Prevention of Complications in Initial Development of Family Practice Residency Programs

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The development of a family practice residency program involves a complex process that requires careful attention to a wide range of factors, such as educational, clinical, attitudinal, economic, and administrative. Although there are many requisites in common with all such programs, each developing program must be adapted to the particular resources and needs of its own community. The initial planning phase is perhaps the most critical period in a program's development. There are many potential pitfalls that must be avoided in starting a program, any one of which can jeopardize its accreditation and future successful operation.

This paper presents a hypothetical case of a developing family practice residency program which illustrates a number of serious pitfalls. Common pitfalls are described, and ten basic principles are presented which are useful in planning and will help to prevent complications in developing programs.

The last seven years have seen the rapid proliferation of family practice residency programs in both medical schools and community hospitals throughout the country. The early programs had to start at a time when few guidelines were available as to the most effective ways to organize and develop programs *de novo*.

The situation today is different. There is now broad experience to draw upon, based on the successes and problems of the many family practice residencies which have been in operation for five or more years in various settings. The current strong emphasis on quality control of family practice residency programs incorporates the lessons learned from the early years. The Residency Assistance Program (RAP), funded by the Kellogg Foundation and jointly sponsored by the American Academy of Family Physicians, the American Board of Family Practice, and the Society of Teachers of Family Medicine, is a prime example of this emphasis.

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The basic premises of this paper are twofold: (1) that the initial planning stage is the most critical one in the development of a family practice residency program; and (2) that careful and objective planning which draws from the national experience of the past few years can avert most of the serious pitfalls and prevent complications from arising later when a new family practice residency program becomes operational. This paper will present a thumbnail sketch of a hypothetical developing program, briefly outline seven major pitfalls in program development, and suggest ten basic principles which will help to avoid complications in developing family practice residency programs. Although there can be no single blueprint for program development in different settings, each of which is unique, the principles presented are sufficiently fundamental to apply to all developing programs.

A Hypothetical Case

A group of interested family physicians, hospital administrators, and local medical leaders have been exploring for the last two years the feasibility of a family practice residency program in East Suburbia, a community of 75,000 people with four hospitals. There are no other housestaff training programs in the community. The hospitals are modern, well equipped, and have entered into some degree of sharing of services, although there is considerable rivalry among the hospitals on many issues. There are 120 physicians in the community representing all major specialties and most subspecialties. The community acts as a referral center for a sizable surrounding rural area. There is a state university in town with additional educational resources.

A well-respected family physician has practiced in East Suburbia for 15 years and became interested in family practice residency teaching three years ago. He has taken a leadership role in drawing together interested individuals to consider the possibility of starting such a program. He has attended two annual Workshops for Developing Family Practice Residency Programs sponsored by the American Academy of Family Physicians. He has indicated interest in becoming director of the program if it is started, and, in that event, would incorporate his solo practice into the teaching program.

Two initial polls of the medical community have shown that over 75 percent are interested in participating in the program in some way. Most physicians feel that more family physicians are needed in the area, although some internists and family physicians seem lukewarm to the prospect of a program.

There is a town with a population of 4,000 and one physician 15 miles away, which has expressed strong interest in starting a satellite clinic staffed by residents.

From the beginning there has been much concern expressed as to ways to fund a family practice residency program. None of the hospitals has seen itself in a position to provide a major commitment of funds. The smallest hospital (80 beds) has offered an adjacent facility of 3,500 square feet on a rent-free basis for the Family Practice Center. After a second hospital offered to contribute $10,000 per year to the residency program, both of the other hospitals offered similar amounts.

A planning group has been active for the last 1½ years, and has succeeded in developing an application for review by the Residency Review

Committee for Family Practice. A program has been designed involving the participation of all four local hospitals, partly due to the political difficulties involved if any particular hospital were to be excluded. Table 1 shows the basic curriculum design.

