The Physician Referral Process: A Theoretical Perspective

by Stephen M. Shortell and Odin W. Anderson

The behavior of physicians in referring patients to other physicians is considered from the standpoint of social costs and rewards to the interacting physicians, and the implications of referral for quality of care and cost to the patient are discussed. Exchange theory is offered as a framework allowing conceptualization and analysis of the various aspects of the referral interaction. Relevant variables for investigation are identified, and suggestions are made for future research into this aspect of the health care delivery system.

Numerous studies in recent years have outlined the basic parameters of the health services system—number and types of facilities, medical manpower, utilization, and financing, as well as some of the interrelations among these elements. Attention has also been devoted to how individuals enter the health services system, their definition of the sick role, and their help-seeking behavior, as well as the organizational dynamics of some of the major types of providers of care (notably hospitals). But with few exceptions, there is little knowledge of the practice habits of physicians or of how they relate with one another in the coordination of patient care.

The physician's role as chief gatekeeper and decision maker of the health care system is obvious. His discretionary authority as to the types of treatment he renders his patients is at the heart of the delivery of medical care. It is admittedly no longer possible, in terms of either knowledge or cost, for a single physician to deliver a total medical product. The practice of specialized medicine evolves into an organizational process, and central to this process are the referral relations among individual medical practitioners. As Anderson and Kravits [1] note: "... From a systems standpoint it would seem that a systematic knowledge of the physician's . . . referral patterns is fundamental, but such information is almost totally lacking."

While there are almost no data on patterns of referral, several studies have focused on rates of referral among different types of medical practitioners. On a general level, summary data from studies done in the United States and Great Britain suggest that in a population of 1000 adults aged eighteen and over, in an average month 750 will experience an episode of illness; of these, 250 will consult a physician, 9 will be hospitalized, 5 will be referred to another physician, and 1

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Table 1. Percent of Patients Received on Referral from Professional Sources

Type of Practice	*Percent*
All physicians	18
General practice	4
Pediatrics	12
Obstetrics–gynecology	15
Internal medicine (all)	23
Cardiology	30
Gastroenterology	35
Surgery (all)	44
Proctology	44
Urology	68

SOURCE: *National Disease and Therapeutic Index*, p. 340. Ambler, Pa.: Lea Incorporated, 1961.

will be referred to a university medical center [2]. Such data actually underestimate the total volume of referrals, since they focus only on new episodes of illness and do not take into account illnesses that occurred in previous periods for which referrals may be made in the present period.

Table 1 shows the percentage of patients received on referral from professional sources (primarily other physicians) by different types of practitioners. As expected, this percentage is positively associated with increasing degree of specialization.

These data reflect all physicians, both urban and rural. There is some evidence that the rates for urban physicians only are higher: a recent study of physicians at an urban Midwest medical center showed that approximately 46 percent of the patients of the physicians in the sample were received from professional sources [3]. This percentage was highest among psychiatrists (81 percent), urologists (82 percent), neurologists (86 percent), and surgeons (89 percent), again reflecting the increased degree of specialization.

A study of the office practice of internists showed differences in percentage of patients received from other physicians by the internists' form of practice and degree of subspecialization [4]. Internists in solo practice reported receiving 31.6 percent of their new patients on referral from other physicians, versus 39.4 percent for those in partnership or group practice. The figure for internists with a subspecialty was considerably higher than for those without subspecialization (38.7 percent versus 24.3 percent). The same study also showed that internists referred one out of every ten new patients to other specialists for diagnosis and treatment. For a rough comparison, a study of discharged patients in Massachusetts [4*a*, p. 36] showed that out of every seven patients for whom hospitalization was not recommended on their first physician visit, one was referred to another physician (usually a specialist).

