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Development of an Academic Section of General Internal Medicine

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Recently, a renewed interest has emerged in academic general internal medicine [1]. This is viewed as one potential resource to help increase the number of primary care physicians [2–5]. A concern that the provision of health services has been compromised by overspecialization of physicians [6,7] reinforces this development. Beginning in 1969, largely in response to a departmental desire to improve educational programs and patient care, we developed a Section of General Internal Medicine within the Department of Medicine at the University of Chicago. We present here our views of the general internist, our thoughts on how he/she should be trained, and a description of the development of an academic section of general internal medicine designed to achieve the stated training and service objectives.

Alpert and Charney [5], Petersdorf [6], Ebert [3], and Reitermeier et al. [8] have emphasized the national need for more general internists to serve as primary care physicians. Others have stressed the need to establish new training programs in the academic medical centers [9,10]. Many departments have responded: some have modified their training programs for all trainees [11] and others have developed separate tracks for the future general internist [12]. An interesting example is the program described by Goroll et al. [13], which established initial objectives and then developed a training program to meet the objectives. Many of the new designs seem to be premised on the assumption that more experience in an ambulatory setting will improve the training of general internists and attract more medical students and residents into this field. Many of the revised programs have focused largely on the utilization of "block-time" by which a house officer functions full-time for three to six months in an ambulatory setting. Only one of the groups reporting describe any change in the organization of their outpatient operation or any change in the faculty responsible for teaching general internal medicine [13]. It appears that most existing programs are utilizing existing faculty, largely internists trained in a subspecialty, in their general medicine programs.

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We have defined specific goals and objectives for our program to fit our concept of the general internist. Our concept is similar to that of Burnham [14] and is consonant with the views recently expressed by Pellegrino [15].

The General Internist. The general internist provides comprehensive medical care of high quality to adults. He provides both initial as well as continuing longitudinal care for the large majority of his patients including those with either simple or complex medical problems, in both the ambulatory and the inpatient setting. Almost all of the internist's patients are seen by appointment. However, the internist is accessible to his patients at all times and assumes complete responsibility for their care. The vast majority of the general internist's patients have multiple and chronic diseases. In practice, the general internist spends about 40 per cent of his professional time attending hospitalized patients seven days a week and often more than once a day. In addition, the general internist often provides medical inpatient and outpatient consultation for family practitioners, surgeons, gynecologists, psychiatrists, dermatologists, urologists, and the like. In addition, the general internist utilizes consultants in the subspecialties of internal medicine, and in other fields, when appropriate. With rare exceptions, however, the patient regards the general internist as his doctor, and the physician-patient relationship is long-term. Approximately 60 per cent of the general internist's time is spent in his office. He has office hours four or five days a week, and in this setting he cares for twice as many patients as he has in the hospital at any time and is in the office four to five days a week. Each day, one or two new patients are cared for in the office.

The general internist, like other excellent clinicians, must be proficient in history taking, physical diagnosis, analysis of clinical data, establishment of priorities and in the decision making process that constitutes clinical judgment. He must be skilled in the diagnosis and management of complex as well as common diseases, particularly those diseases which affect multiple systems. We think that the patients cared for by internists, by and large, have more complicated and perhaps more serious diseases than are characteristic of the practice of other specialists. He must have a clear understanding of disease interactions, drug interactions, and the effect of diseases and drugs on each other. These skills require a profound knowledge of pathophysiology, the natural history of disease and clinical pharmacology.

Certain other clinical skills, many of which the general internist shares with other medical colleagues, are of such importance to the generalist that for him they assume the role of special skills. For example, the general internist must be especially adept at communication skills, both in the context of eliciting histories and in the context of education and instructing patients. As Tumulty [16] has suggested, communication is the most potent weapon of the internist. In addition, the general internist must be skilled in the identification and management of "functional" disorders, and he must be comfortable in dealing with patients whose symptoms cannot be readily ascribed to organic disease. His training should prepare him to identify and treat many common forms of psychopathology, particularly those which may masquerade as organic illness, such as depression, anxiety, alcohol and drug abuse, and sexual dysfunction. The general internist may be required occasionally to master certain technical skills, such as gastrointestinal endoscopy or the passage of temporary cardiac pacemakers, but these requirements will be dependent upon the locus of his practice and upon the availability of other specialists. The general internist traditionally spends a greater amount of time teaching than most other specialists.

