

CUES TO STROKE REHABILITATION REFERRAL AMONG FAMILY PHYSICIANS

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ABSTRACT: The analyses in this study—from the Rehabilitation Center at Montebello State Hospital, Maryland—indicate that physicians have been slow to accept as a legitimate activity the rehabilitation of their stroke patients. The physicians who are more likely to send patients for such care tend to be more recent graduates, to belong to hospital staffs and medical societies, and possibly to graduate from schools in which the faculty has more interest in rehabilitation. From the experience with their first patients, physicians may learn how to refer more suitable patients.

The situation is complex, however; the available data concerned only indirectly those factors which are probably most crucial to the degree of innovation. To avoid upsetting Montebello's program, this study did not include personal interviews with the 294 general practitioners involved, thus leaving some crucial questions dangling in mid-air, and possibly overlooking some valid reasons for nonreferral for rehabilitation during this period.

The findings are tentative but they seem to indicate that the norms for physicians may not favor the use of outside sources of help nor encourage the energetic treatment of stroke patients. Cultural norms change only slowly, and this may partly explain the slow referral for rehabilitation. However, we should strive to ensure that the concepts and scientific basis of rehabilitation be as clear and as strong as possible, and that the concepts be communicated accurately, intensively and repeatedly. This will prepare a more fertile field for the seeds of change.

The subtle tyranny of fashion pervades even in medicine. Every doctor should pause from time to time to ask himself whether he's really pursuing a new and fruitful line or whether he's running with the herd; whether he's falling back on a well-worn conviction, a national prejudice, or even a prejudice of the school he was trained in.

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Certain features of medical practitioners or of their environment may raise their likelihood of bringing something new into use. Coleman and associates, for example, showed that the better the social integration of physicians into the medical community, the earlier they adopt a new drug (1). These early prescribers tend to be middle-aged or young, and they attend more specialty meetings and read more medical journals than do the conservative physicians. In a study of directors of health departments, Mohr found that older health officers are less innovative than the younger men, and that the amount of previous experience in private practice is inversely related to their willingness to begin new programs in public health (2). In a related study of health officers, Becker found that those pioneering an activity which is likely to be well accepted, e.g., measles immunization, differ in some qualities from those adopting poorly accepted programs, e.g., diabetes screening (3). Thus in any geographic area, we are likely to find factors which help to separate the innovators from the conservatives.

In the field of medical care, the scientific basis for the rehabilitation of stroke patients has improved slowly over several decades. Although some neurologists remain sceptical, it would seem that by 1956 the value of rehabilitation was sufficiently well established that most physicians should have arranged restorative care for selected stroke patients. Nevertheless the following study will show that 54 per cent of a cohort of general practitioners did not refer even one stroke patient during the period 1956-1964 to the only inpatient rehabilitation center in Baltimore. The purpose of this paper is to detail the process of referral, and to discuss some reasons why family physicians have been slow to use this facility and probably many other rehabilitation facilities.

METHOD OF STUDY

A physician was included in this study provided: 1) he was listed in the Baltimore telephone directories for 1956 and 1965, and 2) he had an office within the city limits. These physicians were assumed to have practiced continuously in Baltimore during the 1956-1964 period.

Excluded from the study were the physicians listed in the American Medical Association Directory for 1964 as full-time specialists, as retired, or as in other classes that precluded general practice. In all, 294 physicians in part-time or full-time general practice comprised the study group.

The same medical directory provided information for each physician about his membership in the American Medical Association, the medical school which he attended, and his year of graduation. Other current directories gave information on membership in the American Academy of General Practice and in the Baltimore City Medical Society. When we sought information on hospital affiliation, 16 of 17 general hospitals in Baltimore released the names of their attending physicians.

The rehabilitation center was Montebello State Hospital. This health department facility admits chronic disease patients of all income groups residing in the Baltimore metropolitan area. Since 1955 the hospital has had a full-time psychiatrist

to implement the state health department's decision that the rehabilitation of long-term inpatients should be the primary goal of Montebello.

