

In studying the role of a university clinic in the medical care of a largely rural area, where the clinic has chiefly a consultative function, attention was devoted to physicians' reasons for referral to this facility. This report describes these reasons and deals with some of the factors which affect the referral process.

PATIENT REFERRAL TO A UNIVERSITY CLINIC: PATTERNS IN A RURAL STATE

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THE ROLE of the university clinic in the medical care of its surrounding area is largely unexamined; this is particularly true of university clinics located in predominantly rural states. In such areas, regular medical care is of necessity provided by the local physician; the university clinic would be expected primarily to provide consultation for the physician or health agency in outlying communities rather than to give continuous care for a large group of patients as may occur in urban communities.

In the rural setting, therefore, the processes by which patients are referred and get to the university clinic are primary determinants of the role it can play in the medical care of the area. Clinical teaching as well as genetic, epidemiological, and other forms of research at the university center are similarly affected by the patterns of patient referral.

The present report is a preliminary description of this process of referral and of certain variables which affect it, as studied in the General Clinic of the North Carolina Memorial Hospital (NCMH), associated with the

School of Medicine of the University of North Carolina. This clinic serves as a comprehensive diagnostic and consultant center for ambulatory patients referred from the eastern two-thirds of North Carolina.¹ The consultant role has been strongly emphasized in the clinic and throughout NCMH from the time of their opening in 1952. Except in emergencies, patients are accepted only on referral by a physician or agency. Each patient in the General Clinic receives a thorough work-up by a senior medical student or house officer under staff supervision, is seen several times on return visits until his problem is clarified and a therapeutic regimen established, and is then returned to the care of his referring physician. The records of the clinic are examined weekly and are not considered complete until a summary letter has been sent to the referring physician. Only a few patients are followed for prolonged periods in two small demonstration teaching programs and in areas of special interest to members of the staff. It is in such a consultation-oriented setting that the natural history of the referral process is being examined.

Table 1—Number of Physicians in Study Area—By Strata (Figures in Each Cell are in Order from Top to Bottom: Population of Physicians, Predicted Sample Size, and Number Interviewed. Blank Cells Are Empty)

No. of Referrals in 1956	Age of M.D.	WHITE GENERAL PRACTITIONERS						WHITE SPECIALISTS						Negro M.D.'s
		Pop. under 25,000			Pop. over 25,000			Pop. under 25,000			Pop. over 25,000			
		<25Mi.	25-99	100+	<25Mi.	25-99	100+	<25Mi.	25-99	100+	<25Mi.	25-99	100+	
0	<40		74 5 4	35 4 4		23 1 1		36 2 2	27 2 2		43 3 3		19 1 1	
	40-59	6 1 1	66 4 4	58 4 4	12 1 1	17 1 1			80 5 5	64 4 4	23 1 1	113 7 7	43 3 3	33 2 2
	60+		67 4 4	51 3 3		27 2 2		37 2 2	20 1 1		41 3 3		35 2 2	
1-2	<40		30 10 12	12 4 5		2 1 0			5 2 0	5 2 1		8 3 3		5 2 2
	40-59	6 2 2	31 10 10	14 5 1		8 3 0			22 7 5	13 4 5	3 1 0	9 3 2	2 1 1	10 3 2
	60+		13 4 1					10 3 1				2 1 0		3 1 0
3+	<40	2 1 1	24 8 9	5 2 1		4 1 1			9 3 3					
	40-59		18 6 6						7 2 2					5 2 2
	60+	3 1 1	5 2 2											2 1 1

Methods

A. Design of Sample and Interviews

The development of the methodology for this study is the subject of a previous publication.² In brief, the study involved interviews of a sample of physicians and of the patients they referred, and examination of relevant material in the patients' medical records. A stratified random sample of physicians was selected from the eastern two-thirds of North Carolina, an area which includes 90 per cent of physicians referring patients to the General Clinic and 95 per cent of the physician-referred patients. The population of physicians in the study area was classified by several variables for the reference period (the year 1956) and is shown in Table 1. A 33 per cent sample of physicians who had referred patients and a 6.5 per cent sample of physicians

who had not referred patients to the clinic in 1956 were selected at random within the various strata. Interviews with physicians who had referred patients in 1956 were conducted after they referred one or more patients during the study period (August 1, 1957-February 28, 1959), and included questions about a specific "key" patient whom they had recently referred.

The sample of patients was based upon the sample of physicians: One "key" patient was included for each referring physician and additional patients referred by frequently-referring physicians were also interviewed. Other sources of referral were also sampled;² however, they will not be discussed in this report.

