Factors Related to an Effective Referral and Consultation Process

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A study of 141 consecutive referrals from family physicians in four clinic sites was undertaken to obtain descriptive characteristics of the referral-consultation process and to identify factors associated with effective outcomes. Consultation reports were returned to referring physicians in 88 percent, 75 percent, and 43 percent of referrals from consultants in community practice, university faculty practice, and university outpatient clinics, respectively. The quality of the consultation reports, as determined by the referring physician's opinion, increased directly with the amount of referral information originally sent to the consultant. The referral-consultation process appears to be functioning well in this site. The data suggest that this process might function even better if referring physicians would personally contact and send letters to consultants.

With the emergence and maturation of family medicine has come renewed interest in the communication process between family physicians and their specialist colleagues. Embodied in the ideals of family practice are the appreciation by the family physician of his or her limitations, the responsibility to refer patients when necessary, the need to interpret consultation reports to patients, and a commitment to promoting continuity of care. These responsibilities require an effective referral and consultation process between the family physician and consultant.

There is some evidence from the literature that all is not well with the referral-consultation process. Early studies reported that patients referred by general practitioners to university medical centers were accompanied by significant medical information in only 42 to 53 percent of referrals.[1,2] More recent research in the family practice literature suggests that specialists often ignore the referring physician by not sending consultation reports. A recent study documented that consultation reports were received on only 62 percent of referrals.[3] Three other studies found rates for receiving reports of 76 percent, 82 percent, and 92 percent.[4-6]

Little effort has been made to identify factors promoting an effective referral-consultation process. The purposes of this study were to obtain descriptive characteristics of this process and to identify factors related to effective outcomes. The primary hypothesis was that well-conducted referrals would promote a high return rate and quality in consultation reports.

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Methods

In this study a referral was defined as that process whereby a primary care physician sends a patient to a physician specialist. A consultation is the diagnostic or therapeutic evaluation by the consulting physician.

An attempt was made to record all referrals from four clinic sites during a 10-week study period from February 1, 1981, through April 14, 1981.

A private two-physician family practice group in Durham, North Carolina, and three practice sites of the Department of Community and Family Medicine of Duke University participated in the study. Although under university administration, these Duke sites were primarily for patient care and had little teaching load. Patients represented a cross section of the Durham community and were seen on a fee-for-service basis.

All of the referring physicians in the study were family physicians. The two physicians in private practice and the eleven physicians at the University sites were all on the attending staff of the local community hospital. All participating physicians enjoyed usual referral relationships with both community and university-based consultants.

Patients were referred to specialists in the Durham community, to Duke University faculty specialists, and to resident physicians in the Duke outpatient specialty clinics and the Duke emergency room.

Although the referring physicians were aware that the study was about the referral-consultation process, they did not know how their referral material was being evaluated. The consultants were unaware of the study.

In addition to relevant demographic data, the following information, which was thought related to a satisfactory consultation process, was obtained: (1) consultant specialty, (2) consultant practice location (community, university faculty, university outpatient clinics), (3) relationship between referring and consulting physicians (unknown to each other, somewhat familiar, first-name basis), (4) whether the receipt of a report was felt necessary for future care of the patient, (5) whether personal verbal contact was made with the consultant, and (6) whether a letter was sent to the consultant. The referring physicians provided this information by completing a brief questionnaire which, along with copies of all written material sent to consultants, was collected by the investigators.

The investigators then independently evaluated the content of the referral material by documenting presence or absence of nine components they presumed would be present in an ideal referral letter: (1) history of the problem, (2) past medical history, (3) physical findings, (4) previous diagnostic tests, (5) previous therapy, (6) provisional diagnosis, (7) reason for referral, (8) statement about expectation for return of patient, and (9) request for copy of consultation report.

A score for each individual referral was created by giving a point for each component present and summing for a total score. A referral score could range from 0 to 9.

When consultation reports were received by the referring physicians, they evaluated the reports by rating them on a scale of 1 to 7 (1, poor; 7, excellent) for each of three characteristics: (1) usefulness in understanding and treating the patient's problem, (2) contribution to the referring physician's continuing medical education, and (3) consultant's behavior in meeting the continuity expectations of the referring physician. This evaluation, along with a copy of the consultation report, was collected by the investigators.

In a manner similar to that for the referral material, the investigators then documented the presence or absence of eight components they presumed would be present in ideal consultation reports: (1) history of the problem, (2) physical findings, (3) diagnostic tests undertaken, (4) therapy initiated, (5) diagnosis, (6) reason for referral addressed, (7) statement about follow-up of the problem, and (8) statement about return of patient to referring physician.

A score for each consultation report was also created by giving a point for each component present and summing. The consultation score could range from 0 to 8.