A recent study of 64 physicians in three prepaid group practices showed that internists referred more often than general practitioners or pediatricians [5]. In

Table 2. Rates of Referral by Specialty and Type of Community

Specialty	Number of physicians	Percent of patients referred	
		Average	Range
Internists:			
Urban	20	7.0	2.2–14.6
Suburban	15	9.5	2.7–18.2
Rural	1	4.5	. . .
General practitioners:			
Rural	6	4.2	2.4– 5.9
Pediatricians:			
Urban	9	5.4	2.1– 9.5
Suburban	11	2.5	1.0– 5.3
Rural	2	3.2	1.7– 7.7

Adapted from Penchansky and Fox [5, p. 371].

addition, as shown in Table 2, there were considerable differences within the same specialty and wide ranges even within the same type of community.

In addition to the works mentioned, there have been several studies of individual physicians' practices. All these studies have been useful in quantifying the volume of referrals by certain types of physicians and outlining some of the problems involved in the referral process. But they provide little understanding of the interrelations that exist among physicians either in private or in group practice, and they do not offer models from which a basic understanding of the referral process may be derived. The referral process within private practice has probably been underestimated in importance, while referrals within group practice, particularly prepaid group practice, have for the most part been uncritically taken for granted.

Much research on problems related to the delivery of medical care has been carried on without a sound theoretical base, a framework from which a variety of empirical findings may be organized and evaluated and from which additional research may be planned. This article outlines one theoretical approach to the problem of interphysician behavior in the delivery of medical care. From the theory developed here, a number of hypotheses and propositions concerning physician behavior may be tested across a variety of medical care settings.

Importance of the Referral Process

For purposes of discussion a referral may be defined as a permanent or temporary transfer (including sharing) of responsibility for a patient's care from one physician to another—a process that may be observed not only in the scientifically based urban United States medical care system but also among Spanish-Americans in rural New Mexico [6], the Navaho on reservations [7], and the Javanese in Java [8].

The way in which physicians refer patients to one another has important effects on cost, utilization, and quality of medical care. The cost implications are obvious, since a referral means that the patient or his insuring agency must pay not only the original physician but also the consulting specialist. In addition, the patient often has little control over the cost, since the physician in his role as medical expert decides how much and what types of additional medical services the patient should receive. Certain illnesses or injuries are also more costly if they must be treated by a consulting specialist rather than by a primary care practitioner. For example, treatment of a forearm fracture by an orthopedic surgeon may cost as much as 75 percent more than treatment by a general practitioner [9].

Referrals also affect the utilization of different types of medical resources. Physicians, even of the same specialty and scope of practice, may show considerable variability in how often they refer to other physicians as well as in their referrals to hospitals, clinics, and other health agencies. Determining the causes of such variation would seem to be a prerequisite for informed manpower and facilities planning.

In terms of quality of care, the referring physician's choice of a consulting specialist is of prime importance. The consulting physician's technical competence is only one factor to be considered. Lack of clear communication and understanding between referring and consulting physicians can be as detrimental to the general quality and continuity of care the patient receives as lack of technical competence.

It is also important that the primary physician understand when and how to utilize the consulting specialist. Peterson and his associates [10], in a study of North Carolina general practitioners, judged that consulting physicians were not utilized enough in situations where they could be of help to the physician. Clute [11, p. 311], in a similar study of general practitioners in two Canadian provinces, found that approximately 30 percent of the physicians saw and treated patients they should have referred to specialists.

In addition to its primary effect, the referral process also plays a secondary role as a mechanism of professional control ("deviant" physicians do not receive referrals) and a means of continuing education. It may also be considered an informal type of group practice, in which solo practitioners coordinate patient care and provide many of the same advantages to one another that are traditionally claimed for group practice. Such consideration is of special relevance because of the continuing debate over which of several organizational arrangements of physicians is best for effective delivery of high quality medical care. Anderson and Kravits [1, p. 56] again emphasize the importance of a systematic research approach to the problem:

> It seems reasonable to assume that there is a great deal of informal group practice among physicians in private practice [but] there is no systematic information on what is really taking place in this spontaneous manner, although it can be safely assumed that the great bulk of referrals is among so-called solo practitioners.