The individual adult patient is the primary focus of the general internists' clinical efforts, and with rare exception he neither cares for children nor performs surgery or obstetrics. In his role as principal physician, the general internist serves to coordinate and supervise all medical efforts relating to his patient. He should be able to effectively communicate the occasionally conflicting recommendations of several specialist consultants to the patient, and to serve as the patient's informed counselor and adviser to assist him in choosing the diagnostic and therapeutic program which is in his best interest.

The Goals of Our Training Program. Our goal is to train future general internists having the knowledge, skills and attitudes described. In addition, we are trying to make general internal medicine more attractive to students and housestaff as a career choice. We are skeptical that federal legislation alone can substantially increase the number of physicians capable of providing the kind of general medical care we have described. Faculty role-models have a great influence on the career choices of students and housestaff. We do not believe that the expert subspecialist internist who serves as attending physician in general medicine will project to the trainees the attitude, philosophy and excitement which will attract them into careers as general internists. Therefore, in addition to modifying the curriculum for the general internist in training, we proposed that a group of general internists organized as an academic section, comparable and parallel to the sections of cardiology, hematology, endocrinology, and the like, should become responsible for the training experience in general internal medicine. This faculty should serve as role-models in their departments of medicine. The subspecialty internists within the department should continue to be a major source of teaching for pro-

spective general internists. The subspecialist is an indispensable resource for highly differentiated knowledge and technical skills, and is essential to the best care of some patient's problems. However, we believe that general internists and subspecialty internists working side by side and collaborating is the preferred arrangement.

Background. The Department of Medicine at the University of Chicago has functioned with a full-time, fully salaried faculty (no voluntary staff) integrated into a university which owns and manages its own hospital. The department operates both inpatient and outpatient facilities at the University Hospital, and has always had a strong commitment to research within the context of patient care and clinical teaching [17]. A primary emphasis of the Department of Medicine from 1927 to 1969 was on subspecialty development. This experience has provided us with an excellent appreciation of the advantages and disadvantages of a highly differentiated subspecialty system.

Although general internal medicine at the University of Chicago existed from the beginning, by the 1950's it was dwarfed by the subspecialty organization. However, in 1969, following the report of a departmental committee on house officer training, the faculty agreed that the general internal medicine inpatient service should be greatly strengthened and enlarged in order to provide each medical intern and resident with a more substantial training experience in general internal medicine. In addition, a consensus was reached that a continuous experience in ambulatory medicine was essential to excellent training in internal medicine. The department reaffirmed its conviction that the subspecialty organization provided great strengths for training and research but recommended that it should be complemented with a new and parallel effort in general internal medicine within the same hospital and the same department.

Organization of a Section of General Internal Medicine. In 1973, general internal medicine was established as a section within the Department of Medicine, analogous to the 10 already existing subspecialty sections. Like the subspecialty services, its clinical facilities are geographically localized. Further, its offices and laboratories are located close to the housestaff library, and to the offices of the Chief Resident and Chairman of the Department of Medicine. Formal recognition as a section has provided the general internal medicine faculty with a sense of group identity and the department faculty with a greater sense of long-term commitment to general internal medicine.

Development of the Faculty in General Internal Medicine. We have recruited faculty whose primary identification and responsibility are to the section of general internal medicine. At present, the section consists of six full-time faculty members (in addition to the chairman), plus three other faculty members who are related to the section but whose principal assignments are elsewhere, i.e., the emergency room and the student-employee health service. Five of the six faculty members have been chief residents in medicine in the past seven years, and one has been a Johnson Foundation Clinical Scholar.

The Development of a General Internal Medicine Inpatient Service. Since most of the inpatient services in Medicine were subspecialized, it was necessary to develop a new inpatient medical service to provide the desired educational opportunities for students and housestaff. Sixty-six of the 204 internal medicine beds have been allocated to general internal medicine. These beds are divided into three 22-bed units, each located on a single nursing division. A 4-bed intensive care unit for these patients is included. Each inpatient unit has a permanent chief of service from the section who oversees the care of patients, the teaching program and the performance of the entire health care team. Each of the units is also staffed by an attending physician, one first year resident, two interns and two or three third year medical students. Attending physicians, primarily from the section of general internal medicine, are assigned to the inpatient service for one month periods. The attending physician is responsible for all the patients on the service, makes formal rounds six or seven mornings a week and is informally in contact with the service throughout the day.

This service cares for patients with both simple and complex problems, including intensive care medicine. Many of these patients are new to the institution and thus present without known diagnoses. The ratio of faculty members to residents and students is very high, and one-on-one teaching is frequent. The inpatient setting has the additional advantage that many acute illnesses are reversible, and such illnesses have easily discernible changes which the student and housestaff may observe as they intervene with diagnosis and therapy.

