

**The Overlapping Roles of Primary Care Physicians,
General Specialists and Sub-specialists
*(United States)***

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ABSTRACT:

The non-surgical care of adult patients in the United States is characterized by overlap from physicians practicing in several disciplines – family or general practice, generalists in internal medicine, and subspecialists in internal medicine. The overlap is best evidenced at the level of general or primary care delivered to the adult patient, where even subspecialists may deliver primary care to a portion of their patient population. Although it remains unclear exactly what will be the relative need for generalist versus specialist physicians in the future, there is general concern about the future status of primary care in the United States. This concern has been fueled in part by recent data indicating significant downward trends in the number of medical students choosing careers in either family practice or primary care internal medicine. To date, residency training programs in family practice and internal medicine have been designed independently, and often without consideration of the particular types of responsibility or scope of practice that will characterize the trainees' eventual activities. Future models of training may best take into account the variety of future career paths potentially pursued by internists and family practitioners, with educational reform being based upon the eventual nature and scope of practice of these trainees.

An analysis of the overlapping roles of primary care physicians, general specialists, and subspecialists in the United States can reasonably be divided into three components – a description of the disciplines involved, an examination of the activities currently provided by physicians trained in these disciplines, and a prediction of future changes based upon trends that will affect either future supply or future demand. In this paper I will consider each of these topics, combining relevant background information with a presentation of specific data and a discussion of factors that affect these data. Given that my background relates to medical education and the training of future physicians rather than to workforce issues *per se*, I will emphasize issues relating to training, presenting both quantitative information about the numbers of physicians being trained, and qualitative information regarding current and potential future models for the training of generalist (primary care) and specialist physicians. When referring to “primary care,” I will specifically be talking about the care of adult patients and not the care of children. Additionally, when discussing specialists and subspecialists (as opposed to generalists), I will be focusing on internal medicine and the recognized or accredited subspecialties that fall under the domain of internal medicine.

Setting the Stage: A Description of the Disciplines

Historical Background of Generalists and Specialists

During the first half of the twentieth century, the generalist physician or general practitioner (GP) clearly occupied the central position in the provision of healthcare in the United States (17). There was a dramatic change after World War II and into the second half of the century, with a striking trend toward specialization. For example, in 1938, approximately 79 percent of physicians considered themselves generalists, and only 21 percent were specialists. In contrast, the numbers in 1970 were almost reversed, with approximately 76 percent specialists and 17 percent generalists (8). In response to several reports in the 1960s analyzing the status of generalist physicians, the discipline of family practice was established in 1969, at which time the Residency Review Committee for Family Practice and the American Board of Family Practice were created. Shortly thereafter, the American Academy of General Practice was renamed the American Academy of Family Physicians (8). The number of approved family practice programs and the number of family practice residents rose rapidly after 1969, reaching a plateau around 1980 that remained relatively stable for more than a decade (Figure 1).

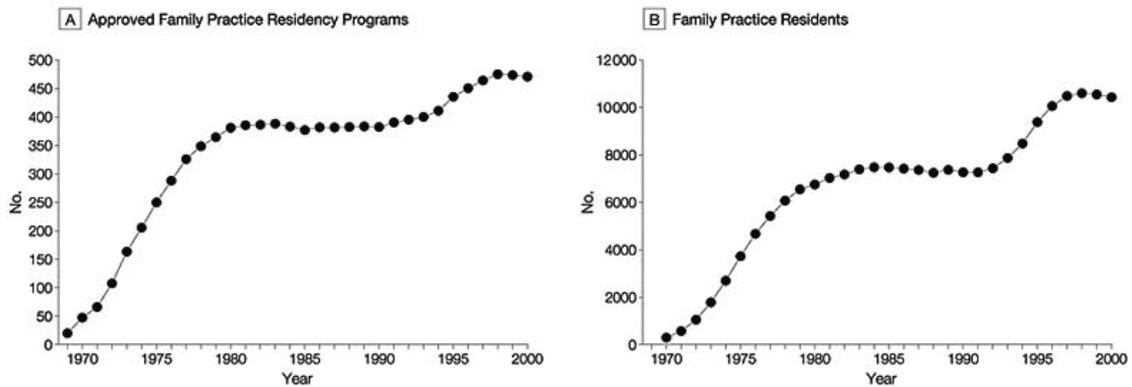


Figure 1. Training in Family Practice (1969-2000). From reference 8.