The medical director of Montebello has a complete file of applications for admission during the period 1956-1964. Each form bears the patient's primary diagnosis at the time of application; it also furnishes other medical information about the patient, and the name of the referring physician. The forms for patients with a primary diagnosis of a vascular lesion affecting the central nervous system (ICDA 330-334) thus provided the names of the physicians who referred stroke patients to Montebello.

PATTERN OF REFERRAL

The degree to which the physicians used Montebello probably relates to the time they first learned of Montebello's rehabilitation program and about rehabilitation in general, became willing to act on this knowledge, and acquired patients suitable for referral. The annual incidence of disabling cerebrovascular lesions seems to be at least 2 per 1,000 population in the United States (4). Most physicians are likely to acquire a suitable patient within a few years. All physicians in this study should have seen between 9 and 27 new stroke patients during nine years, and could have found at least 1 patient suitable for rehabilitative care.

As shown in Table 1, the 294 general practitioners included 135 physicians who referred 321 stroke patients during 1956-1964. Two physicians each referred 10 stroke patients in this period. In contrast, 54 per cent of the physicians made no referral. After nine years, therefore, rehabilitation referral was still the exception rather than the norm among the studied physicians.

The first line of Table 2 shows that the number of patients referred rose through 1962 and then plateaued. Line 3 shows a similar pattern for stroke patients referred from other sources. In the last four years, referrals by general practitioners (GP's) formed a higher proportion of all referrals than in earlier years. General practitioners were possibly slower to learn of Montebello's program and undoubtedly slower to find suitable patients than were other sources of referral such as general (acute disease) hospitals.

TABLE 1
Extent of Referral of Stroke Patients by 294 General Practitioners During 1956-1964

Extent of Referral	Number of GP's	Number of Stroke Referrals
Total	294	321
Making no referral	159	0
Referring 1+ patients:	135	321
referred 1 patient	54	54
referred 2 patients	41	82
referred 3 patients	17	51
referred 4+ patients	23	134

TABLE 2
Time Trends in Referrals by GP's and by Other Sources

	Total	1956	1957	1958	1959	1960	1961	1962	1963	1964
Referred by GP's	321	4	21	30	20	36	45	56	54	55
Per cent admitted	61.1	25.0	47.6	53.3	60.0	66.7	66.7	67.9	50.0	69.1
Referred by other sources	1,932	69	127	151	186	260	264	311	319	265
Per cent admitted	52.8	47.8	33.1	51.7	53.8	58.1	50.1	55.6	57.1	51.3

How appropriate were the referrals from general practitioners? One indication of their suitability for Montebello's program was the proportion admitted to the institution; 61 per cent of GP referrals and 53 per cent of other source referrals were admitted. For most years, Table 2 shows that relatively more patients referred by GP's were admitted than patients referred by other sources.

Figures for admissions are affected by the percentage of patients who died while awaiting admission. This was usually higher among those referred by other sources, since they included general hospital patients in the acute stage of their illness. When we allow for this higher mortality, however, GP-referral patients seemed at least as suitable for admission as those referred by other sources.

PLACE AND TIME OF PHYSICIAN'S GRADUATION

Table 3 shows the allocation of the study physicians according to their place of graduation—the two medical schools in Baltimore, or to all schools outside the state of Maryland. Graduates from Johns Hopkins made fewer referrals than graduates from other sources. However, an analysis of the patients referred (not given in this paper) indicates that the referrals from Johns Hopkins graduates were just as suitable for rehabilitation as those from graduates of other schools.

It should be noted that physicians had to graduate by 1955 in order to be included in this study. At that time, neither Johns Hopkins or the University of Maryland had organized programs for teaching rehabilitation. However, some published information indicates that the University of Maryland had interested relatively more graduates in rehabilitation (5). For example, of 1,844 graduates of the University of Maryland who have

TABLE 3
Degree of Referral, by Medical School of Graduation

	Medical School of Graduation			
	Total	Johns Hopkins	Univ. of Maryland	Other
All GP's	294	23	165	106
Referring GP's	135	5	83	47
Per cent referring	45.9	21.7	50.3	44.3