Physicians were interviewed, in most instances in their offices, by one of the three physicians of the research team. A focused, nondirective, semistructured

interview was used and answers were recorded on a form in the order given. Patients were interviewed by a medical social worker and a cultural anthropologist, using a similar technic. A brief preliminary interview with each patient was held at his initial visit to the clinic; the principal interview was conducted at the patient's home from four to eight weeks later.

B. Results of Sampling

The study period during which patients and their referral sources were accepted into the sample lasted 19 months. The numbers of physicians and physician-referred patients accepted into the sample and interviewed are shown in Tables 1 and 2. The cells for which the number interviewed did not come up to the expected sample size occurred entirely among the physicians who had referred one or two patients to the clinic in 1956. Because of the slow rate of referral from these physicians, noted early in the study period, the method by which the interview process was initiated was altered² to increase the rate of appearance in the sample of patients from these infrequently-referring physicians. Even with this change, the number of physicians of this category included in the study was 19 short of the expected number

when the field work had to be terminated for practical considerations of time.

In discussing this apparently irregular and unpredictable referral performance by the physicians who refer infrequently, it was suggested previously² that the irregularity might be due to a greater influence by the patients themselves on the initiation of referral than was anticipated, a conclusion that is borne out strongly in the evidence presented below. That the lack of appearance of patients from these particular physicians is not a result of any general trend toward decreased utilization of the clinic is indicated by figures of steady growth in the total number of patients seen in the Outpatient Department as a whole (11 per cent per year), and in new patients seen in the Screening and General Clinics specifically (4 per cent per year) throughout this period.

The incidence of refusal to be interviewed was very low. Despite many attempts, one physician would never agree to set a time for an interview. One other physician, frequently hospitalized with a chronic illness, was too ill to be interviewed. These physicians were replaced in the sample, as were physicians found to have moved out of the area, to have stopped practice or

Table 2—Population of Physicians in Study Area in the Reference Year (1956); Sample Size Expected; and Sample Interviewed in Study Period (August 1, 1957, Through February 28, 1959)

Number of Referrals to Clinic in 1956	Physicians			Patients	
	Population in Referral Area	Sample Size Expected	Sample Interviewed	Minimum Sample Expected	Sample Interviewed
None	1,068	68	68	0	4
1-2	213	72	53	72	75
3+	84	29	29	58	46
	1,365	169	150	130	125

to have died. Four patients would not agree to a home interview; in one of these instances the patient's wife was interviewed at home.

C. Analysis of Data

A preliminary categorization of answers obtained during the pretest interviews was carried out. Approximately 50 of the study-period interviews with physicians and 50 interviews with patients were examined in terms of the original categories. These categories were revised slightly, and codes for the answers to each question established. The coding instructions for the two questions of the physician interview discussed in the present paper are contained in the Appendix.

The answers from the physician interviews were coded independently by the three physicians of the research team, the codings compared with each other, and differences resolved by mutual agreement. For the questions included in this report, few differences in initial coding by the three physicians occurred; most of the verbatim answers about reasons for referral fitted directly into the categories. The same procedure was followed by the two social scientists in arriving at a final code for the answers to the patient interviews.

The classification of physicians as general practitioners or specialists, based originally on data from the American Medical Directory and the Roster of Fellows of the Medical Society of the state of North Carolina, was reconsidered in the light of the physicians' statements at the time of interview. Each physician was reclassified as general practitioner, specialist, or as having a mixed type of practice; this final classification is used in the tables. By this reclassification, seven physicians originally considered specialists were reclassified as general practitioners (almost entirely because the American Medical Directory lists physi-

cians' stated areas of special interests, e.g., obstetrics or pediatrics, but does not differentiate these from an actual specialized form of practice), and seven specialists and four general practitioners were reclassified as having a mixed type of practice, usually general practice with some surgery.

Patterns of Referral to a Medical Center

A. Physicians' General Reasons for Referral to a Medical Center, Compared with Reasons for Referral of Specific Patients

The questions asked of physicians about reasons for referral to a medical center dealt first with their general views about referral, i.e., "Why do you refer patients to a medical center?," followed in the instances in which the physician had recently referred a "key" patient to the clinic by the question, "Why did you refer the key patient?" The last column of Table 3 presents the first answers of all physicians to the general question. The type of reason most frequently given was, "Help with diagnosis and treatment," stated in those words or in closely related, nonspecific terms (see Appendix). Other frequent answers were "Inadequacy of local facilities" and referral "for more specialized diagnosis or treatment."