At the same time that family practice has been actively training and providing primary care physicians, the discipline of internal medicine has increasingly viewed the training of generalist (or primary care) physicians for adults as part of its purview. Whereas the general internist had for many years been considered a consultant for diagnostic problems, the development of primary care training programs, either as distinct programs offered by departments of internal medicine or as separate tracks within an internal medicine training program, reflected a shift towards general internists being considered primary care physicians for adult patients, as opposed to consultants. Nevertheless, in addition to those internists who maintain a generalist practice, whether as primary care physicians or as consultants, a large proportion of internists proceed to further subspecialty training. Some of these subspecialists practice purely within the realm of their subspecialty, and do not provide care in other areas of internal medicine that fall outside their subspecialty discipline. However, some internists who further train in a subspecialty often provide some primary care, either specifically for their patients with a chronic disease that falls within their subspecialty, or as an independent activity unrelated to their area of subspecialty expertise.

An issue that further complicates the discussion of physician activities in the United States, particularly within the discipline of internal medicine, is the comparatively new role of hospitalist physicians. Whereas both generalist and subspecialist physicians in internal medicine traditionally straddled the settings of inpatient and outpatient care, a number of driving forces have favored the development of physicians whose focus is the care of the hospitalized patient with a medical (as opposed to surgical) illness. Thus, the determinant of these physicians' interest is not a particular subspecialty or consultant discipline, but rather the setting of care. Within that inpatient setting, these physicians are actually generalists, serving essentially as inpatient primary care physicians rather than as consultants.

Family Practice

Important components of the philosophy underlying family practice include the comprehensive and longitudinal provision of care by the patient's personal physician,

using a holistic approach that emphasizes prevention and includes the social context and the emotional needs of the individual (8). Unlike the field of internal medicine, which often focuses more on the evaluation and management of disease, the field of family practice focuses on the integrated healthcare needs of the patient. In fact, as implied by the name, the family physician has an even broader responsibility – not only for the care of an individual, but for the care of all members of the family, and for considering the care of each individual as a component of the family and the wider community. On a practical level, an additional important difference between family practice and internal medicine is the expectation that the scope of family practice includes some care relating to disciplines that are clearly not part of internal medicine, namely pediatrics, obstetrics, and minor surgery.

The formal description of training for family practice stresses two important principles: 1) continuity of care; and 2) family-oriented comprehensive care (1). The Family Practice Center represents a primary setting for the ambulatory training of family practice residents, in which trainees can provide “continuing, comprehensive care to a panel of patient families.” Additionally, trainees obtain a significant inpatient experience through rotations at one or more hospitals that are affiliated with the training program.

Training programs in family medicine have a duration of three years following graduation from medical school. Within that time frame, trainees cover a broad range of curricular areas, summarized in Table 1.

Table 1. Curricular Experiences in Family Practice Training (from reference 1)

| | |
|--|---|
| Human behavior and mental health | Emergency care |
| Adult medicine | Community medicine |
| Maternity and gynecologic care | Care of the older patient |
| Care of the surgical patient | Care of the skin and associated organs |
| Sports medicine | Diagnostic imaging and nuclear medicine |
| Care of neonates, infants, children, and adolescents | Practice management |

Within the above framework, specified time requirements for particular components of the training experience are summarized in Table 2:

Table 2. Training Requirements Within Family Practice (from reference 1)

| Discipline/Training Experience | Duration of Required Training |
|---|--|
| Adult medicine | 8 months minimum (6 months minimum in inpatient setting) |
| Maternity care | 2 months minimum |
| Gynecological care | 140 hours minimum |
| General surgery | 2 months minimum (ambulatory and operating room) |
| Orthopedics | 140 hours |
| Other surgical subspecialties (GU, eye, ENT) | Not specified |
| Sports medicine | Not specified (but must be in addition to the required orthopedics time) |
| Emergency care | 1 month minimum |
| Pediatric care (including neonatal care) | 4 months minimum |
| Care of the skin and associated organs | 60 hours |
| Practice management | 60 hours formal instruction |
| Electives | 3-6 months |

Internal Medicine

The scope of internal medicine is formally described as “encompassing the study and practice of health promotion, disease prevention, diagnosis, and treatment of men and women from adolescence to old age, during times of health and through all stages of acute and chronic illness” (1). Although “an attitude of caring driven by humanistic and professional values” is stressed, the discipline particularly focuses on the pathophysiology of disease and the scientific method of problem-solving and decision-making based upon the acquisition of objective diagnostic data.

Like family practice, the standard training program in internal medicine has a duration of 36 months. Besides core experiences in general internal medicine, the educational program must include experiences and training in the various subspecialties of internal medicine, as well as at least ½ day per week for the longitudinal, continuity care of general medical patients. The formal requirements stipulate that a minimum of 1/3 of the time must be spent in the inpatient environment, and a minimum of 1/3 of the time spent in the ambulatory environment. Additional specific curricular requirements are summarized in Table 3.

Table 3. Training Requirements Within Internal Medicine (from reference 1)

| Discipline/Training Experience | Duration of Required Training |
|--|---|
| Inpatient services | 6 months minimum in year 1; 6 months minimum over years 2 and 3 combined |
| Emergency medicine | 1 month minimum |
| Critical care unit(s) | 3 months minimum |
| Ambulatory experience | Minimum of 1/3 of total training, including longitudinal and block experiences, and including up to 2 months of emergency medicine experience |
| Subspecialty experience | Not specified |
| Consultative experience (to other specialties) | Not specified |
| Geriatric medicine | Not specified |
| Adolescent medicine | Not specified |
| Gender-specific health care | Not specified |
| Experiences in other specialties (e.g., neurology, psychiatry, dermatology, etc.) | Not specified |

For physicians intending to enter one of the subspecialties of internal medicine (e.g., cardiology, gastroenterology, endocrinology, etc.), fellowship training of two or more years follows the three-year program in internal medicine. Selected individuals pursuing additional subspecialty training may “short-track” their internal medicine experience from three years to two years before advancing to their fellowship.

Current Data Re Physician Numbers and Provision of Clinical Care

Physician Distribution by Discipline

According to data collected and published by the American Medical Association, primary care physicians currently comprise 33.9% of the total number of physicians in the United States (836,156), in comparison with 36.8% in 1975 (2). In the year 2000, the largest number of primary care physicians was in internal medicine (101,353), compared with 71,102 physicians in family practice and 15,213 physicians in general practice. Additionally, approximately 75,000 physicians at that time were subspecialists within internal medicine (Table 4).

Table 4. Physicians in Family Practice, Internal Medicine, and Internal Medicine Subspecialties (2000) (from reference 2)

| Discipline | Number of Physicians |
|---|-----------------------------|
| Family practice | 71,635 |
| General practice | 15,213 |
| Internal medicine (general) | 101,353 |
| Internal medicine subspecialties | 75,050 |
| Allergy | 3,620 |
| Cardiology | 21,025 |
| Endocrinology and diabetes | 4,485 |
| Gastroenterology | 10,627 |
| Geriatrics | 2,110 |
| Hematology and oncology | 9,948 |
| Infectious diseases | 4,997 |
| Nephrology | 5,760 |
| Pulmonary and critical care | 8,706 |
| Rheumatology | 3,772 |

Data are also available regarding trends in the provision of primary care by physicians between 1970 and 2000. These data are shown in Figure 2. Because family practice training programs were only established in 1969, there were no family practitioners listed as providing primary care in 1970.

