A Family Practice Education System Based on Patient Care Outcomes in Family Practice Settings

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The philosophy, goals, objectives, methodology, and results of a family practice faculty development program are described. Developing family practice educators who will create an education system based on patient care outcomes in family practice settings is the central philosophical purpose of this faculty development program. On completion of the program all participants recognized the essential nature of this philosophical goal and were more comfortable and confident in their ability to: (1) determine resident learning needs; (2) organize curriculum units; (3) use different teaching techniques; and (4) understand their own personal teaching needs and interests. The implications of these changes for developing a family practice curriculum based on patient needs are described.

. . . it is essential that the priorities of problem solving through medical research be determined by the realities of patients' needs as experienced in the real world of health services. It is wonderful to eliminate a disease affecting one person in a million. But our priorities must be questioned if we let go unstudied a disease, disability, or condition affecting ten persons out of a hundred. . . . The system of medical education must be intimately related to the system for the delivery of health services.

John Millis[1]

Introduction

The family physician's most important role in day-to-day practice is patient care. The purpose of patient care is twofold: (1) to make an appropriate assessment of health and disease (diagnosis); and (2) to utilize the health care system (process of care) so that the best possible outcome for each patient problem is achieved with the greatest benefit, least risk, and lowest cost[2] (Figure 1). Assessment includes the demography of disease (age, sex, race), the objective/subjective evaluation of the problem oriented record, and any observational data. The process of care (health care system) includes the plan of the problem oriented record and the necessary consultation and procedures required (use of health care system). Whether the outcome is morbidity, mortality, complications, patient satisfaction, or patient compliance, it should be measured in terms of benefits received, risks taken, and costs imposed. Health

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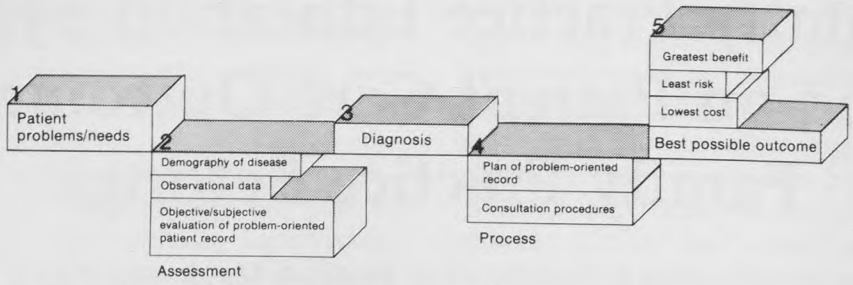

Figure 1. Patient care system

and disease (assessment, process, and outcomes) have been studied in tertiary university settings by many medical specialists, yet have received only token attention by family physicians in primary family practice settings (office, hospital, home, nursing home).[3-7]

Without objective information derived from the study of health and disease in family practice settings, the family physician cannot achieve an optimum practice. Furthermore, he/she cannot be educated except by a system based on the perception of what appears important to other medical disciplines. By definition, then, the resulting medical curricula fail to relate family practice education to the specific health problems presented to family physicians by their patients.

During the last several years, family medicine educators have become increasingly uncomfortable with externally derived curricula. Family practice residents and attending physicians have expressed a growing dissatisfaction with patient care techniques and explanations derived from tertiary care practices. However, when family practice educators express these concerns, their sister disciplines counter, "In what way is family practice different?" Until recently, family physicians have answered this question only with anecdotes. As Leaman recently suggested, "An accurate definition of the content of the discipline depends on the collection and analysis of data."[8]

The first step toward an educational system in which curriculum relates to patient needs, is a needs assessment survey. Such a study documents the numbers and kinds of problems presented to primary physicians by their patients.[9] This effort resulted in a logistical picture of the primary health needs of all socioeconomic groups which was similar for urban, suburban, and rural populations. The data resembled information previously gathered from the National Ambulatory Medical Care Survey.[10]

The next step toward a family focused educational system is the development of androgogic* skills, focusing on the assessment, process, and outcomes of patient care in family practice settings. Family physician faculty members could acquire these skills within a specialized educational program. The following section describes the goals, objectives, methodology, and results of just such a faculty development program designed to teach participants both androgogic and patient care study skills.

Methodology

The faculty of the Department of Family Practice at the Medical College of Virginia is composed of 21 practicing family physicians and 4 medical educators. In October 1978, they met for a series of two-day workshops during which they formulated a set of goals and objectives for faculty development that they themselves were willing to master. During the next three years, each member

*"To distinguish it from pedagogy, this new technology is being given a new name: 'androgogy,' which is based on the Greek word anēr (with the stem andr), meaning 'man.' Androgogy is, therefore, the art and science of helping adults learn."[11]

of the faculty agreed to participate in a year-long faculty development program. Each small group of 5 to 12 persons was trained so that it could develop, design, evaluate, and revise educational experiences based on family practice needs.

