

Referrals in Family Practice: A Comparative Study by Geographic Region and Practice Setting

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Although general and family practice physicians have long provided a large proportion of primary medical care in the United States, little attention has been directed to their rates and patterns of referral to consultants. A recent study is reported of referrals from eight family physicians representing solo and group practices in urban, suburban, and rural settings of central and northern California. The overall referral rate was 1.6 percent of a total of 6,409 hospital and office visits. No significant differences were noted among practice settings. Referring family physicians shared responsibility for patient care in a majority of referrals/consultations, thereby maintaining continuity of care. Over one half of all consultations were in the specialties of general surgery, orthopedics, obstetrics/gynecology, and urology. The results of this study are comparable to a smaller study carried out in New York State in 1971. Although available evidence indicates that family physicians can provide definitive care for up to 98 percent of patient visits in everyday practice, referrals/consultations represent an essential mechanism for providing the highest quality patient care and constitute an important method for the continuing medical education of family physicians.

Since the formation of the American Board of Family Practice in 1969, there has been dynamic growth and development of educational programs in the new specialty of family practice in a majority of American medical schools and many community hospitals. There has been a concurrent interest in more sharply defining the academic discipline of family medicine, together with beginning efforts

to develop a research base in this field. The rates and patterns of referral in family practice represent one area which has received little previous attention. A better understanding of referrals in family practice can help to further define comprehensiveness and continuity of care in family practice, and at the same time increase our awareness of this specialty's potential contribution to medical practice in general, as well as its relationship to other specialties. This kind of information is important within the context of a changing health-care delivery system which involves a potential redistribution of clinical specialties.

To date, there have been two

studies of referrals in family practice in the United States. In 1971 a study was conducted involving 7,514 ambulatory-patient visits to office-based physicians participating in a field test with the National Ambulatory Medical Care Survey. This study demonstrated that general and family practice physicians referred to another physician for consultation, diagnosis, or treatment 2.7 percent of the time, and referred for hospital admission under another physician's care 0.7 percent of the time.¹ Later, Metcalfe and Sischy studied four family practices in New York State over periods ranging from 36 days to 49 days. A total of 4,604 patient visits occurred and the overall referral rate for these practices was 2.2 percent.² In that study particular emphasis was placed on the distribution of referred patients according to sex and age, referrals to various types of specialists, and reports from specialists to individual referring family physicians. The authors reported that most referrals in the specialties were to general surgery, obstetrics/gynecology, orthopedics, and otolaryngology, and they noted that previous studies in Great Britain paralleled their results.^{3,4}

This paper reports the results of a recent additional study of referrals in eight family practices representing urban, suburban, and rural settings in central and northern California. This study was undertaken to determine the referral/consultation patterns over a 30-day period, permit a lapse of time, and then repeat the study on the same practices during another 30-day period. This allows a comparison of referral/consultation patterns by family physicians as influenced by time,

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geography, practice setting, and season. These results were then compared with the previous findings in New York State and the implications explored.

Methods

The sites selected for the study exemplified rural, suburban, and urban family practice in central and northern California. A stratified sampling technique was employed so that all types of practices would be fairly represented. It should be noted, however, that a completely random selection was not achieved due to the need for including only practices where cooperation would be assured.

Family physicians were selected on the basis of their professional reputations in their communities. All were members of the American Academy of Family Physicians. Six of the eight were Board-certified in family practice and had completed three years of graduate training before starting practice; the other two had completed two years and one year of graduate training, respectively.

The characteristics of each of the eight practices were gathered through the use of a questionnaire. In some cases, it was necessary to contact the physicians directly to clarify certain aspects of their practice profiles. To obtain information regarding total patient visits and referrals by type of referral or consultation, by diagnosis, and/or by therapy, each physician in the study was provided with a log for recording total patient visits made during the study period, as well as date, patient, problem, age, sex, type of consultation, specialty field, and location of consulting physician for each consultation and/or referral made.

All recordings were personally completed by the physician to ensure accuracy and reliability of data collected. Physicians were asked to use the log for the full month of February and for the full month of May 1974. After each recording session, logs were inspected to determine accuracy and, if any questions arose, physicians were contacted and the office records inspected to cross-check the validity of the information submitted. But this was not a serious problem since the

physicians were extremely cooperative and conscientious in recording the requested information and few questions arose. Six of the eight family physicians obtained complete recording of their referrals over the two 30-day periods. Due to illness and other unavoidable circumstances, two physicians were only able to participate in the study for one 30-day period.