The Referral Process: Elements and Patterns

The referral process may be broken down into two types of decisions: whether to refer or not and to whom the patient should be referred. Both may be viewed as a function of several clusters of variables. Specifically:

$$R = f(\mathbf{P}, \mathbf{M}, \mathbf{C})$$

where R = referral decision
$\mathbf{P}$ = vector of patient variables
$\mathbf{M}$ = vector of physician variables
$\mathbf{C}$ = vector of community variables

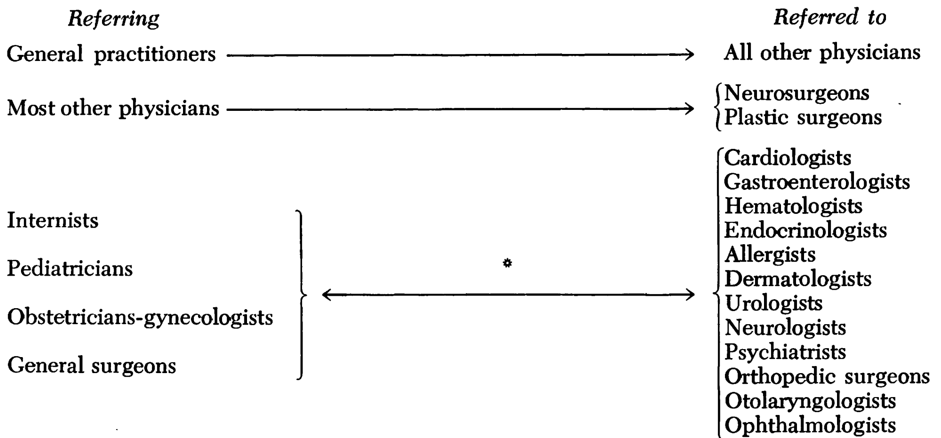
The principal patient variables affecting the referral decision are, obviously, the patient's illness and his socioeconomic background. In general, a patient who presents an illness outside the physician's scope of practice will be referred. In addition, socioeconomic characteristics such as the patient's age, sex, religion, ethnic background, marital status, occupation, residence, income, and the source of payment may exert an influence: a physician seeing two patients with exactly the same type and severity of illness may refer one and not the other because of one or more of these factors. A particular patient's social and psychological needs may also dictate the choice of one consulting physician over another, even though each may be equally well qualified technically to treat the patient's illness.

The physician variables may be divided into three categories: the social background characteristics of the physician, his practice characteristics, and the extent of his professional and community involvement. Social background comprises the usual socioeconomic variables, including the physician's medical education and training. Practice characteristics would include the formal organization of the physician's practice (solo, partnership, group, etc.), number of patients he sees, his office location and equipment, years in practice, number and types of hospital appointments, number and types of teaching or research positions held, and so on. Professional and community involvement includes the degree of the physician's activity in medical staff affairs, his participation in local and national professional associations, his involvement in local community organizations, and the like.

Community variables also influence the referral process. Examples include community standards of competent medical practice (emphasized by Penchansky in a personal communication regarding his work on referrals in prepaid group practice), type of community (size, rural or urban, etc.), its medical geography (e.g., presence or absence of a medical school), and its transportation system.

These variables will obviously vary in importance. In terms of the decision to refer or not refer, the most important variables are undoubtedly the patient's illness (type and severity), the physician's skills, his training and equipment, his sources for possible referrals, and patient preferences. The decision concern-

Table 3. Typical Referral Relationships



* Some degree of reciprocity exists between these groups.

ing to whom the referral is made would seem to depend principally on whom the physician knows in different specialties, his perception of the competence and other characteristics of these physicians, and his past experience in referring patients to various specialists. Undoubtedly, the single most important factor in the entire process is the patient's illness; the task defined by the patient's illness is the primary determinant of the general flow of referrals. Examples of some basic patterns are shown in Table 3. The more highly specialized the physician the more likely he is to serve only as a recipient of referrals and vice versa. (See the distinction by Freidson [12] between "client-dependent" and "colleague-dependent" specialists.)

Exchange Theory and Physician Referral Behavior

The principal tenets of exchange theory have been developed by Homans [13,14], Thibaut and Kelley [15], and Blau [16]. Each attempts to explain human social behavior by focusing on the rewards and costs to individuals who choose to interact with one another. From their writings, the following basic elements of exchange may be defined:

Sentiments. Attitudes and feelings of one individual toward another, as reflected in overt behavior (activities).

