Family Practice in Nonmetropolitan Illinois

Gabrielle D'Elia, MA, Roland Folse, MD, and Ramon Robertson, MEd
Springfield, Illinois

Descriptions of the medical practices of family physicians in a nonmetropolitan area are based on a sample of one third of the family physicians in a 16-county area. Data were obtained from office patient records, hospital operating room logbooks, an interview with the physician, a questionnaire completed by the physician, and a questionnaire completed by the office nurse-receptionist.

Family physicians spent an average of 33 hours per week in office practice, and 25 hours per week in hospital practice, including patient rounds, Emergency Room, and operating room activities. They managed an average of 123 office patients per week. Approximately 40 frequently identified problems and diagnoses accounted for 80 percent of all the office visits. The range of diagnoses encountered, however, suggests that the family physician manages problems covering all the organ systems and all the stages of human growth and development.

The findings suggest that nonmetropolitan family physicians should be trained to manage a broad range of problems, to identify the boundaries of their expertise, and to make the interface with other specialty and facility resources which have a different availability in nonmetropolitan areas than in metropolitan areas.

One measure of the domain of family practice is a description of what those physicians who call themselves family physicians do. How much time do family physicians spend in various patient care activities? What types of patient problems do they manage? How much surgery, if any, do they perform? How do they manage the problems they consider difficult? Are there differences between the practices of family physicians in a nonmetropolitan area compared to those in a metropolitan area?

From the Office of Health Systems Research and the Department of Surgery, Southern Illinois University School of Medicine, Springfield, Illinois. Requests for reprints should be addressed to Ms. Gabrielle D'Elia, Office of Health Systems Research, SIU School of Medicine, PO Box 3926, Springfield, IL 62708.

A description of the activities of a sample of family physicians in southern Illinois resulted from a field study of nonmetropolitan medical manpower and practice conducted by the Southern Illinois University School of Medicine. The goal of the study was to describe existing practice patterns and manpower needs and to identify what medical students and residents would need to learn to be able to practice medicine in the evolving health care delivery system in the nonmetropolitan area.

Methods

Contacts with physicians in central and southern Illinois were made through the Regional Health Education Center (RHEC) network of the

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Table 1. Average Number of Hours Per Week 19 Family Physicians Spend in Patient Care Activities

Activity	Number of Hours Per Week
Office Practice	33
Hospital Rounds	14
Emergency Room	7
Operating Room	4
Other	4
All Patient Care Activities	62

School of Medicine. The Coordinator of the RHEC is a practicing physician in the region who also receives a salary from the School of Medicine for his activities in coordinating contacts between the physicians and the School for continuing education programs. Through the use of this network and during a series of meetings between community physicians and faculty and researchers from the School of Medicine, the research was discussed, suggestions were solicited, and cooperation was requested. The physicians were outstanding in their assistance and willingness to participate in a very comprehensive field survey.

A sample of 37 family physicians and general surgeons was drawn from a pool of approximately 98 general/family physicians and general surgeons, under 65 years of age, in active practice in a 16-county area of central and southern Illinois. Since differences could not be observed between the data obtained from family physicians and from six general practitioners, their responses have been combined into one category, hereafter called family practice. Thirty-three of the 37 physicians sampled participated in the study, although the number of respondents to the different survey instruments varied slightly. Of the four nonparticipants, three physicians were out of town during the time researchers were scheduled to conduct the field survey, and one physician indicated that researchers would pose too much interruption to his office practice to permit him to participate. The current paper only reports practice descriptions of the family physicians who were surveyed. Nineteen family physicians completed a questionnaire and an interview. Patient records of 16 family physicians were sampled.

The field survey included a sample of the records of patients treated in the physician's office, a questionnaire completed by the physician, an interview with the physician conducted by a trained researcher, a questionnaire completed by the nurse-receptionist in the physician's office, and a sample of hospital operating room logbooks.

The study of patient records involved a random sample of 35 records per physician per week drawn for four weeks in different seasons of the year. The number 35 was defined as a significant sample based on discussion with physicians, counts of appointment book and billing records, and patient loads identified in the literature.[1] The instrument used to extract data from the patient records was an office practice survey form, adapted from the form used in the National Ambulatory Medical Care Survey.[2] This form was used to extract data regarding the patient's age, sex, status as a new or returning patient, presenting problems, principal diagnoses, reason for visit, and disposition.