The source of patients is as follows: 60 per cent of the patients are admitted from the Emergency Room; 12 per cent from the section's outpatient clinic; 15 per cent from the outpatient clinics of oncology and infectious disease; 5 per cent are referrals from physicians outside the University. The mean age of patients is 48 years, the average stay nine days, and there are approximately an equal number of men and women patients. Although many patients are acutely ill, a significant number are admitted for evaluation of complicated diagnostic and therapeutic problems as well as for the treatment of chronic diseases, such as diabetes, hypertension, congestive heart failure, pneumonia, asthma, chronic lung disease and alcoholism. Nearly

all patients who present for the first time to our emergency room and who require admission are admitted to the general internal medicine service. Exceptions to this rule are patients who require admission to specialized units, i.e., the coronary care unit or hemodialysis unit. Most of the admissions to the subspecialty services come from their own outpatient clinics or by direct referral from physicians outside the University. Thus, there is little or no conflict between the general and the subspecialty services regarding admissions.

The Development of a General Internal Medicine Outpatient Service. A general internal medicine outpatient service was developed within the section of general internal medicine in 1971 to provide comprehensive continuing, long-term ambulatory care. This outpatient unit now cares for approximately 15,000 patients each year or about one quarter of the total patients who visit the department of medicine. About 15 per cent of these patients are new to the institution, similar to the proportion of new patients seen in the private practices of general internists. In 1974, one faculty member from the section became Chief of this service.

The new clinic program has three group practices, each composed of three faculty attendings, one fellow in general medicine, 10 medical residents and seven interns. Each team will soon have a nurse clinician. Each team has one or more clinic sessions a day. Continuity and comprehensiveness of care are emphasized.

A faculty member for the section, on a rotational basis, provides supervision and teaching in the clinic five days a week in a manner similar to that described by Goroll et al. [13]. The faculty attending is assisted by a senior medical resident who is assigned to one month of block-time in the clinic. Formal rounds analogous to inpatient or consult rounds are held each afternoon and are primarily oriented towards the first year trainees and their patients, although an increasing number of junior and senior residents are beginning to utilize this conference for help in solving their clinical problems and improving their education in ambulatory medicine.

Throughout their training at the University, every house officer in the Department of Medicine spends at least one-half day a week in the clinic. By the second or third year of training, many residents are spending two or three half-days a week in the outpatient department. In addition, our house officers spend a considerable amount of unstructured time functioning as primary physicians in the emergency room setting. The average number of patients per house officer varies but generally ranges between 100 and 200 for whom they serve as the principal physician, continuously. The average physician workload is three or four patients a session for the interns and increases to six to eight return patients and one new patient by the beginning of the first year of residency.

Evaluation of the competence of trainees is largely the responsibility of the senior medical resident and attending physician in the outpatient department who audit medical records, observe the trainee interacting with patients and direct the teaching sessions. The form of evaluation utilized employs a scoring system to determine the trainee's knowledge, skills and attitudes. This is supplemented by evaluations utilizing descriptive language to characterize the trainee's progress.

A newly designed modern clinic with a pleasant efficient practice environment is being developed. This new clinic will be opened in late 1977. We are struggling to achieve a management arrangement which is largely directed by the users of the facility.

Now that the clinic reorganization is near completion, attention will be directed toward research in this setting. One new faculty member in the section, trained for and interested in quality care science, has assumed the initiative in designing research projects to be conducted in the outpatient unit.

Development of the General Internal Medicine Consultation Service. The general internist frequently serves as a consultant to other physicians. Several years ago, Petersdorf [18] noted: "because of the overspecialization characteristic of departments of medicine, surgical departments frequently find that they cannot get a single 'good medical consultant;' all that seems to be available is a group of specialists. In a specialized setting, medicine on the wards is often practiced by a committee of consultants." Our section, having recognized the importance of the consultative role of the general internist, developed a consultation service in July 1974 to assist in caring for patients on other inpatient services, such as surgery, obstetrics and gynecology, psychiatry and dermatology.

This service is staffed by an attending physician from the section, one senior resident and two or three senior medical students. It provides prompt response to consultation requests 24 hours a day, seven days a week, and makes a special effort to interact personally (as well as through a formal note) with the attending physician and housestaff on the requesting service. In two years of operation, this service consulted on more than 1,000 patients. Almost all the patients had complex, multisystem problems. Approximately 15 per cent of the patients are eventually transferred to the section's inpatient service, and an additional 10 per cent are subsequently seen in the section's outpatient unit for follow-up care. In practice, the general internist may request the opinions of colleagues in subspecialty areas when the problem so warrants.

