

Analysis of Outpatient Referral Failures

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Background. The purpose of this study was to measure the rate at which outpatient referrals failed to be completed, and to analyze predisposing factors for referral failure in the family practice of a medical center.

Methods. Structured questionnaires were completed by referring physicians whenever a referral was initiated during a 4-month period. On the 60th day after referral, an investigator contacted the referred patients by telephone and also reviewed their charts.

Results. During the 4-month period, 604 referrals (2.28%) were made from 26,476 encounters at the study clinic. Sixty-four patients (10.6%) failed to complete the referral processes within a 60-day period. The most frequent reasons for referral failure were adminis-

trative factors, ie, too long a wait (59.4%), and the patient's belief that the referral was not necessary (23.4%). The physician's or patient's opinion of referral necessity, the level of experience of the referring physician, and the method of contact with the consultant all had significant influence on the referral failure rate.

Conclusions. Improving administrative efficiency, enhancing communication between physicians and between physicians and patients, assessing the willingness of patients to follow through on a referral, and the method used to initiate the referral by the physician may reduce the referral failure rate.

Key words. Referral and consultation; family practice; patient dropouts. (*J Fam Pract* 1996; 42:498-502)

The referral system was originally developed in the United Kingdom. By 1948, when the National Health Service nationalized the hospitals and institutionalized the distinction between specialists and general physicians, the referral system was well developed.^{1,2} Consultation was by definition the practice of one physician asking another for an opinion or assistance, whereas referral was the transfer of responsibility for the care of a specific problem to another physician.^{3,4} The physician initiating either process was spoken of as the "referring physician," and the physician who was consulted or to whom the patient was referred was called the "consultant."^{3,4} Geyman et al⁵ found that 97% of such processes were referrals and only 3% were consultations. Fry⁶ noted that most patients were referred for a technical procedure to be carried out. Although there is an important distinction based on the

transfer of responsibility for the patient, these terms have been used interchangeably by many authors.^{3-5,7} Because a successful referral, consultation, or both are built on a good relationship between the referring physician, the patient, and the consultant, they are combined and jointly termed "referral" in this study as well as in many related reports.^{3,5} "Referral failure" has been operationally defined as a referral for which the referral process is not completed within 60 days of the initial referral.⁸

In Taiwan, by June 1993, 13 different kinds of health insurance schemes covered 11.9 million people, 57.1% of the total population.⁹ To meet the medical needs of the people in Taiwan, the national health insurance program was to be implemented starting in 1995.⁹ To balance the quality and quantity of medical care resources, 17 medical care regions were designed to form the medical care network in Taiwan. A better understanding of the referral system in family practice can help further define comprehensiveness and continuity of care in family practice⁵ as well as describe the medical care network function, step by step.

An appropriate referral not only can provide better

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quality medical care to patients but also can serve as an opportunity for physicians to learn to communicate with one another. When referral fails, limited medical resources are wasted and patients do not receive necessary medical care. In addition, the referring physicians miss a chance for reeducation while the consultants lose a good opportunity to establish a communication route with other physicians. All these losses—to the consultant, to the referring physician, to the patient, and even to the health system—can result from referral failure. For this reason, understanding and preventing referral failure has become a major concern. There are many reports about referral processes,^{5,8,10-19} but few studies have disclosed the postreferral results, especially the referral failure rate and its associated factors.^{8,10,14,15} This study addresses the referral failure rate and its predisposing factors in the family practice of one medical center.

Methods

From January 1 to April 30, 1994, patients who visited the outpatient clinic of the Department of Family Medicine at National Cheng Kung University Hospital (NCKUH), a tertiary care medical center in southern Taiwan, were studied. During the 4-month period, 604 referrals were initiated from 26,476 patient encounters at the family practice clinic.