No provisions have been made for ongoing teaching in behavioral science or community medicine. The details of night call by the residents have not been fully worked out, except that a regular call system to cover the Family Practice Center is envisioned. Also envisioned is a mechanism, still undefined, by which third-year residents will "cover" the satellite rural practice in the neighboring community previously mentioned.

It has been decided to apply for a program with four residents in each year, so that a full complement of 12 residents is projected. It has been the consensus of the planning group that a larger program would be a burden on the community, and that this size program would be most acceptable to all concerned.

The application has just been completed and has been submitted to the Residency Review Committee for Family Practice in time, it is hoped, to be considered at their next meeting in May. Action by the Liaison Committee for Graduate Medical Education is therefore expected in July. Because of the perceived pressures to "keep the momentum going," it is strongly hoped by all involved that residents can start in July of the same year.

Some Pitfalls in Initial Program Development

The above hypothetical case report includes many "red flags" which would seriously jeopardize the viability of the projected program if implemented along the lines described. Although the hypothetical case may seem overdrawn in the number of these "red flags," any single one represents a pitfall which could prevent the development of a successful program. All of these pitfalls are common, and can occur in any part of the country.

With this background it is of direct interest to outline briefly these pitfalls under seven major categories. Each point will then be covered more fully in the subsequent section dealing with some basic principles of program development.

Loose Curriculum Design

The hypothetical case described reflects excessively loose curriculum design in several important respects: inadequate attention to total needs of a three-year curriculum in terms of breadth and depth of content; heavy emphasis on electives at the expense of meeting formal curricular requirements; and incomplete consideration of how the proposed curriculum would affect the nature and quality of resident teaching as well as the capacity of the residency program to provide continuity of patient care.

Excess Fragmentation Among Hospitals

There is a natural desire and tendency to involve several hospitals in a developing family practice residency program under circumstances where each indicates interest and support of the program and has something to offer to the resident's training. This can lead, however, to unfortunate results through dilution of the residency program and lack of integration of curriculum and teaching. In the hypothetical case described, there is no way that a 12-resident program can meaningfully involve four participating hospitals.

Lack of a Critical Mass of Residents

A critical mass of residents is important not only for the size of the total residency program but also for the number of residents available to each participating hospital. For example, whereas a complement of 12 residents would be fully adequate in relation to one or two hospitals and a single Family Practice Center, the size of this program could not possibly, without loss of continuity in both teaching and patient care, represent a sufficient critical mass to relate to four hospitals, a Family Practice Center, and a satellite rural unit.

Political Influence on Curriculum Design

It is only natural that political pressures may become a major force bearing on program planning because of the obvious importance of an adequate base of local support, both in terms of funds and commitment to the teaching program. Such political considerations may be counterproductive to the planning and organization of a viable teaching program. In the hypothetical case described, it appears likely that some of the hospitals are interested in the projected program only because of their concern about being "left out" of the program, and not for a primary interest in teaching family practice residents.

Lack of Commitment of Participating Hospitals

Commitment of hospitals to family practice residency programs can be measured in several ways: support from the administration of the goals and needs of the program; interest of the medical staff in teaching; support from clinical departments of the educational objectives for resident teaching in their respective disciplines; willingness of the hospital to grant future hospital privileges to graduates of the program on the basis of their training and demonstrated competence; and ability of the hospital to commit necessary funding to assure the successful operation of the program. In this hypothetical case, these factors have not been considered in sufficient detail, and the amount of funding that each hospital is willing to commit to the program is totally inadequate.

Lack of a Solid Funding Base

The major sources of funds required for any family practice residency program are usually twofold: (1) patient care income, and (2) contributions to the program from participating hospitals. Other sources of funds may be available to some programs at some stage in their development through grants (federal, foundation, etc) or, in some cases, through direct state appropriations (often on a capitation basis). Although these latter sources of funding can be very helpful, their amounts and continuity are usually uncertain. It is, therefore, a serious pitfall to base a program's initial and/or future development on "soft" funding without the early establishment of an adequate local funding base.