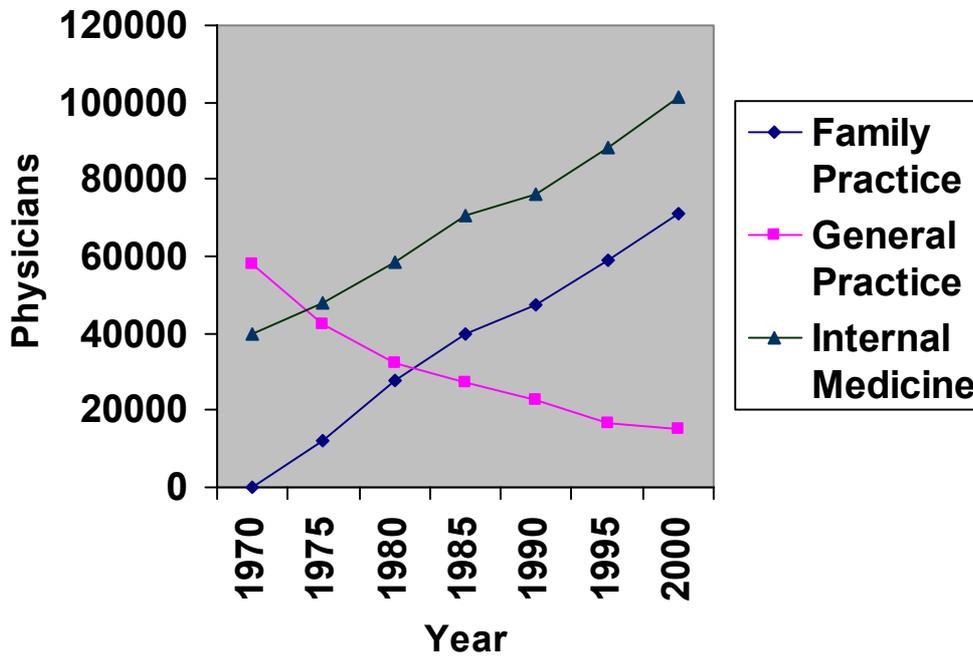


Figure 2. Primary Care Physicians by Specialty (from reference 2)

Provision of Primary Care by Subspecialists

As mentioned previously, many subspecialists in internal medicine do provide primary care to at least a portion of their patients, but it has been difficult to assess the magnitude of this so-called “hidden system of primary care.” In a study performed in the state of Washington that covered the time period of 1994-95, data are presented that address this particular issue (15). During that time period, 9.6% of patients made visits only to generalists, whereas 14.7% of patients made visits only to specialists. Patients for whom the subspecialist was responsible for the majority of the patient’s care comprised 7.8% of the total number of patients for medical subspecialists. Oncologists were particularly likely to have a “majority-of-care relationship,” since they frequently become the primary caretaker of patients with cancer. Nearly 50% of the visits to oncologists were by patients for whom they provided the majority of care; such patients comprised 18.9% of the total patient number seen by oncologists. Other subspecialists devoting a substantial percentage of their practice to patients for whom they provided the majority of care were pulmonologists (30.8% of patient visits) and rheumatologists (30.2% of visits). Of all the subspecialists, pulmonologists appeared to have the most extensive practices beyond their own specialty, based on the finding that 36% of diagnoses were considered to be “out of domain.” In addition, for 26.7% of their patients, most of the services provided by pulmonologists fell outside of their specialty domain.

Usual Sources of Care

Despite the fact that there were more general internists than the sum of family practitioners and general practitioners in 2000, many more office visits were to family physicians or general practice physicians than to general internists. According to data from the 2000 National Ambulatory Medical Care Survey, there were 822 million visits to physicians' offices. Family physicians or general practice physicians provided the care for 199 million of these visits, compared with 126 million visits for general internists (9).