Several analytic techniques were employed to identify factors associated with satisfactorily completed consultations. First, Spearman rank correlations were calculated for the referral letter score and the consultation report score as well as for the referral letter score and the referring physician's rating of the consultation report. Second, chi-square statistics were obtained comparing whether a consultation report was received with each of the factors mentioned earlier as possibly

Table 1. Consultant Specialty Frequencies and Referral Rates for Published Studies (%)

Specialty	Present Study	Metcalfe[5]	Ruane[4]	Geyman[7]	Moscovice[8]
Orthopedics	18	10	14	16	21
General surgery	13	25	22	21	19
Urology	13	8	5	8	5
Neurology	7	8	3	6	7
Cardiology	7	1	4	3	4
Obstetrics-gynecology	6	10	5	12	5
Otolaryngology	5	10	13	2	11
Dermatology	5	7	7	0	4
Ophthamology	4	6	9	11	4
Other	23	17	20	21	19
Total referrals	141	105	102	126	161
Total visits	6,579	4,606	7,220	6,409	6,586
Referral rate (per 100 visits)	2.1	2.2	1.5	1.6*	2.4

*Referral rate calculated on 103 referrals

associated with satisfactory completion of consultations. An additional binomial variable was created from the referral score, a low score representing an actual 0 to 4 score and a high score, 5 to 9. Third, logistic regression analyses were undertaken with report received as the dependent variable and all of the variables utilized in the chi-squared analyses as the independent variables. Referral score was included as both a continuous and binomial variable in separate analyses.

Results

A total of 141 referrals were made during the 10-week study period for a referral rate of 2.1 referrals per 100 clinic visits (Table 1). When the frequency of referrals to various specialties was analyzed, orthopedic surgeons were found to have received almost 18 percent of referrals. This is consistent with four studies previously published (Table 1).

Every referral was followed to verify whether the patient saw the consultant. Of the 141 referrals, 127 (90 percent) did keep the appointment with the consultant.

Personal verbal or written contact with the consultant was made by the referring physician in 96 percent (135/141) of referrals. Verbal contact was made in 26 percent, letters were sent in 48 percent, copies of progress notes were sent in 32 percent, and a university consultation form was employed in 28 percent (not mutually exclusive categories).

The frequency of each of the components considered important by the investigators for ideal referral letters is depicted in Table 2. This information was available for investigator review only on patients for whom written information was sent to the consultants. Physicians were fairly consistent about sending information on the present medical history (90 percent) and reason for referral (86 percent). Information on the physical examination and provisional diagnosis was present 66 percent of the time but information on the other five components was present in 50 percent or less of the referrals. Included infrequently were explicit statements about the expectation for return

Table 2. Frequency of Referral Components in 95 Referrals

	Percent
History	90
Physical	66
Tests	45
Therapy	51
Past medical history	29
Provisional diagnosis	66
Reason for referral	86
Expected return*	23
Request for information	38

*Statement regarding expected return of patient to referring physician

Table 3. Frequency of Consultation Components in 83 Consultation Reports

	Percent
History	65
Physical	80
Diagnostic tests	66
Therapy	78
Diagnosis	94
Reason for referral addressed	95
Follow-up statement	88
Return patient statement	19

of the patient (23 percent) and statements specifically requesting a report (38 percent).

In only 19 percent (18/94) of referrals were seven or more referral components present. A referral score of between 4 and 6 was present in 60 percent of referrals. The mean number of components was 4.9 (SD = 1.9).

The ideal consultation report components appeared in the majority of consultation reports (Table 3). A specific statement about the return of the patient to the referring physician was present in only 19 percent (16/83) of the consultation reports. The mean number of components was 5.8 (SD = 1.3), higher than the 4.9 for referrals. This is especially noteworthy, since there were eight possible components in consultation reports and nine in referrals.

The referring physicians gave high ratings to the consultation information, with average or above scores for 76 percent, 84 percent, and 92 percent of the consultations for the categories of educational value, medical helpfulness, and continuity, respectively (Table 4). Mean scores for the same categories were 4.7, 5.4, and 6.0, respectively.

Statistically significant Spearman rank correlations were found between the referral scores and the referring physician's ratings for educational value ($r = 0.40$, $P < 0.0005$) and medical helpfulness ($r = 0.26$, $P < 0.03$), but not for rating of continuity. Thus, the quality of the consultation report, as determined by the referring physician's opinion, increased directly with the amount of information originally sent to the consultant. The number of components in the referral letters was not found to be correlated to the number in the consultation reports.

Of the 127 completed referrals, consultation reports (written or verbal) were received on 100 (79 percent).