The characteristics of the eight family practices which participated in the study can be summarized as follows.

1. *Physician A* is located in an urban setting in Sacramento, California. This physician has been in solo family practice for 12 years, five years at the present location. Medicaid patients comprise approximately 20 percent of the practice. The physician has privileges in three community hospitals, including medicine, pediatrics, obstetrics/gynecology, surgery, and coronary/intensive care. The community has a population of 750,000 and a total of 850 physicians, of whom 245 are in general or family practice, 73 in internal medicine, 51 in obstetrics/gynecology, 40 in ophthalmology, 40 in orthopedics, 18 in otolaryngology, 47 in pediatrics, 44 in psychiatry, 95 in surgery, 30 in urology, 8 in neurology, 10 in neurosurgery, 4 in nephrology, 16 in cardiology, and 13 in dermatology.

2. *Physician B* is located in a community of Yuba County, California. He shares a group practice with two other physicians and has a total of nine years in practice, six at the present location. Medicaid patients comprise approximately 50 percent of the practice. The physician has privileges in three hospitals, including medicine, pediatrics, obstetrics/gynecology, surgery, and coronary/intensive care. The community has a population of 50,000 and a total of 70 physicians, of whom 24 are in general or family practice, 6 in internal medicine, 6 in obstetrics/gynecology, 6 in ophthalmology, 5 in orthopedics, 3 in otolaryngology, 4 in pediatrics, 2 in psychiatry, 6 in surgery, 3 in urology, and 2 in dermatology.

3. *Physician C* resides in a rural farming community directly south of Sacramento. He has practiced eight years, all at the same location, and is in a group practice with three other physicians. Medicaid patients account

for approximately 20 percent of the practice. The physician has privileges in one hospital, including medicine, pediatrics, obstetrics/gynecology, and coronary/intensive care. The community has a population of 30,000 and a total of 49 physicians, of whom 19 are in general or family practice, 2 in internal medicine, 3 in obstetrics/gynecology, 4 in ophthalmology, 3 in orthopedics, 1 in otolaryngology, 2 in pediatrics, 5 in surgery, 2 in urology, 1 in dermatology, and 3 in anesthesiology. It should be noted that most of these physicians do not practice exclusively in that community but serve a wide rural area. Some also commute to a larger urban area.

4. *Physician D* resides in a suburban community north of Oakland, California, and is in a partnership with two other physicians. He has been in practice for five and a half years at the same location. This physician also spends two afternoons per week in a student health service at a local university. He has hospital appointments in two hospitals with privileges in medicine, pediatrics, obstetrics/gynecology, minor surgery, and coronary/intensive care. The total number of physicians is 259, of whom 15 are in general or family practice, 48 in internal medicine, 21 in obstetrics/gynecology, 6 in ophthalmology, 12 in orthopedics, 5 in otolaryngology, 21 in pediatrics, 57 in psychiatry, 15 in surgery, 6 in urology, 4 in neurosurgery, and 4 in neurology.

5. *Physician E* also practices in the urban setting of Sacramento. He is in a partnership with one other physician and has eight years total practice experience, three years at the present location. About 15 percent of the patients are Medicaid. The physician has privileges in two hospitals, including medicine, pediatrics, obstetrics/gynecology, surgery, and coronary/intensive care. The size of the community and the total number of physicians is the same as for Physician A.

6. *Physician F* resides in a rural community north of San Francisco. This physician is in solo practice and has practiced 16 years at the same location. He has a special interest in anesthesia. Medicaid patients comprise about 15 percent of the practice. The physician has privileges in one hospital in his town and has courtesy staff privileges in four hospitals situated in

Table 1. Referral Rates by Practice for Two Sample Months

Physician	Total Hospital and Office Visits		Number of Referrals		% Referral Rate		% Average
	February	May	February	May	February	May	
A	446	505	7	4	1.38	.79	1.15
B	639	672	4	8	.62	1.19	.91
C	643	739	24	13	3.73	1.00	2.67
D	200	259	7	7	3.50	2.70	3.05
E	570	548	10	10	1.75	1.00	1.78
F	403	485	3	6	.99	1.00	1.01
Totals	2,901	3,508	55	48	1.89	1.36	1.60

another community 12 miles away. Hospital privileges include medicine, pediatrics, obstetrics/gynecology, surgery, and coronary/intensive care. The community has a population of 3,993 and a total physician population of 18, of whom 13 are in general or family practice, 1 in internal medicine, 1 in ophthalmology, 2 in orthopedics, and 1 in psychiatry.