Additional data are available from the 1996 National Ambulatory Medical Care Survey for the usual sources of care for patients in the United States with selected common diagnoses. Depending upon the particular diagnosis, family physicians or general practitioners were the usual source of care for 52-66% of patients with these conditions, whereas general internists were the usual source of care for 16-32% of these patients (Table 5) (9).

Table 5. Usual Sources of Care for Patients With Selected Diagnoses (1996) (from reference 8)

| | ASCVD (%) | Asthma (%) | CHF (%) | COPD (%) | Depression (%) | DM (%) | HTN (%) |
|------------------|-----------|------------|---------|----------|----------------|--------|---------|
| FP/GP | 52.0 | 58.0 | 58.5 | 62.9 | 65.5 | 64.3 | 61.3 |
| Gen. Int. | 32.0 | 16.6 | 28.0 | 15.8 | 22.9 | 29.8 | 29.8 |
| Other | 16.0 | 25.4 | 13.5 | 21.3 | 11.6 | 5.9 | 8.9 |

FP = family practitioner; GP = general practitioner; Gen. Int. = general internist; ASCVD = atherosclerotic coronary vascular disease; CHF = congestive heart failure; COPD = chronic obstructive pulmonary disease; DM = diabetes mellitus; HTN = hypertension.

Trends Affecting Future Supply and Demand

In the early 1990s, increased penetration of managed care led forecasters to predict an escalating need for primary care practitioners in preference to specialists. As a result, the 1990s were marked by a variety of initiatives such as the Robert Wood Johnson Foundation's Generalist Physician Initiative, intended to increase the number of physicians going into primary care. Curricular changes in medical schools, increasing emphasis on family practice at the levels of both undergraduate and graduate medical education, and attempts to redistribute physician reimbursement towards primary care were all intended to entice trainees to such fields as family practice and general internal medicine (7). Although the intended results were achieved for a short period of time, more recent data from the current decade indicate that the trends of the 1990s were relatively short-lived, and have been followed by significant decreases in the numbers of graduates of American medical schools who choose to go into family practice or primary care internal medicine. Specific data from the National Resident Matching Program (NRMP) are presented in Figure 3 (4,13).

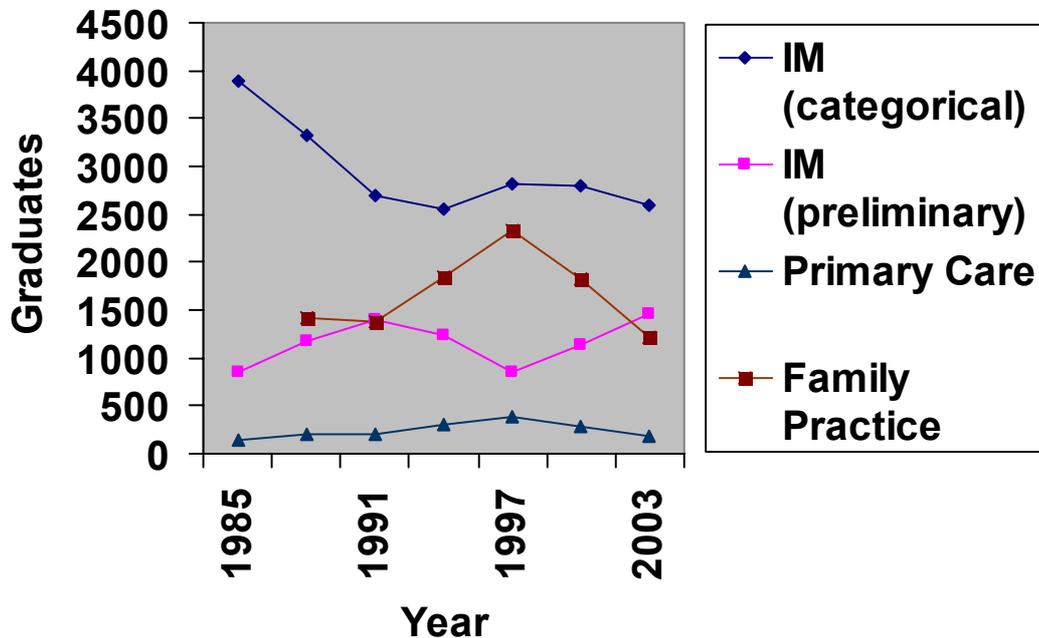


Figure 3. Residency Choices of American Medical School Graduates (from references 4 and 13)