Referral is defined as the process of a family physician asking another physician for an opinion, transferring the responsibility of care for a specific medical problem to another physician, or both.^{3,15-17} Each referral was confirmed only by completed questionnaires, excluding "sidewalk" consultations⁴ and self-referrals.¹⁰ Referrals for routine laboratory tests, electrocardiography, and simple radiographic procedures were excluded. Special examinations that needed to be performed or interpreted by specialists were considered referrals.^{5,8,13}

Referral rate is determined by the following formula^{12,13,15}:

$$\frac{\text{Total number of referred encounters}}{\text{Total number of encounters by family physicians}}$$

Referral failure rate is determined as follows⁸:

$$\frac{\text{Total number of failed referrals}}{\text{Total number of referred encounters by family physicians}}$$

A 2-week pretest was performed to modify the questionnaires, and discussions were held with all participating family physicians to ensure that they were familiar with the procedures and could make an appropriate rating score on all questionnaires. During the study period,

questionnaires were completed by referring physicians whenever a referral was initiated. The contents of questionnaires covered the patient's and physician's characteristics, referral diagnosis and level of diagnostic certainty,⁷ level of referral urgency,²⁰ referral initiative,^{10,15} referral method,^{15,16} referral department, physician's view of clinical severity,^{18,20} and referral necessity.¹⁰ On the 60th day after referrals were initiated, the charts of referred patients were reviewed to determine whether the referral process had been completed⁸ and to compare the diagnostic similarity between referring physicians and consultants.¹⁵ Meanwhile, by means of telephone interviews conducted by the same investigators, all referred patients were queried concerning their opinion of referral necessity and the reasons for referral failure.

Chi-square test and stepwise multiple logistic regression were used to evaluate the effect of study factors on referral failure rate. The odds ratio (OR) and 95% confidence interval (CI) of odds ratio were calculated. The categorical level data were analyzed using dummy variables; $P < .05$ was represented as statistically significant.

Results

During the study period, 604 referrals were initiated from 26,476 patient visits at family practice, representing 2.3% of all visits. Of these 604 referred patients, 64 (10.6%) failed to complete the referral processes within 60 days of the postreferral period.

The clinical characteristics and contents of the questionnaires of the 604 referrals are shown in Table 1. Of the 604 referrals, 292 (48.3%) were male and 312 (51.7%) were female. Mean age was 49.6 years (standard deviation [SD], 15.9; range, 13 to 82). Most (90.2%) of the referrals were made by means of a referral note on the chart or an appointment card or examination order sheet given to the patient; 4.5% by means of direct contact with the consultant by the referring physician; and 5.3% by means of verbal instruction to the patient by the referring physician without contacting the consultant.

Among the referral departments, internal medicine was the specialty most frequently consulted (134 referrals). The other specialties were general surgery, 20 referrals; obstetrics/gynecology, 18 referrals; ear, nose, and throat, 16 referrals; neurology, 16 referrals; medical emergency, 15 referrals; ophthalmology, 11 referrals; urology, 11 referrals; and another hospital, 9 referrals. More than one half (54%) of the referrals were for special examinations. Abdominal sonography, panendoscopy, and sigmoidoscopy were the three most frequently requested examinations (166, 50, and 17 referrals, respectively).

Table 1. Clinical Characteristics of 604 Referrals

| Item | No. (%) |
|--|------------|
| Age (y) | |
| ≥65 | 119 (19.7) |
| 46-64 | 259 (42.9) |
| ≤45 | 226 (37.4) |
| Sex | |
| Male | 292 (48.3) |
| Female | 312 (51.7) |
| Insurance status | |
| Self-provided | 66 (10.9) |
| Insured | 538 (89.1) |
| Diagnostic certainty | |
| Only symptom or sign | 69 (11.4) |
| Tentative diagnosis | 185 (30.6) |
| Definite diagnosis | 350 (57.9) |
| Patient's rating of referral necessity | |
| Low | 66 (10.9) |
| High | 538 (89.1) |
| Referral initiative and motivation | |
| Physician | 563 (93.2) |
| Diagnosis | 222 (36.8) |
| Treatment | 46 (7.6) |
| Diagnosis and treatment | 137 (22.7) |
| Diagnosis confirmation | 52 (8.6) |
| Screening and follow-up | 106 (17.5) |
| Patient | 41 (6.8) |
| Clinical severity | |
| Not ill | 273 (45.2) |
| Moderately ill | 269 (44.5) |
| Severely ill | 62 (10.3) |
| Physician's experiences | |
| Attending | 245 (40.6) |
| Resident | 359 (59.4) |
| Physician's rating of referral necessity | |
| Low | 73 (12.1) |
| High | 531 (87.9) |
| Level of referral urgency | |
| Urgent | 98 (16.2) |
| Nonurgent | 506 (83.8) |
| Referral method | |
| Verbal | 32 (5.3) |
| Referral note or appointment card | 545 (90.2) |
| Contact with consultant | 27 (4.5) |