Interaction. A relation in which a person's activity is rewarded or punished by another person's activity, regardless of the kinds of activity involved. Each person may act in the other's presence, may communicate with the other from a distance, or may act indirectly, as in the creation of products for the other. The activity is conceived as susceptible of being quantified in terms of some unit.

Task. A problem, assignment, or stimulus complex to which the individual or group responds with activities leading to various outcomes. A conjunctive task

is one for which the reward is received only if both parties to the interaction make an appropriate response, and a disjunctive task is one for which the reward is received if either partner makes an appropriate response.

Reward. A positive reinforcement of behavior; anything that contributes to gratification of a person's needs, whether intrinsic or extrinsic. Thus, a person may interact with another because he likes the other's personality or enjoys his company (intrinsic attraction); or he may choose to interact with another regardless of personal like or dislike, because the other can supply needed services and skills (extrinsic attraction). For a fuller discussion of this distinction see Blau [16, p. 35].

Cost. A negative reinforcement of behavior, such as unfulfilled expectations, fatigue, or anxiety from engaging in the behavior, as well as the value of rewards foregone by choosing a certain activity rather than others (the opportunity cost).

Outcome. Rewards minus costs. The exchange is profitable if the outcome is positive and unprofitable if the outcome is negative.

Value. The degree of reinforcement (positive or negative) received for a certain type of activity.

Comparison level. The degree to which the outcomes of a particular interaction satisfy an individual in relation to (*a*) his expectations, (*b*) outcomes obtained by others, and (*c*) alternative choices available to him.

In relation to these elements, exchange theory sees the individual as being motivated to interact with another in an activity if he expects the association to be in some way rewarding to himself. The higher the rewards of the behavior to each of the individuals or groups and the lower the cost at which it is produced, the better the outcomes. If these outcomes exceed the individual's comparison levels, the relationship will be highly valued and the behavior is likely to be repeated in the future.

When the referral behavior of physicians is considered within this theoretical framework, the process may be outlined as follows:

The referral of a patient from one physician to another is an activity that reflects the attitudes and feelings of the first physician toward the other (i.e., a sentiment). The activity consists of overt behavior and is subject to observation.

A physician's decision to refer a patient to another physician is responded to by the other physician in such a way as to reward or "punish" the referring physician. The activity involves communication, and it may also be considered in terms of a joint product instigated by the referring physician and shared with the consulting physician, who adds his skills and services toward development of the finished product (i.e., a healthy patient). In essence, the two physicians interact. The activity may be quantified by determining the number of patients one physician refers to another.

The task involved is the stimulus complex represented by the patient's illness. It requires the diagnostic and treatment skills of two physicians and may be considered a conjunctive task in that both must make correct responses if the interaction is to have a positive outcome for the patient.

Each physician may receive several types of reward. The referring physician may be rewarded by having his patient receive proper treatment for his illness; by receiving a complete and prompt report from the consulting physician as to the patient's condition and future course of therapy; by receiving the patient back from the consulting physician for continuing care, or at least knowing that the patient will return to him for his next episode of illness; by increased prestige or status within the local medical community due to referral to a higher status colleague; by having the consulting physician refer some of his patients in return; and possibly by having the consulting physician share the fee with him. The consulting physician's rewards may include income from the additional patient, the psychic gratification of being chosen as the consulting physician in the case, the opportunity to exercise his specialized skills (and possibly learn new skills if the patient's illness is particularly severe or complex), and satisfaction in receiving a cooperative patient who has had a good work-up from the referring physician.

