The Consultation and Referral Process
A Report from NEON

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BACKGROUND. Consultation and referral are essential components of the practice of primary care. Despite this, little is known about the factors that contribute to the success of a referral. We examined the short-term outcomes of communication between family physicians and consultants during the referral process.

METHODS. The study setting was six family practice centers in northeastern Ohio. All eligible physicians at each center participated in data collection by means of a card study. Data was recorded on any patient who received a referral to a physician or nonphysician provider during the month of July 1994. One year later, referrals were followed up by physician questionnaire.

RESULTS. Three hundred nine of 5172 total patients were referred (5.97 referrals per 100 office visits). At follow-up, the family physicians reported that 63% of patients had visited the consultant, 14% had not, and the physician had no knowledge of the actions taken by the other 23%. The referring physician received feedback from the consultant regarding 55% of the patients referred. Receipt of feedback was strongly related to communication by the family physician to the consultant at the time of referral. Physicians who received feedback were the most satisfied with communication from the consultant and the care their patient had received.

CONCLUSIONS. Primary care physicians can influence the likelihood of receiving feedback from a consultant by initiating communication with the consultant. A referral wherein the physicians involved do not communicate with one another results in physician dissatisfaction. Primary care physicians must practice strategies to improve the referral process.

KEY WORDS. Referral and consultation; family practice; physician practice patterns; interprofessional relations; continuity of patient care. *(J Fam Pract 1998; 46:47-53)*

Family physicians know that consultations and referrals are a necessary component of practice. Consultations may increase the cost of care while they increase the quality of care. Nutting and colleagues[1] outline the need for research in four areas related to consultation and referral: "describing the pattern of consultation and referral, understanding the components of the consultation and referral decision, describing the costs and outcomes of consultation and referral, and developing better strategies for consultation and referral." By definition, referrals may be differentiated from consultations by the transfer of responsibility, but in practice, the boundaries are blurred. In this paper, we discuss referral and consultation interchangeably.

There are few reports of the long-term health outcomes of referrals, although data on interim outcome measures are available. Interim measures include: the proportion of patients who attended the office visit with the specialist; patient satisfaction with the specialist visit; feedback from the specialist to the referring physician; physician satisfaction with that feedback; and the proportion of patients who were hospitalized by the specialist. [1-4]

We prospectively examined the outpatient referrals of physicians in six family practice residency programs. Our goal was to address improved strategies for consultation and referral

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and to focus on communication between the primary care physician and the specialist. We describe interim outcomes of the referral process: patient attendance at the consultant visit; the consultant's feedback to the family physician; and the family physician's satisfaction with that response. Secondary goals are to describe the rate of referrals, the rate of referrals to different specialists, and the distribution of "reason for referral" indicated by family physicians.

METHODS

Data Collection

The data were collected in the six family practice residency programs affiliated with the Northeastern Ohio Universities College of Medicine. These are located in community hospitals in Akron, Barberton, Canton, and Youngstown, Ohio. Physicians in these programs refer to local specialists who are in private practice rather than to university-affiliated specialists.

During July 1994, we conducted a cross-sectional study of all patients who were referred to another health care provider by faculty or second- or third-year residents. Referrals to both physicians and nonphysicians were included. It was not considered a referral when the primary care physician ordered that a procedure (radiographic studies, for example) be done by another provider. Data were collected only on patients who visited a family practice center, and excluded telephone calls and home visits. There were no age or gender restrictions.

All eligible physicians at each center participated in data collection by means of a card study. In this method, each physician carried a data card at all times. A new data card was started for each half-day that the physician saw patients. Data were recorded on every patient who was referred to another provider.

Three categories of data were collected. *Physician data:* sex; attending or resident physician; for residents, postgraduate year; number of patients seen in that half-day of patient care. *Data on referred patients:* sex; age; race; established or new patient at the family practice center; for established patients, old or new problem. *Referral data:* referral to which specialtist; reason for referral. Table 1 shows the choices of reason for referral.

We documented the proportion of referrals that would be missed by relying strictly on physician reports. The appointment books at each family practice center were checked to confirm that a card had been completed for each half-day of patient care. The actual procedure varied, but in each center, we checked the most complete source for recording referrals (dictation, billing sheets, or lists kept by nurses). The physician was asked to provide information for any referral that was missing from the card.

