

Early Ambulatory Experience in the Undergraduate Education of Family Physicians

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A number of benefits have been claimed for early ambulatory experience in the training of family physicians, although few practical examples have been reported. This paper describes an approach to the education of first and second year medical students interested in family medicine which places heavy emphasis on community-based ambulatory care. During the first year, an elective introductory preceptorship permits students to participate in the office practice of a family physician in a limited role. Seminars are offered concurrently to provide integrating principles and perspective. In the second year, a nine-month-long continuity clerkship is offered in which students gain intimate contact with a small panel of families and practice the skills of primary care in the offices of family physicians. Clinical experience is accompanied by weekly seminars and integrated with elements of the required curriculum. Selected evaluation data are presented, which attest to the achievement of course objectives and provide support for the claim that this approach is beneficial to students seeking careers in primary care.

The recent literature in medical education is replete with articles describing the current shortage of primary care physicians in the United States and the efforts of medical schools to meet this need. An entire issue of a recent journal was devoted exclusively to the issues of primary care education.¹ One of the methods by which medical schools are dealing with this problem is by the development or expansion of family medicine programs.

The purpose of this paper is to describe an approach to the first and second-year education of medical students interested in family medicine implemented at the University of Washington. This approach emphasizes early patient exposure in off-campus ambulatory settings coordinated with clinically oriented classroom offerings.

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Background

Several authors have discussed the formidable problems encountered in developing and incorporating a new discipline into a well-established and overcrowded medical school curriculum. Barnett² notes that planners are faced with the task of determining how family practice can best contribute to the overall medical curriculum. Family practice has been described as a "horizontal" specialty in the sense that it is a synthesis of other disciplines, and its areas of specific responsibility may trespass on the established territories of other departments. Thus, the imposition of additional offerings by a nascent family practice department may be conceptualized as a "carving out" process. The experience of the Mayo Medical School illustrates how such carving out was successfully achieved at one traditionally oriented institution.³

On the same subject, Leaman⁴ argues that the development of a new discipline such as family medicine re-

quires careful definition of scope and purpose. He takes the position that a family medicine department should teach only those aspects of medicine which are either unique to or characteristic of family medicine, while the other clinical departments teach in those areas in which they are most expert. He cites the close doctor-patient relationship, the opportunity for continuity of care, and the understanding of families as the basic strengths of the family practice style. He thinks that family practice training should be introduced to medical students early in their educational careers because the teaching of these concepts requires interaction with patients over a long period of time.

Verby and associates⁵ are critical of traditional undergraduate medical education in large urban health centers. They suggest that such programs commonly fail to provide students with adequate opportunities for: (1) experiencing ongoing care, (2) observing the outcomes of continuous comprehensive care in the community, and (3) seeing representative samples of families throughout the socioeconomic continuum of our culture.

In a similar vein, Leaman⁴ notes that university faculty almost inevitably become institutionalized. He argues that the university setting fails to provide a realistic simulation of the private practice setting in which most family physicians will work. Thus, both Leaman and Verby present a case for providing the beginning medical student with clinical training in an off-campus, non-hospital setting.

Community Based Clinical Education

A number of cogent reasons have been cited for the inclusion of outpatient experiences early in the student's career. One of the most important, noted by Barnett,² is to facilitate the student's informed choice of a medical specialty. As Rakel⁶ puts it, "Family practice will be recognized by medical students as a desirable career only if it is presented to them in this light during their formative undergraduate years. This requires that the family practice faculty members offer a curriculum of recognized value that is highly motivating to the students. . . . Too often these courses are limited to

electives in the third and fourth years. The preclinical programs which appear to be most successful are those involving students in a continuing involvement with families for one or two years."

Scherger,⁷ writing from the student's perspective, suggests that many students initially choose family practice by default; that is, they are not so much selecting family practice as they are rejecting, the impersonal role models of the academic center. He notes that entering medical students often have an idealized image of the role of the physician and are eager to begin seeing patients. Thus, he argues that by permitting the beginning student to participate in the clinical environment, family practice can reinforce early preferences for patient care and provide realistic models of the personal physician.