The various reasons for referral to a medical center given by physicians have been grouped in Table 3 under three headings: (A) referrals initiated by the physician for rather specific reasons; (B) referrals initiated by the physician for nonspecific reasons; and (C) referrals initiated primarily by the patient or for economic reasons. These groups may be described in more detail.

In Group A, physician-initiated referrals for specific reasons, are included those reasons which indicate that the referring physician has to some degree delineated the patient's problem and has some specific purpose in mind in

seeking consultation: He has identified the problem to the extent of knowing that it is outside the limits of his practice, or beyond his competency, or beyond the capabilities of local facilities; perhaps he has narrowed the diagnostic or therapeutic possibilities to one special area of medicine. Referral to a medical center because a patient presents an instructive teaching problem—a reason rarely given—is also included in this group.

In Group B, physician-initiated re-

ferral for nonspecific reasons, are placed the answers which indicate that the physician is seeking professional consultation at a medical center about a patient who presents a problem to him, but the type of problem and the type of help needed are not specified. The patient is referred, "For help in diagnosis and treatment," or "For a complete check-up," or, "To reassure the physician that he is right," or, "Because the patient may be seen there by many specialists at one place"—

Table 3—First Answer by All Physicians to the Question, "Why Do You Refer Patients to a Medical Center?"

Answers	General Practitioners	Specialists	Mixed Type of Practice	All Groups
A. Physician-initiated referrals for specific reasons:				
a. Problems outside voluntary limits of his practice	4	2	0	6
b. Problems beyond his competency but in his field	2	8	1	11
c. For more specialized diagnosis and treatment	6	10	2	18
d. Inadequate local facilities	12	6	3	21
e. Patients with instructive teaching problems	3	2	0	5
Total for A.	27 (27%)	28 (68%)	6	61 (41%)
B. Physician-initiated referrals for nonspecific reasons:				
a. For diagnosis and treatment, no specifications	48	9	3	60
b. Unified clinical facilities	12	0	0	12
Total for B.	60 (61%)	9 (22%)	3	72 (48%)
C. Referrals initiated primarily by patients:				
a. Direct request of patient or family	8	1	1	10
b. Apparent loss of rapport between physician and patient	1	2	1	4
c. Medically indigent patients	2	1	0	3
Total for C.	11 (11%)	4 (10%)	2	17 (11%)
Totals	98 (100%)	41 (100%)	11	150 (100%)

to list some of the typical answers which have been included in this group; also see the Appendix.

Reasons included in Group C, "Referrals initiated primarily by the patient," appear to be a group distinctly different from the two previously described. In most instances, the patient has asked the physician directly to be referred to the medical center; less frequently, the patient indicates to the physician that some of his questions about his health are unanswered, in such a way that the physician recognizes either an impending or an overt loss of rapport and makes the referral, "To reassure the patient." The rare referrals because of medical indigency of the patient have also been placed in this group.

No value judgments can be made on the basis of these groups of reasons alone about the appropriateness of the reasons themselves, either medically or socially. Depending upon circumstances, each could be a sound reason for referring a patient; for example, if the physician or patient senses a lack of confidence between the two, then it would certainly seem to be in the best interests of the patient that he be referred to some other physician or to a medical center.

The first answer which physicians gave for referring patients were also classified by the type of practice of the physician; the results, shown in Table 3, are discussed in a later section.

Inasmuch as physicians usually gave several answers when asked their general reasons for referral, an arbitrary system of weighting these multiple answers was selected. It was based upon the order in which the answers were given by the physicians. The first answer was given a weight of "5," the second "4," and so forth, down to "1" for his fifth answer. It is thought that the first answers given may represent the more frequently oc-

curing reason in the physician's experience and the later answers, less frequently occurring reasons. Thus, this weighting scheme might give a better reflection of the over-all frequency of reasons for referral among the physician population as a whole than would first answers alone. However, it is recognized that other factors could and probably do affect the order of answers given; i.e., first answers may tend to be "acceptable" answers and later answers may be the real reason for referral.

Table 4, last column, presents the totals of the weighted scores for each answer to the general question about referral. It is noteworthy that the weighted scores for referral initiated primarily by patients (Group C), 30 per cent, are considerably higher than the 11 per cent found for first answers alone. This result suggests that, although physicians do not often view a disturbance in their relationship with patients as the first of their general reasons for referral to a medical center, they do recognize its presence among their reasons to a substantial degree. This shift to Group C is based upon the arbitrary scheme of weighting the order of answers. However, if this scheme is wrong, or in reverse direction of what the weights should be, then the trend to Group C answers would be still more pronounced.