Particularly dramatic changes have been experienced by residency programs in family practice and in primary care internal medicine (16). Both of these disciplines had their peak year in 1997 for the number of United States medical school graduates who chose to match in those fields. In comparison with the 1997 figures, the 2003 data show a 48% decrease in the number of American medical school graduates entering family practice residency programs, and a 50% decrease in the number entering primary care internal medicine training programs (4,13). Categorical (3-year) programs in internal medicine, which include some residents who will pursue further subspecialty training and some who will remain in general internal medicine, have experienced a 33% decrease in medical school graduates entering those programs in comparison with the peak year of 1985.

There appear to be a number of reasons why medical school graduates are shunning careers in primary care, including: 1) uncertainty about the future of primary care; 2) the promise of higher salaries in other specialties; 3) attraction toward what are considered the more “lifestyle-friendly” specialties; and 4) the dissatisfaction that they sense from current primary care practitioners, who convey their disgruntled feelings about the negative impact of a changing healthcare system on many aspects of their professional lives and their satisfaction. The reasons, however, do not include any active measures by

either medical schools or teaching hospitals to dissuade young physicians from entering the primary care disciplines (19).

As decreasing numbers of medical school graduates are choosing generalist careers, there are major concerns about the prospects for primary care and about our ability to meet the healthcare needs of our population (3,10,11,12,18). The aging of our population, with the resulting likelihood that individuals will have more than one illness or chronic condition requiring centralized coordination of healthcare, certainly supports the need for, and the importance of generalists (11). Continuing escalation of healthcare spending is also likely to be a driving force for curtailing high-cost specialty services and interventions in favor of a coordinated, less technology-intensive approach that is driven by a generalist rather than by multiple subspecialists.

However, there are also strong sentiments that our previous concerns for a shortage of primary care practitioners are no longer valid. For example, Cooper (6) predicts a future overabundance of primary care providers, accompanied by a shortage of subspecialists. He cites several reasons, some relating to a greater availability of primary care services, and others relating to an increased demand for subspecialty care. On the supply side, there has been a progressive movement of care in the ambulatory environment away from primary care physicians and toward non-physician clinicians, such as nurse practitioners and physician assistants, thus greatly expanding the primary care workforce. In the inpatient environment, hospitalists have taken over much of the care of hospitalized patients previously provided by patients' primary care physicians. On the demand side for subspecialists, we are still experiencing a backlash from patients who rejected the managed care notion of a primary care "gatekeeper," and who expect access to subspecialty experts providing state-of-the-art, disease-specific care. In addition, because patients are living longer and previously untreatable conditions are now better managed by sophisticated specialists, there is likely to be a progressive need for physicians with highly specialized training.

Given these discrepant predictions about our future need for generalists versus specialists, one can only look to the oft-quoted wisdom of brilliant minds of the past. As Niels Bohr expressed: "Prediction is very difficult, especially of the future."

Planning for the Future: Newer Educational Models

Just as workforce planners have been grappling with such issues as the relative needs of generalists versus specialists, medical educators have been discussing reform and restructuring of our system for training tomorrow's physicians. Educators are particularly concerned about clinical training, at both the undergraduate (medical student) and graduate (residency) levels. Recent reports issued by the Association of American Medical Colleges (*The AAMC Project on the Clinical Education of Medical Students*) and the Commonwealth Fund Task Force on Academic Health Centers (*Training Tomorrow's Doctors: The Medical Education Mission of Academic Health Centers*) have

summarized the problems and the challenges facing medical schools and academic medical centers in the United States (5,14).