Additional benefits from providing early clinical experience in a non-institutional setting have been cited in the recent literature. Scherger⁷ sees such exposure as an important means for students to experience the scope and flavor of family practice even before the student's skill level permits significant contributions to the treatment process. Leaman⁴ notes that many skills of the family physician are interpersonal and attitudinal and do not lend themselves to being taught in the classroom by conventional methods. He feels that early clinical experiences are particularly useful because they permit students to observe the patient-doctor relationship and to develop their own interpersonal skills. He adds that such experiences should help students develop an understanding of intra-family psychodynamics. Barnett² suggests that such early patient exposure in a natural setting helps to place later hospital rotations in perspective.

Verby⁵ cites several other advantages for the student in a community preceptorship: (1) increased insight into the operation of a medical office, (2) heightened appreciation of the role of other health professionals, (3) greater appreciation of the economics of health and disease care, (4) increased confidence and skill in extracting data, particularly behavioral information, (5) improved knowledge of common illnesses, and (6) increased understanding and maturity in areas of interpersonal relations. He also argues that early clinical exposure is highly

useful in helping to assess the student's aptitude and fitness to become a physician. Such an experience permits both student self-evaluation of his or her own temperament and motivation, as well as preliminary faculty assessment.

In the following section, an undergraduate program in family medicine is described which has been based largely on the rationale presented in the preceding paragraphs. Although the program is still evolving, it has been designed with a heavy emphasis on early clinical experience in non-institutional settings in order to take advantage of the benefits cited above.

Program Overview

Training of family physicians became a goal for the University of Washington School of Medicine and was accompanied by a major curriculum change in 1968. The medical school established a Department of Family Medicine, and 50 percent of the entering 1969 class (42 of 84 undergraduates) selected the "family physician pathway" during their second year. This response required rapid expansion of learning opportunities in family practice. Since that time, a comprehensive program introducing students to the principles of family medicine has been developed and integrated into the medical school curriculum. Although the emphasis of this paper is on the curriculum during the first two years, the total program will be briefly described below to provide perspective on the entire educational experience.

The curriculum in family medicine has been organized around the three stages of learning attributed to Alfred North Whitehead: romance, precision, and generalization.⁸ A series of elective courses available to students in the first two years of medical school comprise the "romance" and "precision" stages. In the first year, an introductory preceptorship is offered during which the student becomes familiar with the discipline of family medicine and gains understanding of the demands of primary care. In the second year, a continuity clerkship provides the student with some of the knowledge and skill necessary for competence in the field along with gradually increasing responsibility in the patient care process.

The stage of "generalization" occurs during the third and fourth years in a required rural residential clerkship of six weeks' duration, and in an advanced preceptorship, during which the student synthesizes and applies the knowledge gained to date in the actual delivery of primary medical care. The community-based faculty have participated actively in the development of each of these courses. The third and fourth-year program has been described in previous publications.^{9,10} A more detailed description of the program offered during the first two years is presented below.

Introductory Preceptorship

The introductory preceptorship in family medicine is available to all medical students on an elective basis throughout the first year. Its goal is to help the student acquire an understanding and appreciation of the role of the family doctor in meeting the medical and health needs of the community. Students meet with preceptors in their offices one morning per week for one quarter and attend seminars conducted by the course coordinator.

The specific objectives of the course, categorized by major headings, are as follows:

Knowledge

1. To help the student learn what common and important health problems are brought to the family physician.
2. To help the student understand and appreciate the comprehensive nature of the family physician's task.
3. To help the student understand and appreciate the continuing responsibility and relationship of the family physician to his or her patients and their families.
4. To provide a correlation between core curriculum, basic science material, and clinical practice.

Skills

1. To develop skills in interviewing and the doctor-patient relationship.
2. To develop skills in communication and sharing responsibility with other health professionals.