7. *Physician G* resides in a small rural community north of San Francisco. This physician is in a three-man practice and has practiced ten years in the same community, the past four years in a new office with two other physicians. He has special interests in learning disorders, sports medicine, and care of critically-ill patients in the Intensive Care Unit-Coronary Care Unit. Medicaid patients comprise about five percent of the practice. The physician has privileges in two hospitals, one in his town and one a larger county hospital, 15 miles from his office. Hospital privileges include medicine, pediatrics, obstetrics/gynecology, surgery, and coronary/intensive care. The community has a population of 6,000 and a total physician population of 17, of whom 10 are in general or family practice, 3 in internal medicine, 1 in ophthalmology,

1 in orthopedics, and 2 in surgery.

8. *Physician H* resides in a suburban community directly east of Sacramento. This physician is in solo practice and has practiced 15 years, six years at the present location. About ten percent of the patients are Medicaid. The physician has privileges in two hospitals, including medicine, pediatrics, obstetrics/gynecology, surgery, and coronary/intensive care. The community has a population of 43,000 and a total physician population of 38, of whom 6 are in general or family practice, 8 in internal medicine, 4 in obstetrics/gynecology, 1 in ophthalmology, 3 in orthopedics, 2 in otolaryngology, 3 in pediatrics, 8 in surgery, and 3 in urology.

Results

Of these eight practices studied, only the first six were included for monthly analysis because the other two did not participate in both months of the study. Nevertheless, all eight were used for comparison between eastern and western United States family practice referral patterns by specialty. Table 1 displays referral patterns during the two sample-month

periods for this study.

A total of 6,409 hospital and office visits were made during February and May 1974. A seasonal difference in referral rates was noted. A total of 55 referrals occurred during the month of February, whereas only 48 referrals occurred during May, even though more patients were seen in May than in February. Corresponding referral rates for both periods reflected a higher number of referrals during February, 1.89 percent, while during May, when more patients were seen, the referral rate was 1.36 percent. In general, during the two-month study period, the overall referral rate was 1.60 percent, somewhat less than the 2.2 percent reported by Metcalfe.² While this may indicate that family practice referrals may differ between the eastern and western parts of the country, the data are incomplete because only two sample months were studied. It is entirely possible that if more months were studied, referral rates might be higher or lower in any given month.

In an effort to better understand the type of consultations requested by the family physicians participating in this study, the researchers asked them to identify each consultation/referral

Table 2. Type Referral/Consultation by Practice for Two Sample Months

Physician	Maintained Total Responsibility		Physician and Consultant Shared Responsibility		Consultant Assumed Full Responsibility for Care of Problem Requiring Referral		Total
	February	May	February	May	February	May	
A	0	0	4	3	3	1	11
B	0	0	3	1	1	7	12
C	0	1	10	11	14	1	37
D	1	0	3	5	3	2	14
E	0	1	10	6	0	3	20
F	0	0	1	4	2	2	9
Totals	1	2	31	30	23	16	103

in one of three ways: (1) family physician maintaining full patient-care responsibility, (2) family physician and consultant sharing patient-care responsibility, or (3) consultant assuming full responsibility for care of the patient's problem requiring referral. A summary of referrals/consultations by type is shown in Table 2. It shows that the family physician maintained full responsibility three percent (3 of 103) of the time. In 38 percent of the instances (39 of 103), the consultant assumed full responsibility for the care of the referral problem; most of these referrals involved referral to a consultant in another community. The most frequent type of referral, 59 percent of all referrals (61 of 103), involved a team approach whereby the consultant and the family physician shared responsibility for patient care.

Table 3 displays a comparison between family practice referrals in the eastern and western United States, based on available data. Referral patterns were quite similar, with high-frequency referrals noted particularly in general surgery, orthopedics, obstetrics/gynecology, and urology. These four areas constituted over 56 percent of all referrals from eight western family practices and over 54 percent

from the four eastern family practices. High differences in absolute numbers and rank orders of referral patterns were noted for ophthalmology, otolaryngology, and dermatology. The availability of specialists may be a factor in the differences noted.