To obtain a more direct measure of the reasons for referral as actually practiced, each referring physician was next asked why he had referred the "key" patient to this medical center. The key patient's views of the reason he was referred, and who initiated the referral, were also obtained.

Table 5 presents the answers to the question, "Why did you refer the key patient?," given by 84 of the 85 physicians in the sample who, by the design of the study, had a key patient. The 85th physician could not recall why he

had referred the specific patient. The answers are recorded in three ways. The first column of Table 5 gives the first answer of the physician to this question. The nonspecific reason, "For diagnosis and treatment," is the answer most frequently given. However, the second most frequent answer has now become, "At the request of the patient or his family." When these first answers are grouped into the three descriptive groups defined above, Group C, referrals

initiated primarily by patients or because of diminished rapport, is the largest and accounts for 42 per cent of the total.

The second column in Table 5 presents the weighted scores of all answers to this question by physicians.* It can be seen that the weighted scores in this

* Inasmuch as no more than three answers were ever given to this question, the weights assigned were three, two, and one, respectively, for first, second, and third answers.

Table 4—Responses of All Physicians, Weighted for Multiple Answers, to the Question, "Why Do You Refer Patients to a Medical Center?"

Answers	General Practitioners Score*	Specialists Score	Mixed Type of Practice Score	All Groups Score
A. Physician-initiated referrals for specific reasons:				
a. Problems outside voluntary limits of his practice	27	14	0	41
b. Problems beyond his competency but in his field	43	63	5	111
c. For more specialized diagnosis and treatment	64	88	14	166
d. Inadequate local facilities	178	84	23	285
e. Patients with instructive teaching problems	85	27	19	131
Total for A.	397 (30%)	276 (53%)	61 (40%)	734 (37%)
B. Physician-initiated referrals for nonspecific reasons:				
a. For diagnosis and treatment, no specifications	340	74	30	444
b. Unified clinical facilities	189	24	15	228
Total for B.	529 (40%)	98 (19%)	45 (29%)	672 (34%)
C. Referrals initiated primarily by patients:				
a. Direct request of patient or family	200	66	20	286
b. Apparent loss of rapport between physician and patient	154	66	18	238
c. Medically indigent patients	42	16	9	67
Total for C.	396 (30%)	148 (28%)	47 (31%)	591 (29%)
Totals	1,322 (100%)	522 (100%)	153 (100%)	1,997 (100%)

* Physicians' multiple answers were weighted in the order in which they gave them: "5" for first answer, "4" for second answer, etc. Scores represent the total weighted value for each category.

Table 5—Answers by Referring Physicians to the Question, “Why Was the Key Patient Referred?”

Answers	First Answers by Physicians	Weighted Answers by Physicians*	First Answers by Physicians Revised in the Light of Patients' Statements†
A. Physician-initiated referrals for specific reasons:			
a. Problems outside voluntary limits of his practice	1	5	
b. Problems beyond his competency but in his field	3	18	
c. For more specialized diagnosis and treatment	15	67	
d. Inadequate local facilities	1	16	
e. Patients with instructive teaching problems	0	2	
Total for A.	20 (24%)	108 (29%)	18 (21%)
B. Physician-initiated referrals for nonspecific reasons:			
a. For diagnosis and treatment, no specifications	29	108	
b. Unified clinical facilities	0	3	
Total for B.	29 (34%)	111 (30%)	23 (27%)
C. Referrals initiated primarily by patients:			
a. Direct request of patient or family	21	71	
b. Apparent loss of rapport between physician and patient	11	22	
c. Medically indigent patients	3	55	
Total for C.	35 (42%)	148 (40%)	43 (51%)
Grand Total	84 (100%)	367 (100%)	84 (100%)

* Answers weighted as in Table 4 except that first answer was given weight of “3,” second “2,” etc.

† When patients stated specifically that they had asked the physician to refer them (although physicians had not indicated this), such instances were changed from the original categories to Group C.

table compare well with the first answers given.