In August 1995, referrals were followed up using a physician questionnaire. Follow-up was from physician memory and optionally from chart notes. Patients and consultants were not contacted. The questionnaire named the patient, the date and reason for referral, and the type of provider. Physicians were asked if the patient had seen the consultant; if the family physician had talked to or sent a letter to the consultant; if the consultant had given feedback and, if so, the

TABLE 1

The Choices of Reasons for Referrals Listed on the Back of the Data Collection Card Used by Physicians to Record Data on Referred Patients

- To establish the diagnosis.
- For a specified investigation; for example, colonoscopy, cardiac catheterization.
- For treatment or surgery; for example, cholecystectomy.
- For advice on management; for example, is gold or plaquenil better for this patient's rheumatoid arthritis.
- For a specialist to take over management; for example, dialysis for renal failure.
- For a second opinion, to reassure you that you have done all that is necessary.
- For a second opinion to reassure the patient or the family that you have done all that is necessary (patient request).
- Medical-legal concerns by the physician, the patient, or both.
- An opportunity for physician education.
- Organizational requirement for a second opinion by an insurance company, residency program, or hospital policy; for example, VBAC.
- Other.

Adapted from Coulter, Noone, and Goldacre. [12]

form of the feedback (conversation, telephone, letter, office note); if the feedback was helpful in patient management; and if the family physician was satisfied with the patient's care and with the feedback from the consultant. If the referring physician was a resident who had graduated, the questionnaire was given to the physician who had since assumed care of the patient.

Statistical Analysis

We calculated the overall referral rate and rates according to patient and physician characteristics. The denominator for the rates was the number of office visits during the study period. The card study method limits the amount of patient data that can be collected. No reason for visit or diagnostic data were collected. Demographic data were collected only for referred patients. Therefore, where we needed denominators for referral rates grouped by patient demographic characteristics, we estimated the characteristics of the patient population. We used the characteristics of the family practice center populations from our 1993 application of the National Ambulatory Medical Care Survey.[5] Although we calculated rates for patient subgroups, we were unable to do statistical tests where rates use estimated denominators.

Statistical tests are reported for comparisons among referred patients or referring physicians. We used Mantel-Haenzel chi-square tests to examine differences between proportions. For ordered categories, we used chi-square tests for trend. We used multiple regression to adjust for clustering of patients within individual physicians.

RESULTS

In one month, 95 physicians saw 5172 patients in office visits and referred 309 patients to other providers. The overall referral/consultation rate was 5.97 per 100 office visits. In these data, 1.06 referrals per 100 office visits (18%) were to nonphysician health professionals including mental health professionals. Twenty-two percent of referrals were not recorded initially, but were identified by data checking methods outlined above.

TABLE 2

Referral and Consultation Rates According to Patient Characteristics

Characteristic	No. of Referrals/Consults*	No. of Office Visits†	Rate × 100 Office Visits
Sex			
Male	117	1800	6.5
Female	187	3372	5.6
Age, years			
<5	13	636	2.0
5 to 14	11	393	2.8
15 to 24	31	657	4.7
25 to 44	94	1402	6.7
45 to 64	75	946	7.9
65 to 74	31	564	5.5
≥75	31	569	5.5
Patient status			
Established patient	289	4691	6.2
New patient	20	481	4.2

*Totals vary due to missing data.
†Number of visits estimated from Gilchrist VJ, Miller RS, Gillanders WR, et al.[5]

Table 2 shows estimated referral rates by patient characteristics. The referral rate increased with patient age through age 64 , but there was little difference in referrals by patient sex. New patients were slightly less likely to be referred to another provider.

The most common reasons for referral were "for treatment or surgery" (27%); "to establish a diagnosis" (22%); "for a specialist to take over management" (15%); "for a specified investigation"(13%); and "for advice on management" (13%). Other reasons were cited less than 5% of the time and medical-legal concerns were not cited. Female physicians (6%) were more likely than male physicians (1%) to indicate that the patient had requested the referral (Fisher's exact test P=.05). Reason for referral did not otherwise differ by physician sex; between residents and faculty; or by patient age or sex.

Of the 289 established patients who were referred, 111 patients (40.1 %) presented with new

TABLE 3

Proportion and Rate of Referral by Specialty

	No. (%)	Rate × 100 Office Visits
Surgery	48 (15.7)	0.93
Gastroenterology	27 (8.8)	0.52
Ophthalmology	23 (7.5)	0.44
Physical Therapy	23 (7.5)	0.44
OB/GYN	21 (6.9)	0.41
Orthopaedics	22 (7.2)	0.43
Cardiology	17 (5.6)	0.33
Psychology/ Behavioral Science	14 (4.6)	0.27
Ear/Nose/Throat	12 (3.9)	0.23
Dermatology	10 (3.3)	0.19
Psychiatry	7 (2.3)	0.14
Pediatrics	5 (1.6)	0.10
Other physician	36 (11.8)	0.70
Other nonphysician	41 (13.4)	0.79
Total	306*	5.97

*Missing data on 3 patients

problems. An old problem was defined as a problem previously managed by the referring physician, not by another physician at the family practice center. New problems were 9 times as likely to be referred at patient request, 5.4% of new problems compared with 0.6% of old problems. Old problems were 3 times as likely to be referred for advice on management, 18.7% of old problems compared with 6.3% of new problems (χ^2=23.2, *df*=7, *P*=.002).

