Research in the Family Practice Residency Program

John P. Geyman, MD
Seattle, Washington

Research activity in family practice is becoming increasingly important as the specialty matures past its initial organizational and developmental phase. Family practice residency programs are directly involved in the definition and implementation of modern concepts in family medicine and frequently have available the necessary tools and resources for substantive research of various types. These programs therefore have both the opportunity and responsibility to become actively involved in research. Significant contributions have already been made in this area by faculty and residents in a number of family practice residency programs. This paper provides an overview of research areas in family practice, presents some examples of research to date, and suggests some practical approaches to facilitate further research efforts in family practice residency programs.

If one takes the Millis, Willard, and Folsom reports (1966) as the onset of active development of family practice as a specialty, the first decade – which, in many respects can be considered Phase One of the specialty's development – has now passed. The pressing tasks during this first stage have necessarily revolved around the organizational and logistic aspects of program development, and these have been well done. We are now entering Phase Two, and research in the discipline must become a vigorous element in this stage.[1] Since family practice residency programs are training family physicians for the future, they are inevitably involved in the definition and implementation of modern concepts in family medicine on the "cutting edge" of the developing academic discipline.

The word "research" has frequently had a "turn-off" effect on many who have been involved with family practice in the past. Many of us have seen research in other disciplines as overly focused on "esoteric" conditions and complex pathophysiologic mechanisms not directly applicable to the work of the family doctor. We have not yet developed and made visible valued and respected models of research and researchers in the settings of family practice teaching programs. This is quite natural since family practice as a specialty and family medicine as a developing, teachable academic discipline are relative newcomers in formal medical education.

Today's circumstances in family practice are quite different from those in the past, and a wide horizon for needed and important research in family medicine is now opening up at a time when the necessary tools and resources for research are becoming available. It is now not only possible, but *expected*, that the family practice residency program will use the problem-oriented medical record, maintain an active audit program, and utilize data retrieval methods involving accepted coding systems for ambulatory as well as hospital problems. Library search services are now available to most programs, thereby facilitating literature review. We are attracting young physicians of high caliber into family practice residencies, and the potential for original work in the field is great.

The purpose of this paper is to present an overview of research areas in family practice, give some illustrative examples of research to date, and suggest some practical approaches to encouraging research in a family practice residency program.

Content Areas for Research in Family Practice

Webster defines "research" as the "diligent and systematic inquiry or investigation into a subject in order to discover or revise facts, theories, and applications," while Eimerl describes it as "organized curiosity."[2] Whatever definition for the word one accepts, it is clear that research in family medicine must be defined broadly, and that the patterns of traditional biomedical research are not directly applicable to the uncharted arena of the family practice approach to primary care.

Because they deal with the everyday problems of patients and families, family physicians have a number of inherent advantages related to research on a patient-care level. Some of these can be listed as follows.

1. The family physician sees all members of the family, of all ages and both sexes.
2. He/she has direct experience with primary or first contact care of unselected patients.
3. He/she has the opportunity to follow all of his/her patients.
4. He/she brings a multidisciplinary approach to health care.
5. He/she sees patients in any or all of the James Stages:

   Stage I. Foundations of disease
   Stage II. Preclinical disease
   Stage III. Treatment of symptomatic disease
   Stage IV. Rehabilitation and management of medical conditions for which biologic cure is not possible

Family physicians thus have a wider perspective of health and disease on the community level than anyone else in medicine.

The spectrum of avenues of needed research in family practice is wide. Although incomplete, Table 1 presents a simple taxonomy with four major

From the Department of Family Medicine, University of Washington, School of Medicine, Seattle, Washington. Requests for reprints should be addressed to Dr. John P. Geyman, Department of Family Medicine, RF 30, School of Medicine, University of Washington, Seattle, WA 98195.

categories of research in family practice, together with sample subject areas in each category.

By way of example, the following list reflects the diversity of important original work which has already been completed and published during the past several years in this country by faculty and residents in family practice residency programs.