In May 2003, a national conference called Millennium Conference III, co-sponsored by the Association of American Medical Colleges and the Carl J. Shapiro Institute for Education and Research, addressed issues and proposed educational reform for the disciplines of internal medicine and family practice throughout the continuum of undergraduate and graduate medical education. It was readily recognized at the conference that there is overlap in the future professional activities of internists and family practitioners, but their training programs have typically been quite independent of each other. One framework which might drive educational reform, developed by Dr. Michael Whitcomb and discussed at the conference, is shown in Figure 4.

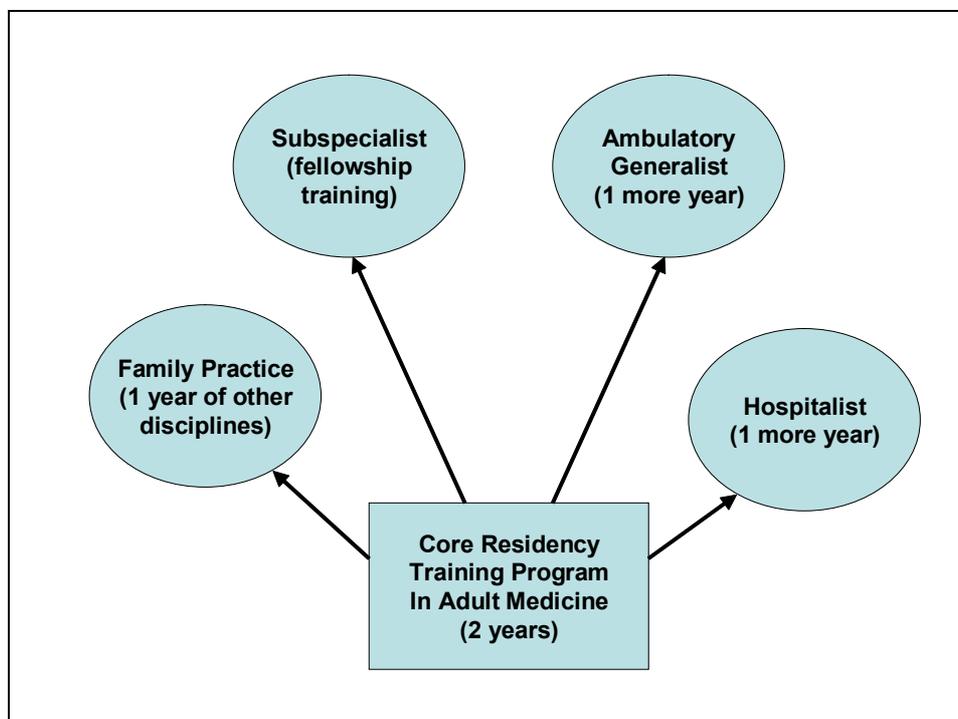


Figure 4. Model for Generalist/Specialist Training in Adult Medicine (from M. Whitcomb)

This model uses the assumption that the fundamental competencies for physicians who will be providing non-surgical care for adult patients can be delivered in a two-year core residency training program in adult medicine. Further training for each physician is then based upon the particular career path chosen by the trainee, and is customized to provide the type of experiences best-suited for the trainee's future scope of practice. At least one additional year of training would be required, and the nature of that year would depend upon whether the scope of future practice centered around inpatient (hospitalist) adult medicine, outpatient care of adults, or included the broader scope of disciplines

encompassed by family practice training. For those individuals desiring to enter a medical subspecialty, training for that subspecialty would commence after the two years of core residency training, rather than the current three years.

This model effectively dissects out some of the overlapping components of care provided by generalists and specialists, and attempts to align training with the eventual scope of practice. It also recognizes the separation between inpatient and outpatient care that has recently developed and is likely to continue. Is it the right model for future training? This is difficult to say at present. But it at least provides food for thought as we attempt to link the design of our educational programs with the healthcare needs of our society.

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