Table 3 shows the distribution of specialists to which patients were referred. Patients were most often referred to surgeons (16%) and gastroenterologists (9%). Referrals to nonphysician mental health professionals were twice as frequent as to psychiatrists. The group "other nonphysician" received 13% of referrals. This category includes nutritionists, podiatrists, patient educators, and visiting nurse services. Male physicians more often referred patients to orthopedic surgeons (10%) than to physical therapists (4%), while female physicians more often referred to physical therapists (13%) than to orthopedic surgeons (3%) (χ^2=12.2, *df*=1, *P*=.0004).

At the 1-year follow-up, we received responses from the primary care physician regarding 297 patients (96%). They reported that 186 patients (63%) had seen the consultant; 43 (14%) had not; and the physician did not know the outcome for 68 patients (23%). The outcomes were similar for patients of faculty and second-year residents. If the referring physician was a resident who had graduated, the physician who assumed the patient's care was less likely to know if the patient had seen the consultant (34%, χ^2 =13.9, *df*=4, *P*=.007). However, 66% of the time the new physician did know the outcome of the referral.

The proportion of patients who were known to have seen the consultant varied by the reason the family physician indicated for the referral (Table 4). The patient was more likely to have seen the consultant if the referral was for advice on management. If the referral was for treatment or surgery, the probability that either the patient had not seen the consultant or the physician did not know what had happened increased. Of 83 patients who were sent for treatment or surgery, the physician knew that only 52% had seen the specialist. The probability of seeing the consultant did not vary by patient age, sex, or type of insurance, except that the outcome was more often unknown to the physician for patients aged 15 to 24.

The top of Table 5 describes the communication between the primary care physician and the consultant. The probability of the primary care physician contacting the specialist or receiving feedback from the specialist did not vary by patient age or sex. The probability of communication from the primary care physician to the specialist was increased if the patient was sent for advice on management, although the probability of feedback was not changed.

Family physicians were nearly twice as likely to receive feedback regarding 98 (72%) patients for whom they had sent a letter compared with those they had not sent a letter (72% vs 41%; *P* <.001). There were no differences between faculty and residents in the overall receipt of feedback or in the impact of communicating with the consultant

in advance.

The outcome of the referral from the perspective of the physician is shown at the bottom of Table 5. The family physicians' satisfaction with the referral was measured on a 5-point Likert-type scale, where 1 = very satisfied and 5 = dissatisfied. Family physicians were more satisfied both with patient care and with communication when feedback was received. They were less satisfied with patient care and with communication when feedback was not received. Physicians were also more satisfied with both patient care and communication when the feedback was written rather than verbal and most satisfied when they received both written and verbal feedback.

TABLE 4

Results from the 1-Year Follow-up Questionnaire: Patient's Attendance at Referral Stratified by the Initial Reason for Referral (row %)

Reason for Referral	Did Patient See Consultant? Yes	No	PCP Does Not Know
Advice on management*	28 (75.7)	0	9 (24.3)
Specified investigation	28 (73.7)	6 (15.8)	4 (10.5)
Establish diagnosis	44 (68.8)	8 (12.5)	12 (18.8)
Management by specialist	28 (62.2)	9 (20.0)	8 (17.8)
Other†	12 (52.2)	4 (17.4)	7 (30.4)
Treatment or surgery‡	43 (51.8)	15 (18.1)	25 (30.1)
Total§	183 (63.1)	42 (14.5)	65 (22.4)

PCP denotes primary care physician.
*$\chi^2 = 7.3$, $df = 2$, $P = .03$.
†Education, organizational requirement, patient request, second opinion.
‡$\chi^2 = 6.5$, $df = 2$, $P = .04$.
§Missing data on 19 patients.

TABLE 5

Communication Between Primary Care Physician and the Consultant (row %)

	Yes	No	Unknown
Communication Between the PCP and the Consultant			
PCP sent letter or talked to consultant	136 (45.8)	96 (32.3)	65 (21.9)
PCP received feedback from consultant	163 (54.9)	101 (34.0)	33 (11.1)
Outcome of Referral From the Perspective of PCP			
Mean satisfaction with patient care*	1.5	2.1†	
Mean satisfaction with communication*	1.5	3.4‡	

PCP denotes primary care physician.
*Likert scale: 1 = very satisfied; 5 = dissatisfied.
†$t = 2.91$, $df = 169$, $P < .01$.
‡$t = 8.07$, $df = 171$, $P < .001$.