The questionnaire completed by the physician contained questions about factors influencing the selection of a nonmetropolitan practice site, about hours spent in patient care activities, and about referral and consultation practices. The physician interview form contained questions about the recommendations for training to be included in residency programs preparing primary care physicians and surgeons for practice in the nonmetropolitan area.

Table 2. Average Number of Patients 19 Family Physicians Manage in Selected Patient Care Settings

Patient Care Setting	Average Number of Patients
Office Practice	123 patients/week
Hospital Rounds	11 patients/day
Operating Room	3 patients/week

The office practice questionnaire required the nurse-receptionist to provide a description of the activities of various health care personnel employed in the offices, as well as a description of patient volume, scheduling, and waiting times.

The sampling of surgical procedures performed in the hospital involved recording all the procedures listed in a hospital operating room logbook for a week's period. In four hospitals, four weeks throughout the year were sampled. In another four hospitals, eight weeks were sampled. While each procedure performed during the week was recorded, surgeon identification was only made if the principal surgeon or first assistant was one of the family physicians participating in the study.

Results

The family physician in the nonmetropolitan area provides a broad range of care to a large number of patients in a variety of patient care settings. Table 1 summarizes the responses of physicians to a question about the hours they spend in various patient care activities. Table 2 contains a summary of the volume of patients seen based on answers to a questionnaire and on counts of appointment book entries and billing records.

Office Practice

The 19 family physicians estimate spending an average of 33 hours per week in office practice. This figure is based on a range of 25 to 68 hours. The family physicians are managing an average of 123 patients per week in the office setting. A description of the types of patient problems managed is based on a sample of 2,211 records.

The age distribution of patients clearly indicates that the family physician in the nonmetropolitan area needs to be prepared to manage patients of all ages. The finding that 25 percent of the patients are 61 years or older is indicative of the fact that the elderly as a group tend to use the resources of the health care system more than other groups and that the predominantly rural areas tend to have a larger percentage of elderly than the population at large. Therefore, the family physician being trained for nonmetropolitan practice should be prepared to manage the problems of the elderly. While a large percentage of his patients are elderly, the family physician also provides pediatric and obstetric care, especially in communities with few or no pediatricians and obstetricians. Eighteen percent of the patients whose records were analyzed are 15 years old or younger. Six percent of the patient visits involved prenatal care.

Each patient record sampled was categorized in terms of the reason for visit, and the results are presented in Table 3. A pre or postoperative evaluation was the reason for visit in five percent of the records. The category "long-term follow-up" was used for a visit by patients with chronic medical problems, such as diabetes or hypertension, and by patients returning for evaluations of surgical interventions which had occurred at least three months previously. Twenty-two percent of the visits were placed in this category. The incidence of the chronic problems, especially of heart and circulatory disease, again reflects the percentage of elderly in the nonmetropolitan area.

The general tendency for utilization of physi-

Table 3. Percentage Distribution of Reasons for Visit

Reason for Visit	Percent
Nonoperative (acute) problems	40
Long-term follow-up	22
Preventive, well-maintenance	20
Office procedures	12
Postoperative evaluation	3
Preoperative evaluation	2
Other	1
All reasons	100

cian services for treatment of acute problems on an episodic basis was also evident in the nonmetropolitan area. Indeed, the majority of the patient visits involved the management of acute illnesses. Within the category "nonoperative (acute) problems," the most frequent notations in the medical records were signs and symptoms. At the same time, the records indicated that 93 percent of the patients had visited the family physician at some previous time.

From each medical record, researchers extracted information about the patient's presenting problem and the physician's diagnosis of the problem. An effort was made to assess the range of conditions encountered as well as to determine those problems and diagnoses which the physicians identified with the greatest frequency. To determine the range of problems, a faculty panel categorized each problem and diagnosis in terms of the residency service at the School of Medicine which would have primary responsibility for teaching the problem management. Using this method,[3] 37 percent of the 1,923 presenting problems and 59 percent of the 1,463 principal diagnoses were classified as being taught primarily on a family practice, internal medicine, or pediatrics service. Thirty percent of the presenting problems and 20 percent of the principal diagnoses were categorized as being dealt with primarily on a general or specialty surgery service. Sixteen percent of the problems and 11 percent of the diagnoses were categorized as requiring both medical and surgical training for management. The remainder of the problems and diagnoses were categorized as involving other residency services. The findings suggest that a wide range of problems is encountered by nonmetropolitan family physicians.