In short, the faculty agreed to acquire knowledge and skills related to five major goals: (1) ascertaining resident learning needs, (2) organizing curriculum, (3) teaching techniques and methodologies, (4) practicing evaluation techniques, and (5) refining interpersonal relationships (Appendix 1). Their work was accomplished through a series of monthly, two-day workshops related to individual ongoing patient-oriented educational projects carried out in their home environment. The first group completed this educational program in October 1979. A brief review of the experience, including an evaluation of the program, may further clarify these goals and objectives.

Program Participants

The first participants were five faculty members, one from each of the five Medical College of Virginia Family Practice Centers. All five participants were male physicians, board certified in family practice, who had been on the faculty from one to seven years. Four of the participants had more than 15 years experience in private family practice. None of them had ever participated in a long-term (more than one session) educational program before.

Teaching Process

A series of two-day workshops constituted one of the major educational methodologies used during the faculty development program.* (The use and value of such workshops for family practice faculty members have recently been reviewed.[12]) The workshops were designed to teach participants: (1) to create and refine objectives; (2) to select, develop, and personally practice various teaching methodologies; and (3) to evaluate and revise their teaching experiences.

*A complete outline of the workshops can be obtained by writing to Dr. Keith E. Jacoby, Department of Family Practice, Medical College of Virginia, Richmond, VA 23298.

At the same time, the program leaders visited and consulted with each of the participants in his own practice setting. The consultants helped participants deal with patient audit, data collection, and data analysis. In addition, the central program faculty assisted in computer programming, statistical analysis, and evaluation of audit results.

Program Evaluation

At the beginning and end of each faculty development cycle, participants completed an extensive questionnaire concerning the program objectives. The questionnaire allowed each participant to indicate for each objective (Appendix 1) his interpretation of the importance of that objective and his difficulty in performing it.

Results

A comparison of each participant's ratings at the beginning and end of the first faculty development cycle demonstrated a marked change in perception of individual skill and attitude growth (Figure 2). In order to test the reliability of this questionnaire, faculty members who did not go through the program cycle were asked to fill out the same questionnaire at approximately the same time as the participants. The reliability coefficients ranged from .56 to .93, with an average of .78.

Goal I (ascertaining resident learning needs) represents the area in which the participants felt the smallest need for help. Goal V (refining interpersonal relationships) is the area in which all of the participants expressed their greatest need for continued work. On completion of the program, all of them felt more comfortable and confident in: (1) their ability to determine resident learning needs; (2) their confidence in organizing curriculum units; (3) their skill and comfort in using numerous teaching techniques; and (4) their understanding of their own personal teaching needs and interests.

Due to time constraints, the program did not focus on the development of resident evaluation techniques, nor did it analyze resident performance deficiencies. Consequently, it was not surprising to find that the participants still perceived resident performance/evaluation as being a con-

Appendix 1. Goals and Objectives of the Faculty Development Program*

Goal I	*Family practice faculty will become competent in ascertaining resident learning needs (to include the behavior of the resident) in family practice*
Objective 1	To be able to define the health care system for family medicine in terms of the numbers and kinds of problems that patients bring to family physicians
Objective 2	To be able to measure outcomes of patient care
Objective 3	To be able to utilize many sources of data pertinent to resident learning needs (epidemiology, biostatistics, elements of practice organization and management, resident consultant and faculty evaluations, postgraduate evaluations, attitudes, family dynamics, interpersonal relationships with peers)
Objective 4	To be able to define the possible role of family physicians in managing all types of clinical problems
Objective 5	To be able to effect a positive attitude toward continuing education
Objective 6	To be able to define areas that are inappropriate for family practice
Objective 7	To be able to define the role of the family physician in health maintenance
Goal II	*Family practice faculty will be competent in organizing the curriculum*
Objective 1	To be able to decide what is the most appropriate opportunity or setting for learning (patient care, family practice faculty and consultant teaching, independent study, and maturation in practice)
Objective 2	To be able to organize family practice patient care settings to provide the best possible care and education programs
Objective 3	To be able to assess the extent to which residents have mastered necessary clinical skills
Objective 4	To be able to analyze resident performance (to include attitude and motivation) problems, to identify the factor or factors responsible for such problems, and to apply strategies appropriate to their resolution
Goal III	*Family practice faculty will become competent in various teaching techniques, and will match them appropriately with both content and setting*
Objective 1	To be able to design a variety of faculty/resident learning experiences
Objective 2	To be able to demonstrate competence in using various teaching techniques
Objective 3	To be able to successfully determine who should teach any particular subject, what should be taught, where it should be taught, how it should be taught, and why it should be taught

*These goals and objectives were created, revised, and finally accepted through consensus by a group of 21 practicing family physicians/faculty and 4 medical educators, who met for a series of two-day meetings between October and December 1978

Appendix 1. (continued)

Goal IV	*Family practice faculty will become competent in evaluation techniques and their use*
Objective 1	To be able to design and implement instruments appropriate for assessment of resident learning
Objective 2	To be able to analyze resident performance deficiencies for the purpose of adjusting the learning experiences provided or the setting in which acquired skills are applied
Goal V	*Family practice faculty will acquire competence in, and commitment to, determining what physicians need to know about interpersonal relationships and how to evaluate themselves as faculty (ie, their own effectiveness as teachers)*
Objective 1	The Central Medical College of Virginia Faculty will assist the general faculty in identifying their own personal and professional needs relating to their role as faculty members and will assist in developing a process to evaluate both performance and the extent to which these needs are being met

cern which would require further development.