Attitudes

1. To promote an appreciation of the role of the family physician in the health care of patients and their families.

2. To help students assess their own career goals.

3. To develop sensitivity to styles of practice and how they are integrated into other aspects of the physician's life.

These objectives are achieved by requiring students to make systematic analyses of their preceptors' practice in addition to introductory level clinical participation. Review of a sample of evaluation results for the 1975-1976 year indicates that 82 percent of the student-patient encounters are with continuing patients with an approximately equal mix of chronic and acute complaints. Students see slightly more female patients (62 percent), and although they are exposed to patients of all ages, most of their experiences are with patients between the ages of 18 and 34 (30 percent) and 35 and 64 (41 percent). Of these encounters, 37 percent emphasized diagnostic elements, 61 percent involved primarily therapeutic procedures, and 2 percent led to referrals. Comprehensiveness of care is in part assessed using George James' method of disease staging.¹¹ Students recognized 8 percent of encounters as addressing the foundations of disease by attention to such items as immunizations and health habits, 25 percent as seeking presymptomatic disease through screening and health maintenance procedures, 56 percent as treating acute symptomatic disease, and 11 percent as caring for patients with chronic disease. Thus, the evidence indicates that the students see a broad spectrum of patients and are being exposed to the comprehensive nature of the family physician's practice.

Three 2-hour seminars are used to introduce students to important orienting concepts of family practice. The seminars also provide a forum for students to review and compare their observations and to share anecdotes about their experiences. Under the direction of the seminar leader, students explore the implications of their observations, drawing tentative conclusions about the nature of family practice, the importance of continuing

Table 1. Levels of Patient Care Involvement Over Three Terms for 38 Continuity Clerkship Students

Student Levels of Involvement	Term		
	Fall	Winter	Spring
Percent visits in observation role	45	27	22
Percent visits in assistance role	35	39	36
Percent visits in primary role	20	34	42
Percent visits — total	100	100	100

care, their own educational needs, career options, and other issues reflected in the course objectives described above. The course may be repeated, offering students the opportunity for a continuing relationship with a community physician and selected patients.

Evaluation of the course is obtained by means of experience logs maintained by students, questionnaires, and by interviews with both students and preceptors. Data collected over the past several years, briefly sampled above, demonstrate that the course objectives are being met and suggest that this elective has an important place in the pre-clinical curriculum.

Continuity Clerkship

As a logical extension to the first-year introductory preceptorship, a clerkship was designed to amplify the concepts introduced in the first year and to introduce other concepts that can only be taught over an extended period of time. In 1974, an elective continuity clerkship was introduced in which second year students spend one half-day each week with a practicing family physician over the period of one academic year. All the physician-teachers are in active practice; half are in conventional private practice settings, several are in a prepaid group, and some are in model clinical units associated with family practice residency programs. A weekly seminar accompanies this course.

The continuity clerkship emphasizes four main goals:

1. To allow students to participate in comprehensive, continuous care in a family practice setting. Student access to families and patients who can be seen over a long period of time is essential to the course. Arranging for longitudinal student contact with patients has sometimes been difficult because of the student's limited weekly time with the physician. However, strong efforts are made by both students and preceptors so, for the most part, this goal is successfully attained. A longitudinal patient care project, whereby students document and interpret their experience with particular families, has become an important means of focusing student attention and careful analysis on the role of continuity in medical care. Approximately eight percent of contacts over the nine months are made with family members specifically identified as longitudinal care families. Preceptors try to schedule return visits for any patients requiring follow-up on the day when the student will be available. One consequence of the long-term relationship between student, preceptor, and selected patients is the student's increased involvement in the medical care process.

Students report their level of involvement with each patient seen. Levels of student involvement in patient care are classified as either "observational," "assistance," or "primary." The percent of primary role involvement increases from 20 percent in the first term to 42 percent in the third term. All student-patient contacts are supervised by the preceptor.