"A Data Bank for Patient Care, Curriculum and Research in Family Practice"[3]

"A Critical Review of Periodic Health Screening Criteria"[4]

"A Study of Thyroid Disease in Family Practice"[5]

"Low Back Pain in the Primary Care Setting"[6]

"Six Years' Experience with Pelvic Inflammatory Disease"[7]

"Behavioral Perspectives in Coronary Care"[8]

"An Audit of Obstetric Care in a University Family Medicine Department and an Obstetrics-Gynecology Department"[9]

"Classification and Coding of Psychosocial Problems in Family Medicine"[10]

"Why Home Visits? Analysis of 142 Planned Home Visits"[11]

"The Consultation Process and Its Effects on Therapeutic Outcome"[12]

"Primary Care Research in a Model Family Practice Unit"[13]

"Comparative Profiles of Residency Training and Family Practice"[14]

"Types of Family Practice Teachers and Residents: A Comparative Study"[15]

"Practice Objectives and Goals: A Survey of Family Practice Residents"[16]

"The Impact on Patient Satisfaction of the Introduction of Family Medicine Residents"[17]

Some Practical Approaches to Facilitating Research

For a program director to be persuaded of the importance of research, and then simply to establish a research rotation for residents is not only insufficient but headed for failure. The planning, design, conduct, analysis, and publication of a research project is often based on the curiosity and personal interest of one individual or a small group of individuals. Research is therefore a delicate, creative process, which can be facilitated by building a supportive environment but cannot be legislated by fiat.

In view of these considerations, however, a number of positive steps can be taken to promote creative efforts and original work by residents in family practice, the future leaders of the specialty. The following principles are suggested as practical ways to facilitate research in family practice residency programs.

1. *An attitude of critical inquiry must be developed and maintained among all residents and faculty in the program.*[18]

The origin of any research project is the asking of a question. We should encourage residents to raise questions about the effectiveness of diagnostic and therapeutic approaches in patient care as well as any related aspects of health care in family medicine.

2. *The residency program should implement and make available for everyday use the basic tools for research in the family practice setting.*

These include the problem-oriented medical record, active audit programs, a coding system, data retrieval methods, and library search resources. A number of helpful papers have already been published on various research methods in family medicine.[19-35] The program can easily subscribe to *Abridged Index Medicus* for its library, and the nearest medical library is usually prepared to conduct MEDLINE searches on request.

3. *The faculty should demonstrate interest in research as a valued and necessary element in the program.*

The real priorities in a program are often unwritten and implicit in the environment. Research cannot be effectively encouraged in a family practice residency unless faculty members take a special interest in new ideas, encourage critical thinking, and reinforce each resident's efforts in pursuing studies of particular interest. Even more effective than these approaches is the active involvement of faculty members in some area of original work, for it is in this kind of role modeling that the residents will perceive genuine commitment to research activity.

4. *A research project, not a rotation, should be strongly encouraged for all residents.*

If a program is to establish a meaningful emphasis on original work and creative activity, it is reasonable to expect that each resident, by the completion of his/her residency training, will have completed a research project in an area of special interest. Quite beyond the individual gains in learning derived by the resident in pursuing a selected subject in some depth, each resident will necessarily add to his/her ability to obtain and organize new information and to think critically. This experience will add to the future family physician's interest in his or her practice and will increase the capacity to pursue significant continuing medical education. A research project invariably requires time for germination of ideas, development of a plan of study, conduct of the study, analysis, and presentation of results. This process is not readily adaptable to a block rotation, but is best carried out over a period of one or two years.

5. *Back-up resources in research methods should be identified and made available to residents.*

Just as the program director identifies resources and arranges for teaching in the various clinical curricular areas, similar efforts should be taken to identify individuals in the community and/or in affiliated institutions with expertise in such areas as research design, statistical analysis, and other related aspects involved in the conduct of a research project. Residents should have help available in the planning, conduct, and analysis of their research projects. Most communities with sufficient clinical teaching resources to maintain a family practice residency program also have these kinds of resources available. Programs which are affiliated with medical schools can frequently obtain help from visiting faculty in these areas, and in some instances collaborative studies may be carried out with the medical school itself.