Lack of Time and Depth of Planning

Since the dimensions of required planning are numerous and complex, and since those involved in the planning process may become easily frustrated with the difficulties involved in this time-consuming process, it is a common hazard that the planning phase is underemphasized at the ex-

pense of both initial program accreditation and future successful development. Detailed planning is required in such diverse areas as: goals of the program; curriculum content and specific educational objectives; identification of teaching physicians representing a wide spectrum of disciplines; location of, equipping, and staffing of the Family Practice Center; development of the teaching practice; utilization of hospital and other educational resources in the community; and many other critical issues. Although it usually takes about two years to plan adequately for a program, it is the quality and depth of planning which is critical to success; and a longer time per se does not assure success.

Some Basic Principles in Initial Program Development

Based on the foregoing, it is useful to outline briefly some basic approaches to early program development that can help preclude some of the common pitfalls which have been described. Although the details of application of these basic principles will necessarily vary from program to program, the concepts themselves are universally applicable.

Continuity of Patient Care Must Be Assured Throughout the Residency Program

Continuity of care is of the essence in the teaching and practice of family medicine. Careful plans should be made to assure its implementation in the Family Practice Center and for all hospitalized patients admitted to one or more participating hospitals from the teaching practice. This subject has been addressed previously, including strategies to assure continuity of care by the residency program.[1,2] The individual resident will be unable to provide complete continuity of care to his/her panel of patients/families at all times due to inevitable conflicts in schedules. Most programs stress the importance of each resident's learning to function as a member of a group practice. The program should therefore be organized so that full cross-coverage (weekdays, nights, and weekends) is assured on a team basis; the cross-coverage should account for schedule conflicts, extramural rotations, sickness, and vacation.[3] Pairing of residents on some major clinical inpatient rotations, such as internal medicine, provides a valuable approach to meet this goal.[4]

Cross-Year Resident Interaction Must Be Assured

Medical educators have long recognized that a substantial amount of everyday teaching takes place on a housestaff level, frequently by residents one or two years ahead of the resident benefitting from such teaching. Since this is so, in initial planning and organization of a family practice residency program every effort should be made to build-in frequent cross-year resident interaction, both in the Family Practice Center and on inpatient rotations. In hospitals with other specialty housestaff, the teaching value

Table 1. Basic Curriculum

	Inpatient Rotations		Family Practice Center
First Year			
Medicine	4 months	Hospital A	
Pediatrics	2 months	Hospital B	
Obstetrics/gynecology	2 months	Hospital C	1 half-day/week
Surgery	2 months	Hospital A	
Emergency room	1 month	Hospital C	
Elective	1 month	—	
Second Year			
Medicine	2 months	Hospital C	
Cardiology	2 months	Hospital C	
Pediatrics	2 months	Hospital B	
Obstetrics/gynecology	2 months	Hospital C	3 half-days/week
Psychiatry	1 month	Hospital A	
Surgical electives	2 months	—	
Emergency room	1 month	Hospital A	
Third Year			
Family practice	3 months	Hospital D	5 half-days/week
Electives	9 months	—	

Table 2. Minimal Duration of Core Curricular Areas*

General medicine	8 months
Cardiology	150 hours
Other medical subspecialties	3 months
Pediatrics	4 months
Obstetrics	2 months
Gynecology	1 month
General surgery	2 months
Orthopedics	200 hours
Ophthalmology	100 hours
Otolaryngology	100 hours

*Behavioral science teaching presented as longitudinal thread during program.

of advanced specialty residents as consultants should be realized. These concepts have practical implications for program development. Thus, in the hypothetical instance previously described, no such cross-year teaching can be anticipated when inpatient teaching rotations of different resident years are in different hospitals, as is the case in internal medicine.

Continuity of Resident Coverage of Major Inpatient Rotations Must Be Assured

A "continuity rotation" has previously been described as a clinical rotation covered continuously by one or more residents throughout the year.[5] In order to meet the family practice resident's needs for training in internal medicine, for example, two rotations in different years are generally required. All programs likewise require inpatient rotations in pediatrics and obstetrics-gynecology; these may be in one, or more than one, residency year, depending on the amount of curriculum time accorded to these areas. Other curricular areas may form "continuity rotations" in programs where additional areas make up substantial emphases in the program. In any event, it is important that the continuity of coverage by residents during all months of the year be assured in order to provide continuity of patient care, continuity of teaching by attending physicians, and continuing impact of the residency program on these vital services.