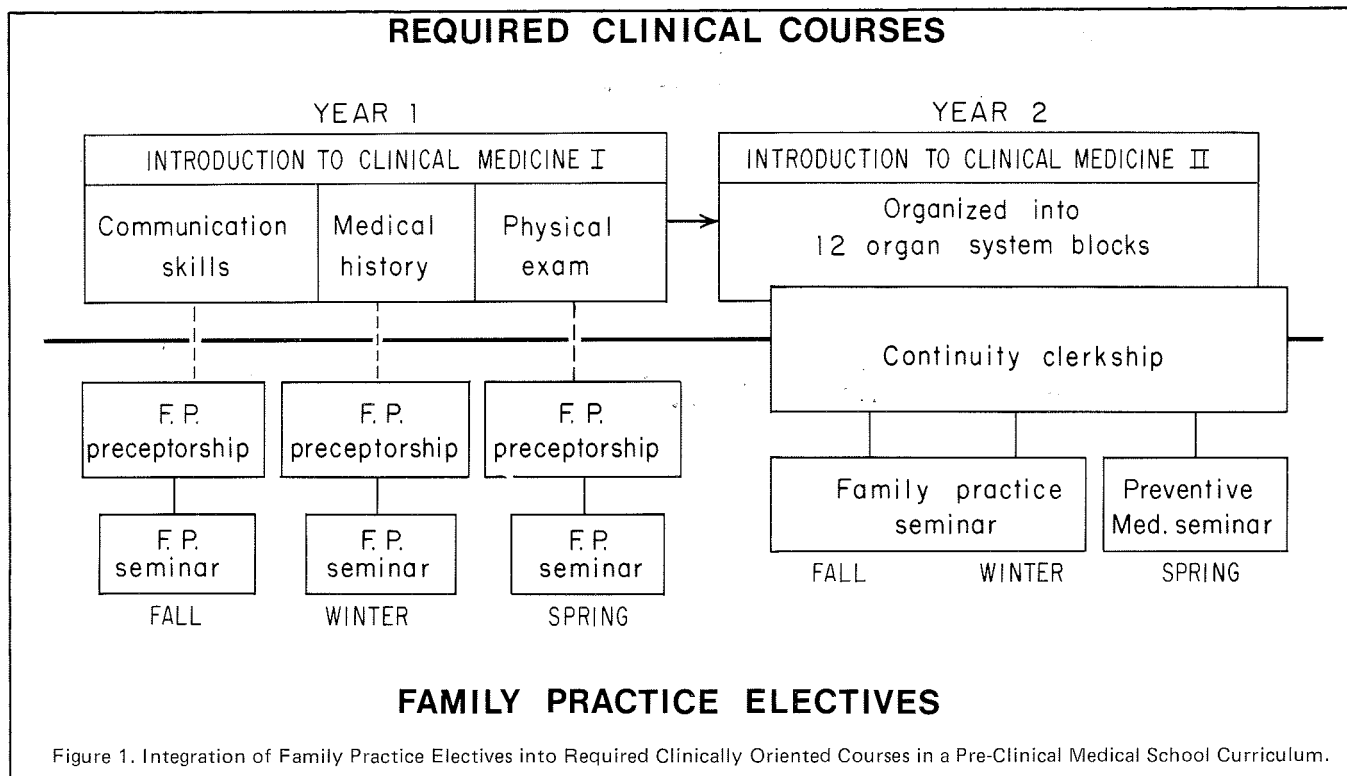


Table 1 presents data on changes in level of involvement in patient care over the three terms.

2. *To teach the application of certain procedural skills in the office.* The continuity clerkship provides multiple opportunities for supervised practice of procedural skills learned elsewhere in the medical school curriculum. Special emphasis is placed on the non-technical and interpersonal aspects of medical service such as preparing patients for procedures, interpreting procedural results to patients, and providing patient education. The procedural experiences most frequently reported by students are routine physical examinations, Pap and pelvic examinations, sigmoidoscopies, EKG recordings, suturing and removal of sutures, counseling, blood drawing, IUD insertions and removals, and chest X-rays.

Student participation in clinical procedures parallels their increasing role in patient management reported in Table 1. "Primary" performance of procedures rises from 29 percent in the first term to 44 percent in the third term.