The third column in Table 5 presents the classification of first answers given by physicians, as altered by the instances in which the key patients stated that they rather than the physician had initiated the referral. In 18 of the 20 instances in Group A, the patient confirmed what the physician had replied. In the other two instances, the patient specifically stated that he had initiated the referral himself and this number was transferred to Group C. Of the 29 replies in Group B (based on physicians' answers), six patients stated that they had asked the physician to refer them to the clinic and these were similarly transferred to Group C. These transfers, added to the 35 instances already classified as primarily patient-initiated referrals in the physicians' views, gives a total of 43 instances in this category.*

The third column in Table 5 indicates that among a representative sample of patients nominally referred by physicians to the General Clinic of this medical center, slightly more than half of them were considered by either the physician, or patient, or both to be patient-initiated referrals. As stated before, no value judgments can be made about the soundness of this reason for referral. However, referral on this basis, largely beyond the control of physicians, appears to be an important factor in determining the way in which a medical center is utilized in providing medical care to its surrounding area and in providing teaching for medical personnel of all types.

Until studies comparable to the pres-

* There were 11 instances in which the physician considered the referral primarily patient-initiated, whereas the patient thought the physician had initiated the referral. These have not been removed from Group C in Table 5 because, in the opinion of at least one person involved (the physician), the patient had indicated his desire to be referred elsewhere.

ent one are made in other consultant settings, one can only speculate about the applicability of these findings beyond this clinic. Inasmuch as this clinic probably emphasizes more strongly than most the consultant role of the clinic and the necessity for having a referring physician, it seems likely that other referral centers have at least as large a proportion of patients who refer themselves via their local physicians.

B. Variables Among Physicians Which Affect Reasons for Referral to a Medical Center

(1) Type of Practice—It might be expected that the nature of specialization itself would lead specialists to refer patients for specific reasons (Group A) more often than general practitioners. On the other hand, there are no obvious grounds for expecting any difference between specialists and general practitioners in referrals that are patient-initiated. As shown in Tables 3 and 4, the general reasons for referral given by specialists and general practitioners appear to bear out these expectations. Sixty-eight per cent of specialists gave a specific reason (Group A) as first answer, compared to only 27 per cent of general practitioners, with converse figures for nonspecific reasons (Group B). These differences were statistically significant ($P < 0.01$).† The same differences are noted when weighted scores are considered (Table 4). There are no differences by type of practice in the frequency of Group C reasons.

However, when the reasons for referral of key patients are considered among the specialist group a change has apparently occurred in the frequency with which referral is made for specific, Group A, reasons. Whereas 68 per cent of the specialists' first answers to the general question were classified in this group, Table 6 shows

† Except where otherwise noted, tests of statistical significance have been made by the Chi-Square Test.

Table 6—Answers by Referring Physicians to the Question, “Why Was the Key Patient Referred?” Compared with Type of Practice

First Answers by Referring Physicians Revised in the Light of Patients' Statements	General Practitioners		Specialists		Mixed Type of Practice	All Groups	
	Number	Per cent	Number	Per cent	Number	Number	Per cent
A. Physician-initiated referrals for specific reasons	14	22	4	27		18	21
B. Physician-initiated referrals for nonspecific reasons	19	30	3	20	1	23	27
C. Referrals initiated primarily by patients	31	48	8	53	4	43	51
Totals	64	100	15	100	5	84	100

that only 27 per cent of their reasons for referring the key patient fall here. This difference is a significant one ($P < 0.05$) and the figures now approach those of the general practitioners in such a manner as to obviate the difference between the two types of practices. It appears that the specialists view themselves, when speaking in general terms to a physician-interviewer who is himself a specialist, as referring for more specific reasons than does the general practitioner, but in actual practice as sampled in this study, they refer for much the same reasons.

In contrast, the general practitioners in this study viewed their frequency of referral for specific reasons, in answer to the general question, very similarly to what was found in the sample of key patients referred by them: 27-30 per cent in general (Tables 3 and 4) versus 22 per cent in actual patients (Table 6).

(2) Distance of Referring Physicians from the Medical Center—The hypothesis may be stated that the farther a patient has to travel to the medical center, the more specific would be the physician's reason for referral. Thus, more referrals for specific reasons (Group A) would be expected from physicians at greater distances. In addition,

it seems reasonable to expect that more patients from nearby would be primarily patient-initiated referrals (Group C). The data of this study support these hypotheses, and may be presented in two ways.

First, Table 7-A shows the frequency of physicians' reasons for referral of the key patients (revised as per Table 5 in the light of patients' statements), divided into two approximately equal groups based on distance of the referring physician from NCMH. Thirteen of the 18 patients, or 72 per cent, referred for specific reasons (Group A) were from physicians over 70 miles away. In contrast, among patient-initiated referrals (Group C), 28 out of 43, or 65 per cent, came from physicians nearer than 70 miles. These differences are significant ($P < 0.05$).

