A Combined Family and Community Medicine Clerkship

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In 1973, the Eastern Virginia Medical School was established with a goal of producing primary care physicians. As part of this goal, a family practice clerkship experience was required for each medical student. An office based clerkship was developed with students spending five half-days a week in a volunteer family physician's office. To expand the clerkship so that students had contacts and experiences with community resources, several additional experiences were added in community medicine areas: a twice-a-week seminar series, public health agency visits, and an emergency room experience. After four years, using data from faculty and students, student evaluations, and the residency choices of graduates, the clerkship has met most of its objectives. This program shows that a community based educational program with volunteer faculty and few full-time faculty can be office based and still ensure similar experiences and learning through a community medicine focus and weekly seminar sessions.

Eastern Virginia Medical School is a community based medical school developed to produce caring community-oriented physicians with an emphasis on family medicine and primary care. To achieve this the Department of Family Medicine has been made co-equal with the other five clinical departments and responsible for conducting an eight-week required clinical clerkship. During the medical school's three-year continuous curriculum, the students are required to take 15 months of pre-clinical instruction and 12 months of required clinical rotations followed by 9 months of clinical selectives.

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Literature Review

Several family practice clerkships have been reported in the literature, but all are different from the program which Eastern Virginia Medical School has adopted. Holler and Farley[1] reported a family medicine clerkship held in a residency training unit. This clerkship suffered from its not being a student requirement, student exposure to a limited number of family physicians, and placement in a university based practice which was not representative of a community practice.

Phillips and his colleagues[2] and Rosenblatt and Alpert[3] demonstrate the value of family medicine clerkships in providing models which attract students to family medicine careers. In both cases, however, the clerkships were not required for all students. Exposure of students to family practice through a limited preceptorship in their preclinical years has also been shown beneficial by Smith and his colleagues.[4]

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Weisbuch et al reported in 1973[5] on teaching the elements of community and family medicine to medical undergraduates, noting five common elements: (1) primacy of prevention, (2) principles of comprehensive care, (3) relationship of physical and occupational environment to health and disease, (4) importance of sociocultural aspects of disease, and (5) use of quantitative methods in problem solving. This was carried out by home visits or a four-week community diagnosis program based in the office of a community preceptor with the emphasis on community analysis and resource use rather than on family medicine. A similar report on a six-week community based clerkship is reported in *JAMA* in 1979 by Burke and his colleagues at the University of Kentucky, Department of Community Medicine.[6]

Vandervoort and Ransom[7] in 1973 reported on the University of California, San Francisco School of Medicine Six Pathways Program. If the family medicine pathway is elected, a 12-week required clerkship in ambulatory and community medicine is taken in the senior year. This program, however, is hospital based with assignments to follow-up families. An elective is available in the family medicine residency similar to the first postgraduate year (a hospital based year). Lindenmuth and his colleagues[8] reported on the effect of third-year clinical clerks on physician productivity when they were made part of a health care team in the university health plan in Washington, DC. Again, this is not a learning experience in physicians' offices.

Wood, Mayo, and Marsland, in a study[9] conducted at the Medical College of Virginia, reported in 1975 on the content of family medicine. Their study described the content of family practice among practicing physicians in Virginia. That study was useful in providing a data base for comparison of the activities of the students at Eastern Virginia Medical School. Another study on content of care in a medical student experience has been reported from Illinois.[10] It discussed the distribution of acute and chronic care problems seen by students. The data described the continuity and comprehensiveness of student experiences and helped determine whether problems the students saw matched those seen in the community at large.

In none of these reports has there been a description of a course in Family and Community Medicine required of all students, based in the offices of private physicians selected as faculty members of the school, combined with community medicine experiences to teach preventive medicine, which made use of community resources, developed skills in quantified problem solving about the health care system, and in which the focus was on families cared for by private family physicians. It is to this focus that the present description is provided with sufficient detail to allow evaluation and replication if desired.

Clerkship Design

In late 1975, the initial effort in setting up the family practice clerkship was to find family physicians willing to accept students. When the program started there were only 298 family physicians in the six Tidewater communities with a total of $1^1/_4$ million persons. All the family and general practice physicians in the Health Services Area (HSA) were contacted and asked to become faculty members. First, physicians closest to the school were contacted to minimize travel time and then physicians with offices no more than 60 minutes from the school were contacted, unless arrangements for overnight accommodations could be made. The prospective faculty member understood that there would be no financial reimbursement. A Continuing Medical Education program was developed (now known as the Second Saturday Symposium) and physicians could obtain ten hours of category I credit annually for having the students in their offices.