When chi-square analyses were conducted to identify factors related to the receiving of reports, two stood out as strong predictors. One was the specialty of orthopedic surgery. The second was the practice location of the consultant (Table 5). The data were then controlled for orthopedic surgery and consultant practice location through stratification. Mantel-Haenszel chi-square statistics were obtained for the other variables previously listed, and no additional statistically significant factors were found.

Logistic regression analyses were undertaken with report received as the dependent variable. Only two variables, orthopedics and consultant practice location, contributed to predicting whether a report was received ($P < 0.05$ for both).

If the orthopedic referrals are excluded from the analysis, consultation reports were received in 93 percent (56/60) of referrals to community consultants, in 78 percent (29/37) to university faculty, and in 56 percent (5/9) to outpatient clinics.

Table 4. Frequency of Scores in Educational Value, Medical Helpfulness, and Continuity in 100 Consultation Reports (%)

Score	Education	Medical	Continuity
1	11	5	2
2	8	5	1
3	5	6	5
4	19	10	8
5	13	13	9
6	25	25	24
7	19	35	49
Mean	4.7	5.4	6.0

Table 5. Received Consultation Reports by Orthopedic Surgery and by Practice Location of Consultant

	Report Received	
	Yes (%)	No (%)
Specialty*		
Orthopedics	10 (47.6)	11 (52.4)
All others	90 (84.9)	16 (15.1)
Total	100 (78.7)	27 (21.3)
Practice Location**		
Community	61 (88.4)	8 (11.6)
University faculty	33 (75.0)	11 (25.0)
Outpatient clinics	6 (42.9)	8 (57.1)
Total	100 (78.7)	27 (21.3)

*$\chi^2 = 14.56$, $P < 0.001$
**$\chi^2 = 14.99$, $P < 0.001$

Although little variability remains, certain trends were evident. When personal verbal contact was made with nonorthopedic consultants in community practice, a report was received by the referring physician every time (21/21). In each instance in which no report was received (4), no direct verbal contact had been made. In the eight instances in which no report was received from the nonorthopedic university faculty, personal letters had been sent in three of the eight referrals. When referral letters accompanied patients sent to orthopedic surgeons in community practice, consultation reports were received for four out of five referrals. Only one out of four sent a report when

such letters were lacking. None of these factors were found to be statistically significant, perhaps due to the small numbers and the overall high rate of report return by the consultants.

Discussion

This study documents the referral and consultation process as it usually functions in this site. The referring physicians provided information to consultants in 96 percent of referrals. The referral information sent was not as comprehensive as that returned by the consultants but usually contained a history of the problem and the reason for referral. When rated by independent reviewers, consultation reports were comprehensive by objective standards. The reports were also rated highly by referring physicians. It was found the data could be conveniently divided to describe three categories of consultant: (1) community practice, (2) university faculty, (3) residents and fellows in training at the university outpatient specialty clinics. Consultants in community practice sent reports to the referring physican 88 percent of the time. If orthopedists are excluded, the report rate was 93 percent. University faculty performed less well with report rates of 75 percent and 78 percent for the two categories, respectively. This reduced rate for university faculty may be explained by their being less dependent for survival on referrals from primary care physicians than are community consultants. Residents and fellowship physicians in specialty training had the lowest return rates (43 percent, 56 percent), perhaps because of a lack of appreciation for physician-patient relationships outside their own hospital, little personal interest in nurturing referral relationships, and lack of secretaries and convenient means for providing consultation letters.

The differences among the three consultant types here presented must be considered when assessing the effectiveness of a referral-consultation process. Published studies report consultation feedback rates of 78 to 92 percent by specialists in community practice.[3,5,6] This information, along with data presented in this study, suggests that the referral-consultation process can work quite well in community practice. Care must be taken in interpreting data from consultation studies conducted in residency training clinics or National Health Service Corps sites, since their results may not apply to community practice.

Orthopedic surgeons were significantly less likely to send reports. Hines and Curry reported that the three specialties with the highest nonresponse rates were plastic surgeons, ophthalmologists, and gynecologists, but no report of statistical significance was provided.[6] It is likely that the consultant's response pattern to a referral from another physician is a personal characteristic of an individual physician rather than a characteristic of the specialty in which he works.

Although not attaining statistical significance, the data suggest that the report rate might be improved with a more personal touch by the referring physician: a call to the consultant or a letter which accompanies the patient. The findings in this study demonstrate that most consultants provide reports regardless of amount of information sent. However, referring physicians were more satisfied with the helpfulness and educational value of the consultation reports when they sent more referral information to the consultant. Primary care physicians should consider furnishing the consultant with verbal or written data about the patient prior to referral and combine this with explicit statements about expected return of the patient and interest in receiving a report if they wish to further improve what already appears to be an effective referral-consultation process.

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