The data were also analyzed to determine the problems and diagnoses which the physicians identified most frequently. Table 4 lists the conditions in order of frequency. As the table indicates, 44 problems and diagnoses account for 80 percent of all the problems and diagnoses extracted from the sample of records. This finding is similar to the conclusion drawn from the data in the major study of family practice[4] in which 53 diagnoses accounted for two thirds of the 526,196 problems identified. The finding is also similar to the results of the 1974 National Ambulatory Medical Care Survey in which 15 diagnoses accounted for 40 percent of the 634,073 visits to office-based physicians in the United States and in which 15 principal problems accounted for 38 percent of all the problems.[5]

As Table 4 suggests, the family physicians see more patients for reasons of medical examination than for any other reason. This finding is consistent with the Virginia Study[4] and with the National Ambulatory Medical Care Survey.[5] That the nonmetropolitan family physicians also provide acute care is evident from the incidence of injuries, respiratory infections, and selected symptoms. At the same time, the distribution of problems and diag-

Table 4. Percentage Distribution of Problems and Diagnoses Frequently Identified in the Office Patient Records of 16 Family Physicians (Listed in Order of Frequency)
n=2994

Problem/Diagnosis	%	Problem/Diagnosis	%
Medical or special examination	12.1	Ulcers	1.1
Essential benign hypertension	6.4	Nervousness	1.1
Prenatal care	5.5	Vertigo	1.1
Lacerations, abrasions, sprains/strains	4.3	Fatigue	1.1
Arthritis, acute and unspecified	4.0	Throat soreness	1.0
Chronic ischemic heart disease	2.4	Rash	0.9
Diabetes mellitus	2.4	Acute tonsillitis	0.8
Acute upper respiratory tract infection	2.3	Cough	0.8
Neuroses	2.2	Hay fever	0.8
Obesity	2.1	Pulmonary emphysema	0.7
Malignant neoplasms	2.0	Viral warts	0.7
Back pain	2.0	Nausea	0.6
Headache	2.0	Congestive heart failure	0.6
Angina pectoris	1.8	Hernia	0.6
Bronchitis	1.7	Cystocele	0.5
Medical and surgical aftercare	1.6	Cystitis	0.5
Pharyngitis, all types	1.6	Vomiting	0.5
Benign neoplasms	1.4	Hemorrhoids	0.5
Arteriosclerosis	1.3	Acute myocardial infarction	0.5
Fractures	1.3	Cholecystitis, choliathiasis	0.5
Abdominal pain	1.2	Eczema and other skin disease	0.5
Otitis media	1.2	Asthma	0.4
		All other problems and diagnoses	21.4
All conditions—100%			

noses clearly indicates a population with chronic illness. Heart and circulatory diseases and cancer are frequently identified, as would be expected when a quarter of the patients are 60 years of age or older.

Compared with the Virginia Study[4] and a New York Study,[6] the records of the family physicians analyzed in this study gave few indications of the physician's management of family or social interaction problems. Family relationship problems, health education counseling, adverse effects of drugs, abuse of alcohol, and excessive smoking were rarely recorded as problems or diagnoses. As in other studies, the physicians did encounter social adjustment problems which were identifiable as neuroses. It is possible that more social adjustment problems were identified and managed as a matter of course in the visit and not recorded.

Table 5 contains a categorization of the disposition of patients who made office visits to the family physicians. In half the records, no follow-up plans could be identified. Thirty percent of the records contained an instruction for a return visit. Two percent indicated a referral or consultation request, and two percent of the visits led to a suggestion that the patient enter the hospital. A variety of other dispositions, totaling 16 percent of all the dispositions, were identified. Included in the "other" category were dispositions related to further tests, x-rays, and prosthetic equipment. Few dispositions related referrals to nonmedical resources. It is possible that physicians recommend that patients seek assistance from clergy or social agencies, for example, but do not record such suggestions in the patient record.

When asked to rank five choices in terms of the

Table 5. Percentage Distribution of Dispositions of Patients Visiting Family Physicians

No follow-up planned or specified	50
Return at a specified time	30
Referral or consultation requested	2
Admit to hospital	2
Other	16
Total	100

frequency with which the physician uses them in resolving difficult cases, the majority of the family physicians gave as their first choice: consulting a physician in another specialty. Referral was the second most frequent choice. Consulting a personal library or another family physician were selected with equal frequency by the majority as third choice, and consulting a hospital library was the least likely alternative. Family physicians indicated they most frequently sought assistance by referral or consultation for cardiac problems, neurologic-neurosurgical problems, orthopedic problems, general surgical problems, and ophthalmologic problems.