"Continuity rotations" should vary in length according to the need for residents' training, the number of residents on service at any one time, and the size of the residency program. Thus, in an 18-resident program (6-6-6) with two first-year residents on internal medicine at a time, the length of rotation would be four months in order to maintain continuity of the rotation.

The Three-Year Curriculum Should Be Viewed as a Whole in Order to Include Sufficient Minimal Core Content for All Residents

Based on the experience of the last few years, a consensus has recently been developed by family practice educators involved with the Residency Assistance Program concerning *minimal* needs for core curriculum in family practice residencies. The *minimal* periods which are considered to be required for all family practice residents, regardless of program or part of the country, are shown in Table 2. It is recognized that duration of such experiences is but one variable describing the potential learning value of these experiences, which will also vary with the quality of teaching, spectrum of clinical material, amount of a resident's responsibility, motivation of the individual resident, and other factors.

Various strategies for curricular development in the family practice residency have previously been described.[6] It is clear that the prospective director of a newly developing program must be concerned with the ultimate curricular content when the program is at full complement of residents (usually two or three years after it starts). A particular problem is presented during the first and second years of program operation when the number of residents is limited and all portions of the curriculum cannot be implemented. During this critical period, the program director must keep both the short-term and long-term (full-complement) needs in mind, and should avoid starting prematurely parts of the teaching program which will be hard to change later or which will fail due to lack of resident coverage.

Progressive Responsibility for Patient Care Must Be Provided as Residents Develop in Clinical Experience and as Educational Needs Become More Advanced

It is clear that adequate responsibility for patient care is an essential ingredient in the equation of active learning. As residents' educational needs become more advanced in their second and third years, it is important that their level of responsibility for clinical decisions and patient management be increased according to ability and demonstrated skills. This may occur quite naturally in smaller community hospitals without other housestaff. In larger teaching hospitals with large housestaffs, multiple residency programs in other specialties, and highly structured teaching services, application of this principle requires special interdepartmental negotiations.

Adequate Fiscal Support for the Residency Program Must Be Assured

The costs of graduate medical education in all specialties are substantial. Current estimates for the cost per resident year in family practice are in the range of $35,000 to $40,000, including the resident's salary and prorated costs for faculty, staff, teaching materials, supplies and equipment of the Family Practice Center, and related operational costs. In addition, there are usually significant start-up costs of the program before the arrival of residents, particularly those costs related to remodeling or even construction of the Family Practice Center.

There are usually four possible sources of funding to offset program costs: (1) patient care revenue; (2) hospital's contributions; (3) state funding, often on a capitation basis; and (4) other grants from federal, foundational, or other sources. The latter two sources should be considered "soft," are often difficult to obtain, are uncertain from year to year, and may relate to start-up needs rather than ongoing operational needs. The first source, patient care revenue, is an important base of support for the program, but cannot be expected to cover more than 50 percent of total program costs at any stage in a residency program's development. The second category, the hospital's contributions, must therefore provide a solid base of funding for the residency program. The participating hospitals must be aware of their responsibilities in this respect, and a new program should not be started unless adequate local support of the program is evident.

Undue Fractionation of the Residency Program Should Be Avoided

There is frequently a wide range of expectations concerning the role of the family practice residency program in the community. The perspectives of the local Department of Public Health, local and regional health planning groups, hospital administrators, practicing physicians, and the program director are often quite divergent. There is no way in which a family practice residency program can meet all these expectations, however legitimate in themselves. Fractionation of the residency program among too many participating hospitals has previously been mentioned. The program director must also take particular care

to avoid overcommitment of the residency program in other ways, such as by staffing a satellite clinic and committing residents to other services outside of the formal educational program itself.