The family physicians had previously had students in their offices for a preclinical preceptorship and were willing to have the students in their offices for 50 percent of the workweek. The family physicians felt they had neither the skills nor the time to teach basic clinical skills, such as history taking or physical examination, including selection of basic laboratory tests and making chart entries. It was agreed (with some objection from the hospital based faculty) that the family medicine clerkship would not start until the students had completed two clinical clerkships of which one should be either internal medicine or pediatrics. This allowed the development of didactic and prac-

Table 1. Office Based Objectives

The following objectives have been selected for the school year 1979-1980:

1. The student shall record all problems treated either by himself, or by the preceptor in his/her presence.
2. From these data the student shall be able to discuss the scope and frequency of problems seen in the family physician's office including those with the greatest potential for severe disability and death, and those for which preventive intervention is possible.
3. The student shall demonstrate a capability to undertake relief of distress during a period of investigation.
4. The student shall be able to discuss alternative methods of patient management and their consequences.
5. The student shall demonstrate a capability of selecting the most appropriate form of management for patients.
6. The student shall be able to describe when and how to involve other health professionals and community resources in the management of patients.
7. The student shall describe the value of recognizing the earliest deviation from health and how to assess the deviation.
8. The student shall be able to discuss practice management.
9. The student shall be able to discuss the responsibility of physicians to contribute their expertise to society.
10. The student shall be able to state reasons for involvement in continuing education.
11. The student shall be able to discuss the value of considering practice responsibilities to self and family.
12. The student shall be able to discuss the interaction of the patient, his or her family, and their environment.
13. The student shall be able to discuss a systematic approach to the prevention of illness and its value.
14. The student shall be able to discuss the role of health education for patients in the office as well as in the community at large.

ticum programs in community medicine to be associated with the family medicine experience producing a combined family/community medicine clerkship which would be more readily comparable to the milieu in which family and other primary physicians operate. The clerkship was designed with four major components: office, emergency room, public health, and combined community and family medicine seminars.

A set of objectives was selected for the office experience which put the emphasis on: (1) development of attitudes for patient care, (2) development of skills in delivery of ambulatory care, and (3) integration of the knowledge taught in other clerkships. The objectives for the office visits are shown in Table 1.

The emergency room visits were developed to review access to care when the primary physician's office is closed. The objectives for the emergency room were related to the sociology and organization of the emergency room rather than for acquiring clinical skills. The students were required to be able to describe the role of the emergency room in the ambulatory care system and compare international methods of handling after-hours patients.

Public health visits provided information and experience in the entire range of community sup-

Table 2. Seminar Subjects

Epidemiology of Family Practice
Public Health Laws
Epidemiology of Hypertension
Epidemiology of Heart Disease
Epidemiology of Diabetes
Compliance Issues
Primary Care Teams
Family/Patient and Decisions
Acute and Chronic Lung Disease
Occupational Medicine
Chronic Illness and Aging
Alcoholism and Accidents
Office Management I
Office Management II
Health Care Organization

port available to family physicians and their patients. The public health experiences covered all aspects of public health, including administration, vital data collection, public health law, categorical clinical programs, home health visiting, health education, substance abuse (alcohol, heroin, and other abused substances), and environmental health programs.

The combined community and family medicine seminars tied the first three experiences together with new knowledge in the fields of family and preventive medicine in a series of student presentations planned around the distribution of problems seen in family medicine. The special skills of biometry, epidemiology, health care administration, and environmental health were related to the problems seen in the physician's office to develop an integrated clerkship with two mutually compatible parts. Table 2 displays the present seminar topics.

Organization of Clerkship

During the past year, 15 to 18 students were assigned to the eight-week clerkship each session. There were six sessions during the year. For each week, five half-days were spent in the family physician's office, two half-days in seminar sessions, one half-day in emergency room practice, and another half-day in the public health practicums. Any remaining time is used for study of problems seen daily in the physician's office and in preparation for the seminars.

The office site selected for a particular student may be a solo or group family practice located in one of the six Tidewater cities or rural areas of Eastern Virginia.

New family medicine faculty members are selected on the basis of referral from another faculty member or because the individual is a graduate of the Department's residency training program. Before committing a student to a particular office, the faculty review their knowledge of the physician; and one of the faculty members visits the office to discuss the impact of having a student and to ensure that the facilities will accommodate a student.

The physician is given a complete set of course objectives including seminar sessions and community medicine objectives so he will know whether the material discussed might conflict with his method of practice. Potential faculty members also are told that the student will be required to record the diagnoses of patients seen and return this information to the department for analysis.