As shown in Table 2, after chi-square analysis, attending physicians had a lower referral failure rate than residents did (OR = 0.50; 95% CI, 0.28 to 0.88). The higher the physician rated the referral necessity, the lower the referral failure rate (OR = 0.49; 95% CI, 0.26 to 0.94). The higher the patient rated the referral necessity, the lower the referral failure rate (OR = 0.10; 95% CI, 0.06 to 0.16). Interestingly, patient-initiated referrals led

to a higher referral failure rate than did physician-initiated ones (OR = 2.59, 95% CI, 1.18 to 5.73).

The referral method of direct contact with the consultant led to a lower referral failure rate than did the method of verbal referral without informing the consultant (OR = 0.05; 95% CI, 0.00 to 0.96). The referral method of the written referral sheet or appointment card or both, resulted in a lower referral failure rate than did the method of verbal referral without informing the consultant (OR = 0.33; 95% CI, 0.15 to 0.76). Patient characteristics, referral urgency, severity of referral disease, referral department, and referring physician's diagnostic certainty had no significant influence on the referral failure rate. Table 3 shows that, in stepwise multiple logistic regression analysis, seniority of the referring physician, patient's certainty of referral necessity, referral initiative, and referral method of direct contact with the consultant remained statistically significant.

The most common reason for referral failure was administrative factors (59.4%): ie, too lengthy a postreferral waiting time (46.9%), inability to register (7.8%),* and inconvenient procedures (4.7%). Other reasons included the patient's belief that the referral was unnecessary (23.4%) and too great a distance between the hospital and the patient's home (12.5%). Two patients forgot to revisit, and one reported being too busy.

Discussion

In previous studies, the referral failure rate analyzed on the 60th day of the postreferral period by Commins et al⁸ was 8.6%, while Elwyn and Stoot¹⁴ found that out of 170 referrals, 8.8% did not keep their referral appointment. These results are similar to our report of 10.6% failures. It is plausible that if the study period were extended, the referral failure rate¹⁵ might be lower. The sampling size of our study was 26,476 encounters, which should be enough to be representative of any given month or period.

Among the referral departments, most patients were referred to internal medicine for further diagnosis or management. This finding is similar to those of other studies in Taiwan.¹⁵⁻¹⁷ In contrast, general surgery, obstetrics and gynecology, orthopedics, and ear, nose, and throat specialists were most frequently consulted in the West, according to other studies.^{3,10,19,21} Because every patient can choose any hospital or specialty for primary care any time without any extra payment in Taiwan, it seems that

*In Taiwan, subspecialists' clinics in medical centers limit patient registration to 30 to 50 patients per day. Since 50 to 80 patients visit every 3 hours, many patients must return again and again to register, and some quit trying (referral failure).

Table 2. Chi-Square Analysis of the Significant Factors Affecting Referral Failure Rate

| Factors | Referrals | | Odds Ratio (95% CI) | P Value |
|--|----------------------|-------------------|------------------------|---------|
| | Succeeded No. (%) | Failed No. (%) | | |
| Referral initiative | | | | |
| Physician | 508 (90.2) | 55 (9.8) | 2.59 (1.18-5.73) | <.05 |
| Patient | 32 (78.1) | 9 (21.9) | | |
| Referring physician's experience | | | | |
| Resident | 312 (86.9) | 47 (13.1) | 0.50 (0.28-0.88) | <.05 |
| Attending | 228 (93.1) | 17 (6.9) | | |
| Referral method | | | | |
| Verbal | 24 (75.0) | 8 (25.0) | 0.33 (0.15-0.76) | <.01 |
| Chart record and/or appointment card | 489 (89.7) | 56 (10.3) | | |
| Contact with consultant | 27 (100) | 0 (0.0) | | |
| Physician's rating of referral necessity | | | | |
| Low | 60 (82.2) | 13 (17.8) | 0.49 (0.26-0.94) | <.05 |
| High | 480 (90.4) | 51 (9.6) | | |
| Patient's rating of referral necessity | | | | |
| Low | 38 (57.6) | 28 (42.4) | 0.10 (0.06-0.16) | <.001 |
| High | 502 (93.3) | 36 (6.7) | | |