By analyzing individual questionnaires and comparing them in pretest and post-test conditions, it was possible to determine overall mean differences by individuals. In all cases, there was a significant change in the comfort and confidence participants experienced in meeting the program objectives.

While it was encouraging to find statistically significant differences, the faculty was more concerned with participants' individual comments on a series of open-ended questions than they were with change statistics. For example, one participant commented, "This project should open doors to *us* as medical educators. Our residents should be better trained. I believe as more faculty are able to participate, our department will grow and mature in an academic way that I would not have thought possible a few short months ago."

Another participant said, "The awareness of the patient as the center of education will have a positive influence on patient care. Specific educational projects will increase our confidence for certain patient problems. My participation in the faculty development program has reinforced my desire to contribute to the growth of our discipline." These responses were to a large extent echoed by the other program participants, all of whom are family physicians working full time in community residency programs.

Discussion

The changes which are documented here that occurred in faculty members support the rationale for linking the educational process to the "real world" of patient care in community settings. As more information is acquired about biologic and psychosocial elements of patient outcomes, the educational system can be expected to become more and more relevant to patient needs.

The major reward for the educator will be objective information that will truly reflect a curriculum based on patient needs. At the present time, as a product of this faculty development program, there are several studies in varying stages of completion that integrate the patient care and education systems through the study of patient problems (assessment, process, and outcomes in family practice settings). These studies will begin to document the efficacy of the assertions presented in this paper. This evolving model has the possibility of incorporating methodologies differing from the traditional medical research model. When measuring the needs of the patients in family practice settings, it may become possible to add to the traditional biologic medical model a truly holistic approach within the observational tradition of agriculture, sociology, anthropology, economics, and behavioral science.[13] The possibility of examining the patient interface with the practicing family

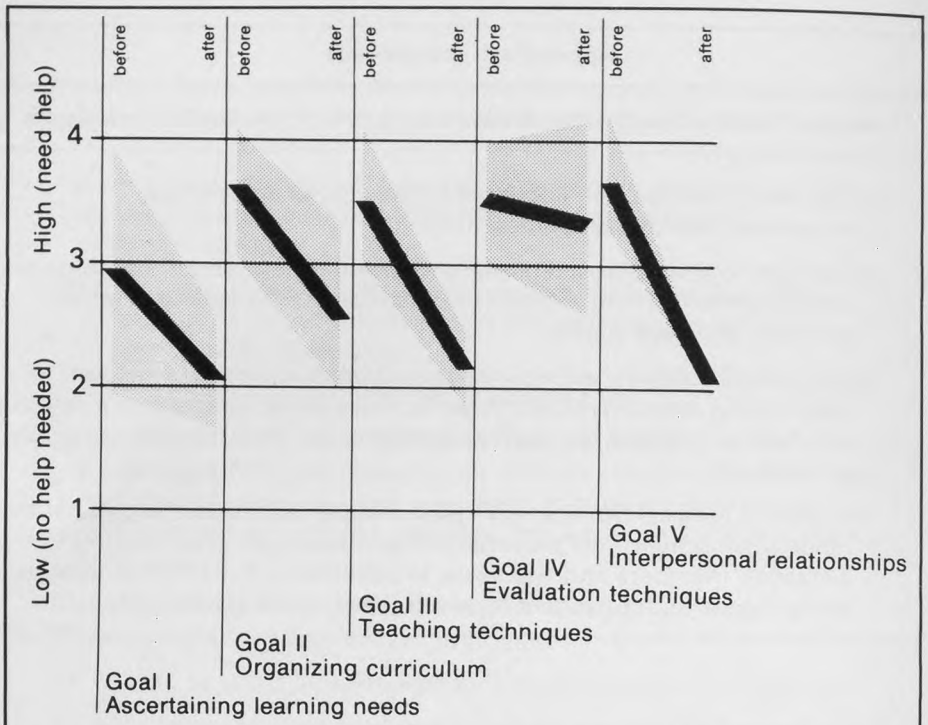

Figure 2. Attitudinal changes in faculty development participants. The heavy black lines along the vertical plane represent the mean values for each of the five goal areas sampled before and after the educational intervention. The lighter shaded areas represent the standard deviations for each goal area. A value of one indicated that the participants did not need help in accomplishing the goal and the objectives included in that section. A value of four meant that the goal and objectives in that section represented an extremely important area in which they needed help

physician through these multiple perspectives could lead to an explosion of knowledge, skills, and attitudes that may positively involve all disciplines that interact with family physicians.

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