3. *To provide links between the principles of biological and social sciences taught in the classroom and their clinical application.* As part of the required second-year curriculum all students are exposed to an organ system oriented approach to pathologic processes with heavy clinical emphasis. The continuity clerkship provides students with the chance to examine patients and directly apply these principles.

The distribution of pathology seen in the clerkship does not change through the year as classroom emphasis changes, although some preceptors

manage to arrange for students to see a few interesting patients related to the specific organ system pathology then being studied by their students in university courses. Students are in agreement, however, that lack of timely coordination between pathology studied in the classroom and that seen in the clerkship does not present a serious barrier to the student's integration of basic science principles and their clinical manifestations. Pathology seen by students in the clerkship is representative of morning practices and thereby tends to be more heavily weighted toward retired people, housewives, and pre-school children. Working heads-of-household, school-age children, and traumatic injury tend to be under-represented in the morning.

4. *To expose to the "management" aspects of family medicine.* The emphasis of this goal is on close

observation of how the physician organizes patient care resources and ways in which practice management decisions carry implications for practice style and life-style.

The teaching of management aspects of family medicine tends to be woven into the clinical experience without explicit instruction. Explicit teaching does take place on administrative topics such as patient flow, record keeping, billing systems, and the functions of office staff.

Accompanying the clinical office experience is a weekly hour-long seminar which addresses itself to topics pertinent to ambulatory comprehensive care. Covered are such topics as the ambulatory medical record, the office laboratory, and basic principles underlying a preventive approach. Most of the seminars are taught by family physicians, although other health care professionals contribute as well. Advance readings on each topic are required, and occasional assignments are made requiring library investigation or specific observation in the physician's office.

Integration with Basic Curriculum

All second year students are exposed to information and demonstrations in a series of 12 organ system modules. In past years the cognitive information and skill learning was accompanied by practical clinical experience using hospitalized patients. In a new aspect of the curriculum introduced this year, students electing the continuity clerkship in family medicine may substitute contacts with their ambulatory patients for exposure to admitted patients. Thus, the integration of the continuity clerkship into the medical curriculum extends to accomplishing objectives of the required curriculum through activities in this elective.

Discussion

It has been clear for some time that family medicine offers a distinct train-

ing alternative at the residency level, but at the undergraduate level, and particularly in the pre-clinical curriculum, the value of family medicine offerings has been less well understood. The series of courses described in this paper helps to illustrate the types of learning that family medicine courses can contribute to the pre-clinical curriculum. First and second year students are introduced to supervised clinical activities which build upon and are integrated with concepts, principles, and techniques concurrently taught in the required curriculum. The lessons of clinical experience are examined critically in related seminars. This integration, displayed graphically in Figure 1, is intended to achieve an optimum mix of different educational approaches.

In assessing the goals of the current program, it is useful to consider the distinction between training and education offered by Wright.¹² He notes that training is marked by its particularity and education by its universality. Training is thus primarily concerned with preparation for specific tasks while education focuses on attitudes and ways of thinking. Applied to medical education, it seems reasonable to propose that "education" is the primary goal during the undergraduate years, while "training" is emphasized in the graduate years. To this end, the undergraduate curriculum described above has been designed to permit students to experience and participate in an environment which teaches broad attitudes and analytical approaches. Training aspects exist as well, but in such a setting that the educational aspects predominate.

The introduction of these courses did not come about without problems. The clinical exposures of first and second year students take place in widely dispersed clinical settings, under the supervision of physicians with little or no formal training as teachers and only peripheral ties to the medical school. Under these conditions, serious questions are raised about the comparability of student experiences, the quality of instruction, and the general adequacy of communication between university-based course coordinators, community-based faculty, and students. For these reasons, effective channels of communication and a comprehensive system of on-going evaluation were essential. Although a

description of the communication and evaluation methods employed is beyond the scope of this paper, some of the evaluation results have been included in the foregoing course descriptions. Results to date provide support for the claims cited earlier that early community-based experience in the training of primary care physicians is beneficial, and suggest that the approach is a promising one.

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