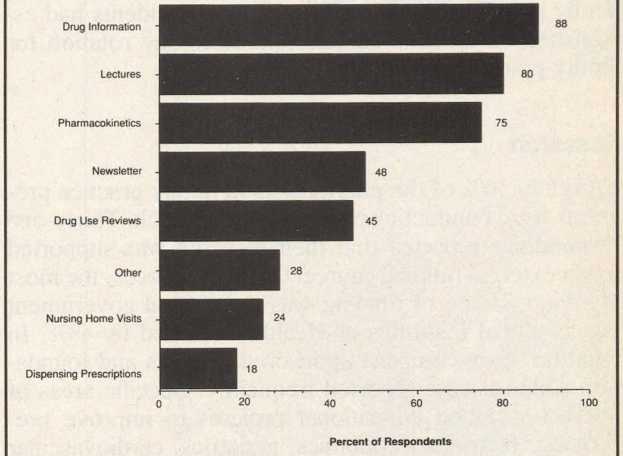

Figure 3. Services provided by pharmacist in family practice residencies.

spent an average of 21 hours directly involved with the residency.

Most of the pharmacists' time was spent in teaching (35%) and in providing general clinical service (36%). Only an average of 12% of the time devoted to the residency was spent in research, with other activities making up the remaining 17%.

The general services and direct patient-oriented activities are listed in Figures 3 and 4, respectively. Other services that frequently were identified included participation on geriatric assessment teams, supervision of the activities of pharmaceutical sales representatives, and the staffing of referral clinics for medication counseling.

Over 70% of the respondents reported they were routinely engaged in teaching activities, either as a preceptor in a clinic or as a discussant in a conference setting. During an average week, 10 hours were devoted to some type of teaching. These activities were directed to diverse groups, including family practice residents, medical students, and nurse practitioners, as well as to both under-

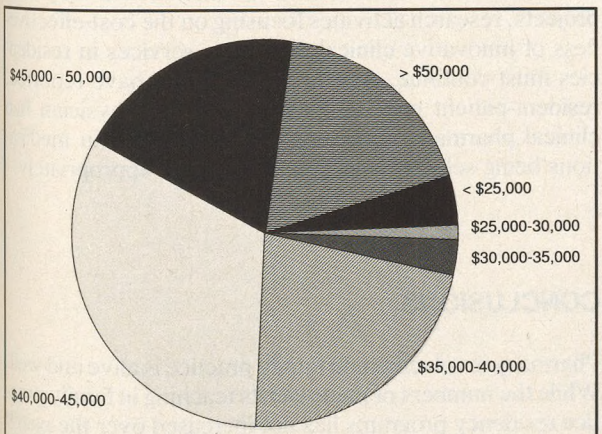

Figure 2. Annual salary of clinical pharmacists teaching in family practice residencies.

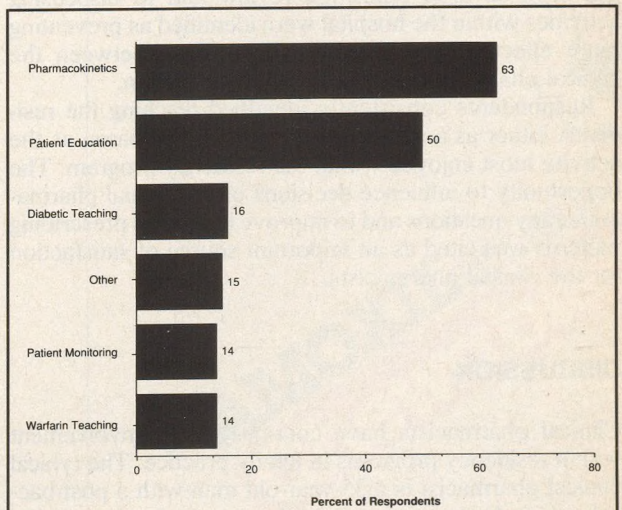

Figure 4. Patient care services provided by pharmacist in family practice residencies.

graduate and graduate pharmacy students on rotations in family practice. In addition, several respondents had established an elective clinical pharmacology rotation for family practice residents.

Research

Currently 50% of the pharmacists in family practice programs were conducting primary care research. Thirty-one respondents reported that their research was supported by an external funding source. Of these sources, the most common source of funding was the federal government (eg, National Institutes of Health), reported by 48%. In addition, drug company-sponsored projects and foundation support were reported frequently. Specific areas of interest included educational projects to improve prescribing, pharmacoeconomics, geriatrics, cardiovascular therapeutics, and pharmacoepidemiology.

Satisfaction with Role

Lastly, the clinical pharmacists were asked to assess their utilization by the residents, the medical faculty, and the professional staff and to rate their overall satisfaction with their role in the residency program. The majority felt that they were appropriately utilized both by the residents and the medical faculty with regard to their skill and knowledge. Overall, 81% of respondents were either satisfied or very satisfied with their role in the residency program, with only three feeling dissatisfied and none very dissatisfied with their role. Commitments to administrative duties such as drug utilization review and to dispensing activities within the hospital were identified as preventing more effective and consistent interaction between the clinical pharmacist and the residency program.

Respondents consistently identified teaching the residents, either as a group or on an individual basis, as the activity most enjoyed within the residency program. The opportunity to influence decisions on individual pharmacotherapy questions and to improve long-term prescribing patterns was cited as an important source of satisfaction for the clinical pharmacists.

DISCUSSION

Clinical pharmacists have continued their involvement within residency programs in family practice. The typical clinical pharmacist is a 35-year-old man with a post-baccalaureate doctor of pharmacy degree who has been in the same teaching position for almost 5 years and is satisfied with his role in the residency program. Comparing this profile to that reported by Johnston and Heffron[9] 9 years ago, with the exception of salary, little has changed. In this survey, the clinical pharmacists were more likely to have an appointment to a college of pharmacy (77% vs 69%) or medicine (37% vs 23%). Equally, if not more important, is the source of funding for these positions. Whereas 30% of the respondents were funded in whole or in part by a college of pharmacy (vs 27% in the previous study), 20% of those currently surveyed received an average of 50% of their salary from a college of medicine. No one in the earlier report listed this institution as a source of support. This finding may represent an acknowledgment by medical educators in family practice of the value of clinical pharmacists in residency education.

The activities of clinical pharmacists in family practice are also similar to those reported 9 years ago. Direct patient services, however, such as patient education or various drug or disease monitoring, are provided commonly by clinical pharmacists in this setting, whereas providing primary care was listed as a function by only 17% of the respondents in the earlier study. These services are not teaching activities, but may reflect the clinical pharmacists' desire to maintain their skills, provide patient services uniquely suited to pharmacists, generate income, or a combination of reasons.

The teaching activities of clinical pharmacists also have expanded to include precepting within the residency clinic, participating during rounds on inpatient family practice services, and coordinating patient case conferences. Teaching activities have evolved from just traditional didactic lecturing.

Interest in pursuing research projects, especially in pharmacoeconomics and pharmacoepidemiology in primary care, was noted by many respondents. While time constraints and commitments to other duties may limit projects, research activities focusing on the cost-effectiveness of innovative clinical pharmacy services in residencies must continue. As Chrischilles et al[4] have reported, resident-patient encounters in which the physician had clinical pharmacy services available resulted in medications being selected and monitored more appropriately.

CONCLUSIONS

Pharmacy involvement in family practice is alive and well. While the numbers of pharmacists teaching in family practice residency programs has not increased over the past 9 years, clinical pharmacy has maintained its position in the education of family practice residents even in an era of cutbacks in the funding of medical education.

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