CI denotes confidence interval.

this difference in referral could be explained by patient self-referral whenever obvious surgical or traumatic conditions are involved. In the area of special examination, abdominal sonography was arranged most frequently, a finding similar to that of Hsu et al.¹⁷ Therefore, familiarizing general practitioners with the technique of abdominal sonography might be necessary in the training course for family medicine.

Our study revealed that the referral failure rate for attending physicians was lower than that for residents. Although the effect of the physician's experience on referral failure rate has never been discussed, two studies performed in medical centers suggest that the level of the physician's experience is negatively correlated with refer-

ral rate.^{15,17} In contrast, there was no such correlation in the findings of Wilkin and Smith,¹¹ Roland et al,¹³ and Knottnerus et al.²² For these reasons, further evaluation is needed to determine whether the lower referral failure rate for attending physicians can be partially explained by professional ability. The referral failure rate may be lower among attending physicians who have a better rapport with patients and are more familiar with consultants and with administrative procedures.

Physician-initiated referrals had a lower failure rate in our study than did patient-initiated referrals. Hsu and Liu¹⁸ collated 495 referrals of family practice in the medical center and found that patients from physician-initiated referrals had a greater tendency to return to referring physicians than did patients who self-referred. Therefore, physician-initiated referrals may not only promote the patient's willingness to return to referring physicians but may also lower the referral failure rate.

Although Wu et al¹⁵ and Tang et al¹⁶ found that the main referral method in medical centers was a written record in the patient's chart (93.8% and 98%, respectively), other studies^{8,23} revealed that direct communication with consultants might be a better method in referral processes. In the current study, we also found that no referral failures resulted from the referral method of direct contact with consultants. It is, therefore, prudent to advise referring physicians to contact consultants directly to avoid referral failure.

Most physicians (87.9%) and patients (89.1%) thought that the referral was necessary, which is very

Table 3. Stepwise Multiple Logistic Regression Analysis of Factors Affecting Referral Failure Rate

| | Referral Failure* | | |
|---|-------------------|----------------|---------|
| | β | Standard Error | P Value |
| Referral initiative† | 1.4215 | 0.4360 | .001 |
| Physician's experience‡ | -0.6747 | 0.3216 | .04 |
| Referral method (3 vs 1)§ | -0.9408 | 0.4426 | .03 |
| Patient's rating of referral necessity¶ | -2.3525 | 0.3179 | <.001 |

*Failure = 0, success = 1.

†Physician-initiated = 0, patient-initiated = 1.

‡Attending physician = 1, resident = 0.

§Verbal = 1; chart record and/or appointment card = 2; direct contact with consultant = 3.

¶High = 1, low = 0.

similar to the rate (92.9%) found in Shih and Chen's study.¹⁰ Since our study shows that the referral failure rate correlates negatively with the patient's view of referral necessity, it should be emphasized that not only the physician's personal opinion but also the willingness of patients contributes to the initiation of referral, and that the patient's compliance may be improved if the patient feels more involved in the referral processes.³

Few studies have addressed the reasons for referral failure.¹⁰ In our study, the most common reason was too lengthy a postreferral waiting time (46.88%), which applied to all 10 failed urgent referrals. Since the length of waiting time was usually influenced by administrative factors, such as a limited number of patient visits at a special clinic or a limited number of patients accepted for a specific examination per day, it is essential to improve administrative efficiency as much as possible. Another reason for referral failure in our study was the patient's belief that the referral was unnecessary (23.4%). Poor communication between physicians and patients is still a major problem.

Conclusions

This study revealed that improving administrative efficiency, enhancing rapport and communication between physicians and patients, assessing the willingness of patients, actively initiating referral by physicians, and making routine contact with consultants during the referral process might decrease the referral failure rate.

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