6. *Residents should be provided with an opportunity to present and share the results of their research studies.*

An essential part of the program's activities in research is a periodic conference involving all of the residents and faculty for the reporting of research studies. Some programs are finding that an annual two-day conference provides an effective opportunity for the sharing of original work, serves as a stimulus for residents to finish their projects, and provides them with the additional learning ex-

Table 1. A Taxonomy for Research Areas in Family Practice

Epidemiological and Clinical Research	Health Services Research	Behavioral Research	Educational Research
Single illness studies Morbidity Natural history Prevention Early diagnosis Management Case reports	Consumers Health and illness behavior Needs and demands Consumer participation Patient compliance Effects of health education	Doctor-patient relationships	Medical student interest in family practice
Practice studies Content Common diseases Common problems Variation with geographic setting Consultation rates Changing patterns	Providers Numbers and distribution Efficiency (utilization) Physician performance Referral patterns Costs of primary care Solo practice Family practice group Multi-specialty group Allied health manpower studies Task definition Health team studies Cost and efficiency studies Drug and laboratory procedure studies Experimental models for delivery of primary care (including comparison of family practice and multi-specialty approaches)	Health team and changing roles	Teaching aids for family practice
Family studies Morbidity Prevention Role of genetic counseling Crisis intervention	Interface Patient outcome studies Costs and incentives Cost-benefit ratios Facilities and utilization Role of health hazard appraisal	Impact of societal changes on primary care	Family practice residency programs Educational objectives Role of problem-oriented record and medical audit Program costs Model family practice clinic costs and revenue
		Family dynamics Normal Abnormal Changing patterns Developmental aspects of family life cycles	Self-assessment methods Family practice residents Practicing family physicians
		Counseling Methods Results	Continuing medical education Needs of family physicians Physician performance

perience of presenting their work to their colleagues. An atmosphere should be sought which permits dialogue and critique of the research methods and of the validity and implications of results. Active resident involvement should be encouraged in the planning and conduct of these conferences.

7. *The range of research and original work must be defined broadly.*

There is a potential hazard in taking too circumscribed an approach to research in this specialty, for family medicine is an integrated and functional clinical discipline. We need clinical and epidemiological research just as much as behavioral research, and health services research just as much as educational research. Priorities for kinds of research should be based on local and individual interests and capabilities. Research projects by residents may involve case reports, audits of care, prospective or retrospective studies of clinical problems, or may address a wide variety of practical problems arising from an inquiry of personal interest to the resident. Whatever the project, each resident should be expected to conduct an appropriate literature review as part of the completed study.

Discussion

In 1966 McWhinney noted the absolute importance for the survival of any specialty of the development of the academic discipline and of an active area of research.[36] This must become a central task of Phase Two in family practice development, now that the initial organizational and logistic efforts of Phase One are largely completed. It is, therefore, not just a desirable option, but *essential*, that graduate students in family medicine (ie, family practice residents) be involved in this process. They have much to contribute and much to gain.

As "model" practices with both the opportunity and responsibility to develop, test, and implement improved approaches to health care of families, family practice residency programs are ideal settings for research in family medicine. If the teaching practices and Family Practice Centers in these programs are considered "laboratories," and if the basic research tools which have been described earlier are implemented in each program, then family practice residencies can contribute immeasurably to research in family medicine.

Research in family practice is at an embryonic but promising stage. The horizons for useful research are wide and basic research tools are now available. The quality and energy of our research efforts are vital to the more precise definition of family medicine as an academic discipline and to the continued development of the specialty of family practice. We must now raise the priority for research and integrate active research efforts into our teaching and patient care programs throughout the country. The payoffs of this direction are considerable – increased quality of teaching programs, expansion of the body of knowledge which family physicians will teach, an ongoing stimulus for continuing medical education, increased practice satisfaction, and, most importantly, better health care for our patients and their families.