We were concerned that satisfaction might be a personal characteristic of individual physicians rather than a reaction to feedback from the specialist. We examined the relationship between feedback and satisfaction after adjusting for individual physician characteristics on a subset of physicians. There were 13 physicians who had referred seven or more patients. Each of these physicians was represented by a dummy variable in a multiple regression model which also included feedback from the specialist. In this model, satisfaction with patient care was no longer significantly related to feedback from the specialist. However, satisfaction with communication continued to be strongly related to feedback from the specialist.

DISCUSSION

In this study, the overall referral and consultation rate was 5.97 per 100 office visits. Eighteen percent of these referrals were to nonphysician

health care providers. The rate of consultation and referral is sensitive to a number of factors including incentives or disincentives imposed by the dominant system of payment. For this reason, we compared the referral rate from this study only with other studies from the United States. Our results fall in the middle of rates reported for the United States, which range from 1.4 to 11.9 referrals per 100 office visits.[3,4,6,7]

The distribution of referral specialties depends on the demographic characteristics of the patient population, the availability of specialists in the community, and the expertise of the referring physicians.[8-11] Our data show that the common referral specialities were consistent with previous studies: surgery, gastroenterology, ophthalmology, and physical therapy.[12-14] Our data were also consistent with the "reasons for referral" from the study by Coulter and coworkers[12] of general practitioners in Great Britain.

The physicians knew that 14% of referred patients had not seen the consultant. Included in that 14% were 20% of the patients who were sent for management by a specialist; 16% of those sent for a specified investigation; and 18% of those sent for treatment or surgery. Other estimates of the proportion of patients who fail to see the consultant range from 3% to 18%.[3,4,15-18] As we did not contact either the patients or the consultants, we lack a true gold standard for the patient's attendance at the specialist visit. The rate of nonattendance in this sample could be as low as 14% or as high as 37% depending on the 23% of patients whose attendance was unknown.

Other US studies report that the referring physician received verbal or written feedback from the consultant 26% to 80% of the time.[3,4,17] There is a higher probability of receiving feedback from a physician in private practice than a physician in academic practice and nonphysician providers may be less likely to respond than physicians.[3,4,7] In our data, however, faculty and resident physicians were equally likely to receive feedback.

There is evidence that a prior communication from the referring physician increases the probability of feedback from the consultant.[3,19] In our data, if the referring physician had telephoned or sent a letter to the consultant, the probability of a response was increased (RR=1.8, $P < .001$). There may, however, be an upper limit to the effectiveness of this strategy. A program in which all referred patients were sent with prior communication did not receive feedback about every patient.[7] A report from the consultant is more likely if a follow-up letter is specifically requested, or if the patient's diagnosis or medication has been changed by the consultant.[15] In our data, the primary care physician's satisfaction with patient care and satisfaction with communication from the consultant were strongly related to known feedback, especially written feedback from the consultant.

The card study method of data collection balances feasibility against the detail of patient data. Other investigators have recently shown that patient demographic and clinical characteristics influence the rate of referrals.[20,21] We did not collect the clinical data required to adjust the referral rates for variation among patients. However, patient age and sex were not related to the probability of communication between physicians. It is unlikely that adjusting for patient characteristics would alter our conclusions about the relationship between communication and physician satisfaction with the referral.

Our data support several themes from the literature. Approximately 15% of patients fail to complete the visit to the specialist. Information about the specialist visit will be known to the referring physician about 60% of the time. Patients are most often referred to general surgeons. The goal of the referring physician is most often either treatment or surgery, or diagnostic assistance. Patients are referred about 20% of the time to nonphysician health care providers.

We recognize that factors such as cost or inconvenience may have contributed to a patient's failure to visit the specialist, and for some patients the complaint may have resolved. We also theorize that some referring physicians may have failed to negotiate the referral with the patient adequately. We suggest that referring physicians carefully explore with patients the reasons for and the expectations from the consultation in order to improve patient attendance.

In our data, the referring physician was aware of feedback from the consultant only 55% of the time. As often as 37% of the time, the patient may not have seen the consultant. Where the primary care physician lacks follow-up information about the consultation, the patient may have had investiga-

tions, had conditions diagnosed, or been receiving treatments that the referring physician is unaware of. If the patient chose not to attend, the physician was unaware of the reasons. Even if symptoms have resolved, we consider it the responsibility of the primary care physician to follow up on a consultation he or she has initiated.

There is good evidence that the behavior of the referring physician can influence the behavior of the consultant. Communication from the referring physician will increase the probability of feedback from the specialist and this will result in a short-term outcome of increased physician satisfaction with the referral.

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