The consultation service has proved a beneficial educational experience for faculty, housestaff and students. For example, the faculty has discovered that

different skills are required for providing consultation than are required for managing the internist's usual practice. In contrast to the long differential diagnosis characteristic of the internist's practice, the consultative internist may have to arrive at a prompt and specific diagnosis utilizing his fundamental clinical skills often without many supplemental laboratory studies. In addition, this service has provided excellent opportunities for the fellows in general internal medicine. Each fellow now spends from four to six months on the consultation service. In addition, this service should provide an opportunity for research on the problems unique to consultative medicine, as these problems have not been studied in great detail up to this time.

Development of an Advanced Training Program in General Internal Medicine. We believe it is important that new faculty be trained who can join departments of medicine as teachers and scholars in general internal medicine. We have, therefore, established a two year fellowship in academic general internal medicine. This program is designed to provide an even greater depth of expertise appropriate to a teacher of ambulatory internal medicine, complex inpatient medicine and consultative medicine, and also to provide the trainee with background in educational technics, health care research and evaluation methodology. Each trainee must participate in independent research during his training program. The first three graduates of this program have each accepted faculty appointments in general internal medicine in university medical schools.

Broad Departmental Responsibilities. The faculty in the Section of General Internal Medicine seem well suited for some key functions of the Department. For example, one member is director of the housestaff training program and chairman of the committee on internship and residency selection. Another is coordinator of the student program in the Department of Medicine and supervises the third and fourth year clerkships. Three section members form a base of faculty who initiated relationships with community hospitals to the south of the University to assist in developing continuing educational programs in these hospitals, and to foster appropriate referral patterns from community hospitals to the University Hospital. Some faculty members within the section have become interested in problems related to the regionalization of health care and to manpower distribution in the geographic area surrounding our medical center.

These involvements have provided greater visibility of the Section and have provided additional points of contact with students and housestaff.

Discussion—Tentative Results and Problems. An academic section of general internal medicine has been developed to improve the range of clinical experience for students and house officers in our department, and to prepare a type of faculty for the future, the academic general internist. The development was facilitated by the close identification with the program by the chairman of the department and by the absence of a family practice program at the University. An inpatient service, an outpatient service, a consultation service and a fellowship training program in general internal medicine have been created and appear to be successful. The harmonious coexistence and mutual enrichment of a general internal medicine service with 10 subspecialty services in the same department has transformed our housestaff training program into one with great appeal to trainee applicants. The third year student clerkships have been strengthened markedly.

It is important to note that the section of general internal medicine has grown in size and function without disruption of the department or its subspecialties. In fact, strengthening of the subspecialty sections has occurred during the same period. Both general internal medicine and subspecialty medicine form a continuum of patient care, training and investigation. The department's bed census is high, and the outpatient offices are vigorously busy. Intradepartmental competition for patients is nil. Interestingly, the largest source of consultations to the medical subspecialty services originate from the general internal medicine service. All faculty interface positively with the general internal medicine service, as attending, consulting or admitting physicians. Pride in this service is general and shared by everyone in the Department of Medicine.

Many problems remain to be solved. The general internal medicine outpatient service is not maximally efficient, and professional supervision of care is not ideal there. As the outpatient unit improves, the proportion of time allotted to ambulatory care training will increase. Another serious defect, critically important to long-range goals, has been our inability to successfully launch research programs centered about the general internal medicine clinical activity. Further, the section has not had a significant impact on encouraging and teaching *technologic restraint* to house officers and students [19]. There is still a tendency on the general internal medicine service to underuse subspecialty consultation, sometimes to the detriment of optimal care of the patient and always to the detriment of our teaching program. Further, although we have recruited a cadre of academic general internists, insufficient time has passed to test whether the section and its programs can remain strong and self sustaining.

Attention to these problems is essential to the long-term vitality of general internal medicine as a genuine academic undertaking at the University. However, we believe we have demonstrated that a bona fide academic section of general internal medicine can be developed and can strengthen a highly subspecialized department of internal medicine. The existence of a

general internal medicine section, particularly when it is combined with strong subspecialty sections, can allow a department of medicine to respond to some contemporary challenges in American medicine, for example, the need for increased numbers of general internists.

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