This ensures that the range of problems seen constitutes an appropriate learning experience.

Each student has a similar set of objectives which are discussed the first day of the clerkship to familiarize the students with the course content, the objectives, and the methods of grading.

Visits are made to emergency rooms in the area of the physician's office with the expectation that the students will see some of the same patients in the physician's office. The students are expected to spend 24 to 30 hours during the clerkship in an emergency room.

The public health experience takes place in the health department serving the majority of the physician's patients. Each student is expected to spend 24 to 30 hours at the health department and to examine at least six different programs covering administration, vital data, medical care (clinic and home based), substance abuse, and environmental health. The students are encouraged to select sufficient different programs so that among them they will have covered all aspects of public health care and can serve as resource persons for the group during seminar discussions.

During each seminar session, four students make presentations of roughly 12 minutes each, followed by a 20-minute question-and-answer period led by faculty. Faculty members from family practice and community medicine attend regularly as well as a senior family practice resident assigned to the seminars. Guest faculty members with special expertise are frequently invited. These have included a minister with a residency in pastoral counseling from the University of Virginia School of Medicine who runs a community alcoholism program; the medical director of a local shipyard; and a family in which the husband—an accountant who developed diabetes—and his wife lead a discussion of the problems of compliance and communication between physicians and patients and act as a model for discussion of the family.

Students are expected to give an orderly presentation of their topic covering all relevant material available. The student presentations and following discussion are videotaped for two major reasons. First, the faculty expect all physicians to be able to discuss the problems of health articulately in the community with either press or television. Secondly, the tapes provide a chance for the faculty to review the performance of students. The better tapes are kept to form a library that can be used by students, residents, and community physicians for self-education. While students are encouraged to review their own performance, so far only about 20 percent have done so. Students can also review a session they missed prior to completion of the clerkship, discuss the content with a faculty member, and obtain a satisfactory completion of the course.

Clerkship Evaluation

The students' ability to apply the skills taught in the hospital to the office environment are evaluated by their preceptors. This includes a mid-clerkship report and a final report sent to the department. In emergency room and public health experiences, the students are given a subjective review of attitudes and interest by the supervisor. Faculty look for student input about public health practice at the seminar sessions where knowledge gained during the practical experience should be demonstrated. The seminar evaluations are based on faculty observations of the sessions and review of the videotapes.

The major evaluation of this clerkship is a demonstration of clinical competence in the office, plus attitudes demonstrated in the office and during seminar sessions. As a check on this approach, the faculty have carefully examined the results of part two of the national boards and have found that these students perform above the national norm on the public health section. The board examinations were not considered in the development of the community medicine segment of the course so this outcome was unexpected and gratifying.

The community faculty are evaluated by the students on their willingness to let the students take an active, supervised part in the practice, and on their openness to discussing performance with the students, especially when the preceptor's practice differs significantly from that taught at the medical school. After each session students are asked to review the seminar readings, selecting out the readings that did not contribute to the ob-

Table 3. Ten Problems Most Commonly Documented by Students*

	Number of Visits to Students	Average/ Student	% of Total Cases Seen	NAMCS %
Hypertension	1177	17	8.7	5.8
Acute Upper Respiratory Infection	1169	17	8.6	4.4
Medical Care (no diagnosis)	987	14	7.3	6.3
Obesity	427	6	3.1	2.4
Diabetes Mellitus	407	6	3.0	2.5
Acute Otitis Media	221	3	1.6	1.4
Bronchitis/Bronchiolitis	190	3	1.4	1.8
Low Back Pain (no radiation)	173	3	1.3	0.6
Urinary Tract Infection	159	2	1.2	1.1
Heart Failure (right or left)	158	2	1.2	1.1

*69 students reporting
NAMCS—National Ambulatory Medical Care Survey

jectives for the seminar, and suggesting additional articles for inclusion.

To examine the distribution of problems seen by students in the offices, patient visit data cards are collected from all the students (an average of 175 per student per clerkship are completed). From these data are compiled a general summary of the problems seen in physicians' offices by the students. These data were compared to data from the Virginia Study[9] and the National Ambulatory Medical Care Survey.[11] It is clear the students are getting an experience in continuity, comprehensiveness, accessibility, availability, and first-contact care while in the office (Table 3). About ten percent of patient visits are follow-up visits for the student. The range and distribution of problems seen compare closely with the national averages. The clerkship group of students see a valid cross-section of office practice which can be discussed in each seminar to show differences between practices and to act as a base for preventive interventions, quality of care analysis, cost-benefit analysis, practice organization, and a myriad of topics which provide a base for understanding primary care as practiced by family physicians.