The Curriculum of the Residency Program Must Be Based Primarily on the Educational Needs of the Residents

Those who are principally involved in exploring the feasibility of a family practice residency program must not only assess the quality of available educational resources but also be sensitive to the reasons that the participating hospitals may elect to become involved in the program. While it is true that the family practice resident learns "by doing," the distinction between "education" (supervised learning experiences) and "service" (potentially unproductive of continued and expected learning) must be monitored. Curriculum development must be based on the educational needs of the residents, not primarily on the service needs of the participating hospitals and/or on other political considerations. Naturally, the well-organized family practice residency program will provide significant service to the participating hospitals, clinics, and attending physicians, but the progressive and continued learning of the residents must be kept in focus. Jason has stressed the importance of maintaining the relevance of medical educational experiences to the needs of future practice.[7] Valuable assistance in curriculum design is now provided by progress in research on the content of family practice.[8,9] Special efforts must be made to represent accepted concepts of family medicine in the teaching program, with particular emphasis on the family, not just the individual patient, as the object of care.

The Residency Program Must Include a "Critical Mass" of Residents

Since the family practice residency program is a complex entity involving continuity of patient care and teaching in the Family Practice Center and its related hospital(s), there must be an adequate number of residents in the program to meet the program's commitments to patient care, teaching, and related creative activities. There is now a general consensus that the smallest effective size of a family practice residency program is 12 residents (4-4-4) Practical considerations involved in the definition of the optimal size of a new family practice residency program include the following: (1) available educational resources; (2) need for family physicians in the area to be served by the program; (3) availability of funding and other kinds of support for the program; (4) the logistics of inpatient teaching rotations; (5) the logistics of night and weekend coverage; and (6) the size of the teaching practice.

An Adequate Period of Planning and Preparation Should Precede the Start of the Residency Program

The difficulties resulting from an inadequate period of planning have previously been mentioned. Even when the initial planning phase has resulted in a decision to proceed with the program's development, many detailed preparations are still required, and the best date to start with residents must be carefully considered. There are numerous problems involved with mid-year (eg, January 1) starts, and July 1 is usually the best time for residents to start their training. In order to meet that target date, first-year residents must be interviewed during the preceding fall, and the program's rank order list of applicants submitted to the National Intern and Resident Matching Program in early January.

Further "back-off" from these dates must be considered in view of the time required for the accreditational process, and the fact that residents cannot be recruited until accreditation is officially confirmed by the Liaison Committee for Graduate Medical Education (LCGME). Detailed planning is required to complete the program's application for approval by the American Medical Association. In order for this application to be considered by the Residency Review Committee for Family Practice, it must be submitted at least 18 weeks prior to a meeting of this committee. (In some cases, applications can be considered as late as 12 weeks prior to the meeting, but this cannot be assured.) Action by LCGME usually follows two months after that of the Residency Review Committee, so that at least six months are required from the date of submission of the program application to the earliest time that residents can be recruited. Attempting to shorten this cycle is to proceed at high risk.

Every effort should be made to recruit residents of the highest possible caliber in starting the program. It is also highly desirable to have the teaching practice in the Family Practice Center functioning smoothly and all of the other preparations previously outlined completed before the arrival of residents.

Comment

A planning group that is considering the feasibility of a new family practice residency need not operate in a vacuum. There is now a considerable base of experience throughout the country. Visits to neighboring operational programs are useful. Attendance at the Workshop for Developing Family Practice Residency Programs each spring in Kansas City is helpful. Consultation is also available to newly developing programs from the Division of Education of the American Academy of Family Physicians.

The critical importance of a careful and deliberate approach to program planning cannot be overemphasized. Time and effort spent here pay large dividends later in the prevention of serious complications which would otherwise prevent the start or jeopardize the future viability of a new residency program. To be sure, there are other potential pitfalls in starting a family practice residency which have not been mentioned, but the application of these basic principles will indirectly address most of the potential problems in planning, starting, and operating a successful program.

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