References

1. Geyman JP: On entry into phase two in family practice development. J Fam Pract 4:15, 1977
2. Eimerl TS, Laidlaw AJ: A Handbook for Research in General Practice. Edinburgh, E & S Livingstone Ltd, 1969
3. Marsland DW, Wood M, Mayo F: A data bank for patient care, curriculum, and research in family practice: 526, 196 patient problems. J Fam Pract 3:25, 38, 1976
4. Frame PS, Carlson SJ: A critical review of periodic health screening using specific screening criteria. (a four-part series) J Fam Pract 2:29, 123, 189, 283, 1975
5. Shank JC: A study of thyroid disease in family practice. J Fam Pract 3:247, 1976
6. Haight RO, Marsland DW, Temple TE: Low back pain in the primary care setting. J Fam Pract 3:363, 1976
7. Hess GS, Burr BD, Lawrence R, et al: Six years' experience with pelvic inflammatory disease. J Fam Pract 1(2):13, 1974
8. Geiger WJ: Behavioral perspectives in coronary care. J Fam Pract 2:245, 1975
9. Ely JW, Ueland K, Gordon MJ: An audit of obstetric care in a university family medicine department and an obstetrics-gynecology department. J Fam Pract 3:397, 1976
10. Cole WM, Baker RM, Twersky RK: Classification and coding of psychosocial problems in family medicine. J Fam Pract 4:85, 1977
11. Guy LJ, Haskell EG, Hutson AC, et al: Why home visits? Analysis of 142 planned home visits. J Fam Pract 4:337, 1977
12. Rudy DR, Williams T: The consultation process and its effects on therapeutic outcome. J Fam Pract 4:361, 1977
13. Wentz HS, Tindall HT, Zervanos NJ: Primary care research in a model family practice unit. J Fam Pract 1(1):52, 1974
14. Johnson AH, Wimberly CW: Comparative profiles of residency training and family practice. J Fam Pract 1(3):28, 1974
15. Onenk N, Heffron WA: Types of family practice teachers and residents: A comparative study. J Fam Pract 2:195, 1975
16. Longenecker DP: Practice objectives and goals: A survey of family practice residents. J Fam Pract 2:347, 1975
17. Blanchard CG, Treadwell TW, Blanchard EB: The impact on patient satisfaction of the introduction of family medicine residents into a model practice facility. J Fam Pract 4:133, 1977
18. Geyman JP: On the need for critical inquiry in family medicine. J Fam Pract 4:195, 1977
19. Farley ES, Froom J: The age sex register. J Fam Pract 1(1):44, 1974
20. Froom J: The diagnostic index E book. J Fam Pract 1(2):45, 1974
21. Froom J: Family folders. J Fam Pract 1(2):49, 1974
22. Smith SR: Application of the tracer technique in studying quality of care. J Fam Pract 1(3):38, 1974
23. Farley ES: Implications of filing charts by area of residence. J Fam Pract 1(3):43, 1974
24. Froom J: The problem oriented medical record. J Fam Pract 1(3):48, 1974
25. Kane RL, Leigh EH, Feigal DW, et al: A method for evaluating patient care and auditing skills of family practice residents. J Fam Pract 2:205, 1975
26. Keller K, Podell RN: The survey in family practice research. J Fam Pract 2:449, 1975
27. Baker C, Schilder M: The "E-box". An inexpensive modification of diagnostic indexing. J Fam Pract 3:189, 1976
28. Bass M: Approaches to the denominator problem in primary care research. J Fam Pract 3:193, 1976
29. Froom J: Assessment of quality of care by profiles of physicians' morbidity data. J Fam Pract 3:301, 1976
30. Newell JP, Bass MJ, Dickie GL: Defining the practice population. J Fam Pract 3:517, 1976
31. Bass MJ, Newell JP, Dickie GL: The value of defining a practice population. J Fam Pract 3:525, 1976
32. Newell JP, Dickie GL, Bass MJ: Gathering encounter data. J Fam Pract 3:633, 1976
33. Dickie GL, Newell JP, Bass MJ: Encounter data and their uses. J Fam Pract 3:639, 1976
34. Westbury RC: The analysis of family practice workloads by seriousness. J Fam Pract 4:125, 1977
35. Given CW, Simoni L, Gallen R: The design and use of a health status index for family physicians. J Fam Pract 4:287, 1977
36. McWhinney IR: General practice as an academic discipline. Lancet 1:419, 1966