Another way of presenting the same information which allows more efficient statistical use of the data, although it is an inverse approach to the problem, is comparison of the mean distance from NCMH of the physicians who gave each of the three groups of reasons for referring key patients. Table 7-B presents these results. The mean distance for specific reasons for referral is greatest and the mean distance for primarily patient-initiated referrals is least. These

differences are significant ($P < 0.01$) whether all physicians are considered or general practitioners alone, or whether the reasons for referral are based upon the patients' statements or the first answer by the physician. An analysis of variance of these observations shows a highly significant difference in the distances recorded for these reasons for referral. In fact, if one should assume an equal "spacing" between the three groups of reasons, virtually all of the variability among these three groups can be explained by a linear relation-

ship between distance and reasons for referral.

Thus, the distance from the medical center (or some factor related to distance) appears to be an important determinant of the reasons for referral of a representative group of patients. Most patients from a distance are referred for rather specific reasons; most patients from nearby come to the clinic on their own initiative, even though they work through their own physicians to arrange the "referral." In stating their general views about reasons for

Table 7—A. Answers by Referring Physicians to the Question, "Why was the Key Patient Referred?" Compared with Distance of Referring Physician from the Medical Center

First Answer by Referring Physicians Revised in the Light of Patients' Statements	Less than 70 Miles		70+ Miles		All Groups	
	Number	Per cent	Number	Per cent	Number	Per cent
A. Physician-initiated referrals for specific reasons	5	28	13	72	18	100
B. Physician-initiated referrals for nonspecific reasons	12	52	11	48	23	100
C. Referrals initiated primarily by patients	28	65	15	35	43	100
Totals	45	54	39	46	84	100

B. Comparison of Mean Distances from NCMH of Physicians Referring Key Patients for the Different Groups of Reasons

	Mean Distances, in Miles, for Physicians Referring Because of:		
	A. Physician-Initiated Referrals for Specific Reasons	B. Physician-Initiated Referrals for Nonspecific Reasons	C. Referrals Initiated Primarily by Patients
1. All referring physicians—first answer by physician	82.4	64.6	60.2
2. All referring physicians—first answer revised in light of patients' statements	85.0	67.2	59.3
3. General practitioners only—first answer by physician	79.2	65.2	54.2
4. General practitioners only—first answer revised in light of patients' statements	83.7	68.6	47.2

referral to a medical center, many relatively nearby physicians did not seem to be aware of the magnitude of patient-initiated referrals in their area.

(3) Age of Referring Physician—In a study of the medical practice of general practitioners in North Carolina, Peterson, Andrews, Spain, and Greenberg found that there was a correlation, for physicians under 35, between rank in medical school and thoroughness of the work-up of patients (history, examination, and laboratory studies).³ On this basis, it was hypothesized that some of these younger physicians, having investigated the problem more thoroughly, would more often refer for specific reasons.

When the mean age of physicians giving each group of answers was calculated for the 84 referring physicians, there was a significant relationship between age and classification by reason for referral ($P < 0.025$ by analysis of variance). The mean age of physicians who gave specific reasons for referral (Group A) was 38 years; of those who gave nonspecific reasons (Group B), 42 years; and of those for whom referral was primarily patient-initiated (Group C), 45 years.

It is noteworthy that all eight instances in which a key patient's statement that he initiated the referral was at variance with the physician's views occurred among physicians over 40 years of age, even though the sample contained approximately equal numbers under and over 40. Thus, the younger physicians seem to have either perceived or expressed their reasons for referral more precisely.

Other Observations

The present report concerns primarily the patterns of referral by physicians to a medical center and some of the characteristics of the physicians which affect these patterns. Certain related observa-

tions seem worth reporting briefly, although they will be presented in detail elsewhere.

First, 49 of the 85 physicians who referred key patients (58 per cent) sent no written or telephonic medical information with or about the patients. Thus, well over half the time the clinic entered into a consultative relationship with a referring physician without any information about the patient from the physician and no knowledge of the questions he wanted answered. This large figure was not due to the referral of patients who asked the physician to refer them: Medical information was sent about these patients as often as about others.

Second, 46 of the 85 key patients (54 per cent) had not returned to see their referring physicians (or any local physician) by the time of the home interview with the patient. This interview was from four to eight weeks after the patient's initial visit to the clinic, and was always after the work-up had been completed and a summary letter sent the referring physician. Of these 46 patients, 12 were patients who had been to see the referring physician only once, for the sole purpose of asking to be referred to the clinic; it is probably not surprising that they did not return to see the "referring" physician. No patient in this study who had such a single contact with a physician did return to see him by the time of the home interview.