Additionally, at the end of each clerkship the students are asked to rate the capability of the program to meet the various objectives described initially. The students have consistently stated that the majority of objectives are met. The clinical objectives are met almost without exception. The public health experiences need some changes. The major student critique of the seminars is that performance by various students is extremely variable, although the students found the seminars acceptable overall. The students prefer the student presentations to formal lectures from faculty. Table 4 shows the student rating for the various segments of the clerkship.

Over the four classes that have graduated, choice of family medicine residencies has increased from 13 percent the first year to 37 percent for the class of 1979. In addition, several students have indicated they plan to continue into community medicine after they complete the family medicine residency. Long-term evaluation of eventual practice patterns will have to wait another six to eight years.

Discussion

From the faculty's experience and the various evaluations, the following weaknesses have been identified in the program at this time: (1) lack of

Table 4. Student Evaluation of Clerkship*

Clerkship Objectives	
Were well defined	4.4
Were achievable	4.3
Learning Activities—Rounds	
Contributed effectively to achieving overall clerkship goals	3.8
Provided opportunity for adequate student participation	3.8
Provided adequate guidance by faculty	4.0
Patient Work-up	
Contribute effectively to achieving overall clerkship goals	4.2
Was adequately supervised	4.5
Work-ups were reviewed and discussed adequately	4.2
Outpatient/Office Experience	
Contributed effectively to achieving overall clerkship goals	4.6
Was well organized	4.4
Lectures/Presentations	
Contributed effectively to achieving overall clerkship goals	3.8
Were adequate in content quality	3.6
Learning Resources—Faculty	
Demonstrated interest in students' work	4.7
Were available to demonstrate procedures and provide guidance	4.8
Emphasized human concern for patients	4.7
Assisted student in learning	4.7
General Evaluation of Clerkship	
Was overall a valuable learning experience	4.5

*Ratings are taken from a five-point scale, one is "definitely not," five is "always"
4.2 or more—outstanding
3.3-4.1—adequate, well done
3.2 or less—in need of improvement

sufficient coordination between the full-time and community faculty as class size has increased; (2) lack of sufficient numbers of board certified faculty to act as teachers; (3) need for better supervision of the public health practicums and broader choice of experiences; (4) class sizes that are becoming too large for good small group discussions; and (5) need for better integration with the preclinical and residency phases of training.

Steps being taken to address these weaknesses include: the employment of another board certified family physician rather than a preventive medicine physician to be responsible for the office and emergency room segments of the clerkship; more involvement by the department chairman with the students; and more involvement by the

department chairman with the hope of encouraging residents to invite students to perform clerkships in the residency. Having two residency programs associated with the school, it should be possible for three students at a time to be associated with each residency. This will need an additional faculty member to be present full time in each residency to provide necessary supervision. This is currently being addressed with a federal grant request for faculty development.

For each of the six cities (and adjacent rural areas), a community faculty member will be identified as program coordinator and put on the part-time payroll, with specific duties to work with the full-time faculty to develop additional office based training sites, plan faculty development workshops for the community, and assist in evaluation of both students and community.

A full-time position has been added to the Division of Community Medicine for a liaison public health nurse. She will coordinate the practicums with each health department and identify additional community experiences for the students, particularly in the areas of geriatrics, home nursing, peer review, and community organization, including the Health Services Agencies and the Professional Standards Review Organization. This nurse will also take part in the seminars as a role model for team practice and act as a facilitator in health education and nutrition.

It is also planned to extend the data keeping required of the students to include treatment and prescriptions so that a better view of the entire student experience in the office is possible.

One interesting anecdotal experience is that the health departments report they are getting additional referrals from physicians who have students in their offices and the physicians report that having a student in the office is the best stimulus for keeping up-to-date that they can have. It has not yet been possible to design a satisfactory instrument for further evaluating these observations.

Conclusions

A combined family and community medicine clerkship is feasible and appears to have had a significant effect on choice of residency by students at this school as well as on development of preventive medicine skills that relate to daily practice. The clerkship is highly rated by students but there remains room for improvement. The requirement that all students be involved in the clerkship prevented the random assignment of students to a test and control group. This would have been desirable and would have allowed more confidence in drawing conclusions. Finally, as demonstrated in this paper, this primary care clerkship has been carried out with minimal financial support: the cost of one full-time equivalent faculty member among the combined department faculty, and no reimbursement of community faculty at this time.

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