Hospital Activity

The family physicians deliver a range of services in the hospital setting, especially in hospitals with 100 or fewer beds and in hospitals without a large staff of affiliated specialists. As Table 1 indicates, the family physicians reported spending an average of 25 hours per week (range of 8-43 hours) in rounds, Emergency Room care, and operating room activities. In addition, some family physicians have clinical responsibility for rehabilitation or detoxification units. As Table 2 indicates, the family physicians report seeing an average of 11 patients per day (range of 4 to 17 patients) as they make hospital rounds.

The family physician in the nonmetropolitan area devotes a significant amount of time to delivering care in the hospital Emergency Room. Since the hospitals in Illinois are required to provide 24-hour Emergency Room coverage and since only the two largest hospitals in the study region have full-time emergency physicians on staff, the family physicians in most communities have emergency responsibilities as a condition of receiving hospital privileges. This requirement poses varying demands on the physician, related in part to the number of other physicians in the community; for example, he may be on call every third day or every seventh day or every fifth week. The physicians reported in the interview that residency training needs to prepare the physician for the range of problems encountered in the emergency setting, including surgery. They emphasized that special training is required to deal with pediatric emergencies, such as the need to intubate an infant. They also stressed the importance of training which prepared the physician to make differential diagnoses. In addition, the hospital Emergency Room is the locus for much nonemergent primary care. The family physicians estimated that only ten percent of the patients treated in the Emergency Room had a condition which was emergent (requiring immediate medical attention).

The family physicians' hospital activities also involve operating room responsibilities and visits to monitor the progress of hospitalized patients. As indicated in Tables 1 and 2, the family physicians report spending an average of four hours per week in the operating room performing an average of three procedures per week. The most frequently performed procedures were dilatation and curettage of the uterus, local excision of lesion or tissue of the skin and subcutaneous tissue, cholecystectomy, and repair of inguinal hernias.

In interviews, the family physicians stressed that primary care residency programs need to provide surgical training. They emphasized three types of surgical activities: (1) performing emer-

gency surgery; (2) providing preoperative care, assisting in surgery, and providing postoperative care; and (3) performing selected procedures.[3]

Attitudes about Nonmetropolitan Practice

When asked what distinguished nonmetropolitan from metropolitan practice, the family physicians emphasized that the physician in the nonmetropolitan area was required to manage a wide spectrum of problems but at the same time was in a better position to provide continuity of care. "Good family practice is impossible in the city" is the way one physician described the greater limitations on hospital privileges and the predominance of specialists in the urban setting. At the same time, the physicians reported that in a rural or nonmetropolitan area, the physicians work longer hours, may have more problems obtaining coverage when they need to be away from their practices, have more extensive Emergency Room responsibilities, and may find continuing education opportunities less accessible.

Discussion

While an analysis of diagnoses indicates that 40 to 50 frequently identified problems constitute the majority of the patient volume, an assessment of the range of diagnoses encountered suggests that the family physician manages problems covering all the organ systems and all the stages of human growth and development. The family physicians are providing pediatric, obstetric, general medical-surgical, and geriatric care. They provide care in office, operating room, Emergency Room, hospital ward, and other settings. As part of the surgical manpower pool, the family physicians perform surgery, assist surgeons, and refer patients to surgeons in the community or in larger centers. As part of the emergency manpower pool, the family practitioners must be available to provide Emergency Room coverage, and particularly in communities with few specialists for consultation or referral, must provide a range of diagnostic, stabilizing, and triaging functions as well as treatment.

The range of problems encountered and services provided suggests that medical schools should give emphasis to the unique characteristics of the nonmetropolitan area in training family physicians. Perhaps the central problem is preparing the family physician to identify the boundaries of his expertise and the interface with specialty and facility resources which have a different availability in nonmetropolitan areas than in metropolitan areas. Identifying the boundaries of expertise requires exposure to the diagnostic and treatment approach of physicians in other specialties. Making the interface with resources that are characteristic of a nonmetropolitan area requires training that gives specific attention to the issue.

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