It is particularly interesting to note that, except for the group of 12 mentioned above, the patients who were referred primarily on their own initiation (Group C reasons) returned to see their referring physician in as high a proportion as did patients whose referral was primarily physician-initiated (Group A and B reasons). Thus, a patient's request to be referred to a medical center does not necessarily mean the end of his relationship with his referring physi-

cian; other explanations for the poor rate of return to see the referring physician must also be sought. Fourteen patients specifically stated that, although they had not been back yet to see the referring physician, they still considered him their family physician and would return to see him when, in their opinion, the need arose.

It seems very likely that in the best interests of their health most of these 46 patients who did not return should have returned to the continuing care of a family physician; however, in only 20 did the rather complete summary letter from the physician in the clinic indicate that this was his recommendation. Thus, the staff of the clinic appears to bear part of the responsibility for the lack of return of patients to referring physicians.

Comments

In the consultative relationship between physicians certain ingredients are generally regarded as necessary if the consultation is to achieve its goal of aiding the care of the patient to the greatest possible degree. Among these ingredients are: (1) The referring physician's awareness that he needs help; (2) the consultant physician's recognition of the problem with which help is needed and his competence to supply it; (3) adequate communication between the physicians about the nature of the problem and the degree to which each is assuming responsibility for the patient's care; and (4) adequate communication with the patient, so that he understands what is to be expected from the referral, what are the consultant's recommendations, and who is to be responsible for his further care. These principles would seem to apply to the consultative role of a university clinic as they would to an individual consulting physician, in the interests of both the patients and the various physi-

cians in training who should be learning optimal medical practice.

The results of the present study of patterns of referral to a university clinic, a clinic which emphasizes its consultative role, indicate that often neither the clinic nor the referring physician is clearly aware of the nature of the problem which led to the referral. Certainly the personnel of the General Clinic at the North Carolina Memorial Hospital, the clinic under study, has not been aware that approximately half of the patients who have come to the clinic on a physician's referral are actually coming at their own initiation. Similarly, the referring physicians, while somewhat aware of the patients' influence upon referral, tended in the interviews to underestimate its magnitude. In addition, they usually do not indicate in their referring letters that these patients apparently have certain unanswered questions which they are bringing to the consultant at the medical center.

There are doubtless many reasons for the two findings that physicians (1) have relatively infrequently defined the problem for which referral is made, and (2) have sent medical information about the patient less than half the time. Nevertheless, it seems clear that the consultant function of the clinic will be less than optimally carried out when there is inadequate definition of the problem and inadequate bilateral communication between referring physician and consultant clinic. There is no reason to think that this situation is different at other university referral clinics. The improvement of methods of exchanging information between hospital and general practice is recognized as a major contemporary problem in other countries as well.⁴

Since the patient's role in determining referral patterns to this clinic appears to be as large as that of the physicians in the area, the characteristics

of the patients who initiate referral also merit thorough examination.

Finally, the fact that more than 50 per cent of the patients had not returned to see their referring physicians within one to two months after the consultation suggests that the clinic physicians are often not making the disposition of the patient's care clear to the patient or the referring physician. This appears to be a point at which the clinics can take positive steps to encourage the prompt return of patients to their referring physicians and to clarify responsibility for continuing care, and can then examine the results.

Many further studies and operational experiments of the type just suggested are needed if this and other university clinics are to fulfill their proper consultative and teaching functions.

Summary

1. As one phase of a study of the role of a university clinic in the medical care of a largely rural area, where such a clinic serves a primarily consultative function, physicians' reasons for referral to the clinic have been described and some of the factors which affect this referral process have been determined.

2. Physicians' reasons for referral to a medical center can be grouped as follows: (a) Referral initiated by physicians for rather specific reasons which indicate some degree of delineation of the problem prior to referral; (b) referrals initiated by physicians for non-specified reasons which appear to indicate an awareness of the existence of a problem warranting referral but without delineation of it; (c) referrals initiated primarily by the patients, either by direct request for referral by the patient or through recognition by the physician that there has been loss of rapport.

3. Evidence from interviews with a

representative sample of 84 referring physicians and the patients they referred indicates that approximately 50 per cent of referrals nominally initiated by physicians to this clinic are probably referrals made primarily on the patients' initiation. In only about one-fourth of referrals was a rather specific, physician-initiated reason for referral given.