Each physician may also experience various costs. The referring physician's cost may include the foregone income he would have earned had he treated the patient himself; the possible psychological cost of acknowledging to the patient his inability to treat the illness; the possibility of permanently losing the patient to the consulting physician; the risk of improper treatment by the consulting physician, reflecting on the referring physician; the "fatigue" involved in poor communication from the consulting physician as to the final disposition and treatment procedures for the patient; and the possibility of losing status within the local medical community by referring to a physician of lower status or by having his work-up criticized by a physician of equal or higher status. The consulting physician's cost may include receiving a patient who has not had an adequate work-up; receiving an uncooperative patient or a malingerer; poor communication from the referring doctor as to the purpose of the referral; receiving a case inappropriate to his specialty, thus increasing his opportunity cost; receiving a referral from a lower status colleague with whom he may not wish to develop a referral relationship; and possibly having to share his fee with the referring physician.

Each physician experiences a tradeoff between the values he places on these rewards and costs, resulting in either a positive or negative outcome in terms of some comparison level involving the initial expectations of the relationship, the outcomes of physicians of similar status ("comparison others"), and alternative available referral choices.

The heart of exchange theory lies in the analysis of outcomes (rewards minus costs) versus comparison levels. Its relevance lies in its apparent ability to take into account all the elements of the referral process mentioned earlier, as well as structural task considerations—in essence, the entire social matrix surrounding the physician's behavior. For example, in the case of a reciprocal relationship, Physician *A* is fully rewarded for engaging in referral activity with Physician *B* only if the latter also refers patients to *A*. If *B* fails to do so, *A*

incurs a great cost (especially in the long run), since he is helping *B* build his practice at *A*'s expense. Physician *B* has greatly increased his rewards, but he has also increased the costs to *A*. If these costs exceed *A*'s comparison level, the theory predicts that he will discontinue the relationship, as illustrated in the comment of a urologist reported in a study of referrals [17]: "I've referred several patients to an internist and never gotten a single referral from him. Why should I keep on sending him patients?"

In a one-way referral relationship no "reciprocal" referral from *B* to *A* occurs or is expected to occur. The outcomes, in this case, are not affected by the "unreciprocated" referrals; other factors such as how well the patient is treated and whether he is eventually returned to the referring physician become the relevant reward and cost considerations, as indicated by a general practitioner quoted in an article on referral practice [18]: "Any consultant who sends back prompt written reports is bound to have all the practice he can handle. The specialists on my lists always get the patients back to me pronto. They're wonderful!" Another general practitioner, speaking about his consulting physicians, discusses the costs [19]: "Some are outright pirates. They try to steal patients I send them—and they never seem to understand what I want. They waste my time and cause error and confusion."

Discussion

Exchange theory thus provides a theoretical basis for further study of the process by which patients are channeled from one physician to another. The theory may provide some insight into such questions as

- Why are some physicians chosen more often as consultants than others? Is it simply a matter of competence, or do other factors such as clear communication or desire for reciprocal referrals also play a role?
- Why do some physicians even within the same specialty and type of practice refer more often than others?
- Why do some physicians use a greater number of consultants than others?
- In general, how does a referral relationship become established? Why does physician *A* choose *B*, *C*, and *D* as referral partners rather than *X*, *Y*, and *Z*?

Examples of specific hypotheses that might be tested in future empirical research include the following:

- The greater the similarity between two physicians (as perceived by them), the more likely they are to develop a referral relationship.
- Within any given specialty, the higher a physician's status in the local medical community the higher the percentage of patients he will receive on referral from other physicians.
- Within any given specialty, the higher a physician's status in the local medical community the higher the percentage of patients he will receive from long distances.

A clear theoretical base for research makes it possible for the investigator to analyze a variety of empirical findings in a logical framework as well as to ask further questions in an organized fashion. We want to know more than the mere fact that some physicians, even of the same specialty, refer more of their patients than others do; we should like to know why, under what conditions, and to whom. These factors are especially relevant because of the important public policy implications of recent research into the delivery of medical care. A growing understanding of the hospital as one component of the health care delivery system has evolved from research derived from organization theory, but there is as yet no comprehensive theory of medical practice. For those who choose to view the physician in a purely economic context as a profit maximizer, the traditional theory of the firm may be valid. An exchange theory approach does not negate this view but rather incorporates the physician's nonpecuniary interests as well; for example, his desire to advance his position in the medical community.

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