These data indicate that family physicians most frequently refer to general surgeons, obstetricians/gynecologists, and surgical subspecialists. Referrals by family physicians to general internists and pediatricians are relatively infrequent and are exceeded by those to subspecialists. In internal medicine, for example, the five medical subspecialties (cardiology, hematology, endocrinology, gastroenterology, and oncology) comprised an absolute number of 13 referrals (six percent) compared with 10 referrals to general internists (four percent). Pediatric referrals represented less than 0.5 percent of all referrals.

Discussion

The data presented in this study are of interest in several respects. Family practice referral rates in the eastern and western United States were of the same approximate order of magnitude

as those previously reported in England — between one and three percent. Also, it is striking that the referral rates of family physicians practicing in urban, suburban, and rural settings are quite similar. The commonly expressed view that the family physician provides definitive care for about 80 to 85 percent of patient problems has not been documented. The results of these two studies suggest that family physicians provide definitive care for approximately 98 percent of patient visits in daily practice. Since the studied family practices included patients from pediatric to geriatric age groups, as well as obstetrics, the actual contribution of family practice in the definitive management of primary-care problems is indeed impressive.

It is granted that in this study, as well as in the previous studies, the quality-of-care issue was not adequately addressed. We can only assume that the professional reputations of the participating physicians, together with Board certification and the extent of their prior graduate training, would correlate favorably with acceptable quality-of-care standards.

It is noteworthy that a majority of the referrals in this study involved

Table 3. A Comparison between Eastern and Western United States Family Practice Referrals to Specialties*

Specialty	Geyman, Brown & Rivers		Metcalf & Sischy		Combined Data	
	Absolute Number	Rank Order	Absolute Number	Rank Order	Absolute Number	Rank Order
General Surgery	26	1	26	1	52	1
Orthopedics	20	2	10	3.5	30	2
Obstetrics/Gynecology	15	3	11	2	26	3
Ophthalmology	14	4	6	8	20	4
Urology	10	5	8	5.5	18	5
Neurology	8	6	8	5.5	16	6
Otolaryngology	3	11	10	3.5	13	7
Internal Medicine	7	7.5	3	10	10	8.5
Psychiatry	7	7.5	3	10	10	8.5
Dermatology	0	—	7	7	7	10
Cardiology	4	9.5	1	15	5	11
Acupuncture (MD)	4	9.5	0	—	4	12
Hematology	2	13	1	15	3	13.5
Plastic Surgery	0	—	3	10	3	13.5
Endocrinology	1	15.5	1	15	2	15.5
Gastroenterology	2	13	0	—	2	15.5
Allergy	0	—	2	12	2	15.5
Speech Therapist	2	13	0	—	2	15.5
Pediatrics	0	—	1	15	1	19
Adolescent Behavior Clinic	0	—	1	15	1	19
Oncology	1	15.5	0	—	1	19
Totals	126	—	102	—	228	—

*Data includes findings in this report (8 physicians) and findings of Metcalfe and Sischy (4 physicians).²

sharing of patient-care responsibility by the referring family physicians and their consultants. This finding would appear to corroborate the family physician's interest in providing continuity of care, which is particularly feasible when the consultants practice in the same community.

The comparisons drawn in Table 3 between the rank order of consulting specialties in the eastern and western United States are also interesting. The preponderance of referrals in both regions involved the surgical fields, obstetrics/gynecology and, to a lesser extent, the medical subspecialties. It is significant that consultations were only occasionally requested from pediatricians and general internists, which tends to confirm their roles as primary care physicians.

This is the first study which has looked at possible seasonal differences in referral rates. The results suggest significant differences between winter and spring months for reasons that are not entirely clear. It will remain for further studies, including summer and fall months, to elucidate this question and establish the validity of the studies already completed. In addition, comparison studies of other specialties' referral rates would ascertain the interrelationship among the various specialties.

Overall, these data tend to support the concept that well-trained family physicians can, and do, handle the large majority of patient-care problems in everyday practice, and that an increased number of physicians trained in this specialty will enhance the health-care delivery system in the United States. Yet, referrals/consultations are a vital mechanism for providing each patient with the highest possible quality of care and represent an important method for the continuing education of family physicians.

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