4. Distance from the medical center, or some factor related to it, appears to be an important determinant of reasons for referral. Referrals from greater distances were largely for specific, physician-initiated reasons, whereas referrals from nearby were largely patient-initiated. Physicians, though aware of the patients' influence upon their patterns of referral, seemed to underestimate its magnitude and did not indicate that they were aware of the relationship of distance from the referral center to specificity of the problem.

5. The general views of general practitioners about their patterns of referral coincided more closely with what was actually found with a sample of specific patients than was true for specialists.

6. The mean age of physicians giving specific reasons for referral is lower than that of physicians giving non-specific reasons. Physicians under 40 as a group appear to recognize more readily and precisely the instances in which the patient initiates the referral.

7. Other observations which also have important bearing upon the consultative and teaching role of the university clinic are that for 58 per cent of the referrals in this sample no medical information was sent by the referring physician, and that 54 per cent of the patients in the sample had not returned to a continuing relationship with the referring physician after the clinic work-up was completed.

REFERENCES

1. (a) White, K. L. An Outpatient Department and the Teaching of Preventive Medicine. *Canad. M. A. J.* 80:506-508 (Apr. 1), 1959. (b) White, K. L., and

- Fleming, W. L. Improving Teaching on Ambulant Patients. *J. M. Educ.* 32:30-36 (Jan.), 1957.
2. Andrews, L. P.; Diamond, E.; White, K. L.; Williams, T. F.; Greenberg, B. G.; Hamrick, A. A.; and Hunter, E. A. A Study of Patterns of Patient Referral to a Medical Clinic in a Rural State: Methodology. *A.J.P.H.* 49:634-643 (May), 1959.
 3. Peterson, O. L.; Andrews, L. P.; Spain, R. S.; and Greenberg, B. G. An Analytical Study of North Carolina General Practice 1953-1954. *J. M. Educ.* 31: Part II (Dec.), 1956.
 4. (a) Godber, G. E. Trends in General Practice. *Lancet* 2:224-229 (Aug. 29), 1959. (b) Editorial: Communication in Practice. *Lancet* 2:219-220 (Aug. 29), 1959.

APPENDIX

Categorization of Answers to Physician Questionnaires

(Portions Pertinent to the Present Report)

I. Why does he refer patients to a medical center?

Group A: Physician-initiated referrals for specific reasons:

- (a) Problems outside the voluntarily set limits of the physician's practice; for example, the general practitioner who does no surgery.
- (b) Problems which the physician considers beyond his competency but in his field of medicine. In this group are included such instances as the general practitioner who does obstetrics but who may refer patients with complications to a specialist.
- (c) For more specialized diagnosis and treatment. This represents relatively advanced thinking and narrowing of diagnostic possibilities to a particular specialty or field; for example, the internist may have made the diagnosis of some renal or hematological disease yet he may refer the patient to a specialist for a specific diagnosis and clarification of the problem. This applies also to the mention of specific specialists who may not be available in his community.
- (d) Because of inadequate local facilities. This category applies to physical facilities such as laboratory and x-ray equipment as well as to the lack of

ancillary personnel such as house staff and nursing staff.

- (e) Patients who present instructive teaching problems.

Group B: Physician-initiated referrals for nonspecific reasons:

- (a) For diagnosis and treatment. This category includes both explicit and implicit reasons. It includes reasons such as "confirmation of diagnosis" and "to reassure the physician," as well as more explicit answers. This category is general and makes no reference to a specialist or to a specific clinical problem. For example, "complete work-up" and "complex problems" are coded here. Reference to "specialists" without differentiation or specification is coded here.
- (b) For unified clinical facilities. Answers in this category refer to the facts that the patient may see several physicians for the cost of one clinic visit, that multiple opinions are available at the time of the single visit, and also that the patient is seeing more than one physician, allowing for the expression of more than one opinion. The occasional answer that patients are referred to the medical center rather than to a local physician where the patient may be "lost" to the referring physician is placed in this category.

Group C: Referrals initiated primarily by patients:

- (a) Direct request of patient or family.
- (b) Apparent loss of rapport between physician and patient. This category includes reasons such as "to reassure the patient," "frustrated by the patient's complaints," "difficulty in managing patient," etc. It may be used when the physician senses dissatisfaction by the patient and refers him.
- (c) Medically indigent patients.

II. Why was the key patient referred to NCMH? The categories of answers for this question are the same as those for Question I.

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