TABLE 4
Years between Graduation and 1956, by Degree of Referral

	Years since Graduation			
	Total	Less than 21	21-35	More than 35
All GP's	294	144	106	44
Referring GP's	135	71	51	13
Per cent referring	45.9	49.3	48.1	29.5

specialized, 9 entered the field of physical medicine and rehabilitation; in contrast, of 2,069 specialist graduates of Johns Hopkins, none entered this field. When the study ended, Johns Hopkins had no full-time physiatrist on its teaching staff, whereas the University of Maryland had two. These findings are not conclusive, since the two schools admit different types of students. Nevertheless, the findings do suggest that Johns Hopkins has shown less interest in rehabilitation, and that the lack of interest may be reflected in the practices of its graduates.

Considering the total group of physicians, irrespective of school of graduation (Table 4), the 44 earliest graduates referred significantly fewer patients than did those who graduated after 1920. This finding may reflect increased emphasis on, or improvement in the teaching of rehabilitation in recent years. However, the fact that graduates after 1935 were little better in rehabilitation referral than those graduating during the period 1921-1935 suggests that improved teaching was not a potent factor.

Perhaps the more likely cause is a tendency for older physicians to be less receptive to new developments. In this study, the correlation between age and year of graduation from medical school was too high to demonstrate the separate effect of each.

CONTINUING EDUCATION

After graduation from medical school, physicians acquire other credible sources of information; these include fellow practitioners, speakers at medical society meetings and writers in medical journals. Tables 5 and 6 indirectly show the influence of these factors.

Physicians on hospital staffs are likely to interact with more colleagues, and thus be spurred to keep abreast with the latest advances, than those not on hospital staffs. Table 5 shows that the 211 physicians listed as attend-

TABLE 5
Hospital Staff Membership of Physicians, by Degree of Referral

	Hospital Staff Membership		
	Total	Listed	Not listed
All GP's	294	211	83
Referring GP's	135	107	28
Per cent referring	45.9	50.7	33.7

TABLE 6
Medical Society Membership of Physicians, by Degree of Referral

Physician Group	Membership in:				
	American Medical Association	Academy of General Practice	City Medical Society	All Three	None
All GP's	129	43	209	29	73
Referring GP's	69	28	105	18	24
Per cent referring	53.5	65.1	50.2	62.1	32.9

ing physicians by Baltimore hospitals referred significantly more patients than those not so listed. Playing a part in this finding is the possibility that hospital staff physicians can look after their patients through the acute phase until they become suitable for referral to a rehabilitation center. In contrast, those physicians without access to hospital beds may transfer to other physicians some stroke patients in the acute phase, and may no longer be caring for the patient when he becomes suitable for rehabilitation.

Probably members of medical societies hear more speakers, meet more colleagues, and read more journals than nonmembers. Table 6 shows that the 73 physicians who were not members of medical societies referred fewer patients than did those who were members. Those belonging simultaneously to the three societies studied were good referrers, as were members of the American Academy of General Practice. Although the differences are not statistically significant, the percentages shown in Table 6 are compatible with the belief that such organizations do inform about rehabilitation and perhaps make it respectable. However, physicians who choose to join organizations are probably self-selected. It may well be that those least liable to refer for rehabilitation are also least likely to expose themselves to sources which urge this treatment.

QUANTITY VERSUS QUALITY IN REFERRAL

Physicians may learn more about rehabilitation after making their first referrals to Montebello, when they obtain "feedback" about the progress and problems of their patients. If this be so, physicians who made one or two referrals would send less suitable patients than those referring more.

Table 7 shows that physicians making multiple referrals tended to refer more promptly (column 3). Of the patients admitted, slightly fewer coming from multiple referrers died than patients from physicians making only rare referrals (column 5). These findings support rather weakly the belief that physicians learn something from their first referrals.

DRUG PRESCRIBING VERSUS REHABILITATION REFERRAL

The slow acceptance of rehabilitation could be explained more readily if physicians had also been scientifically conservative in other fields of treat-

TABLE 7
Characteristics of Patients Referred, by Number of Patients Referred by GP

From GP's Referring	Number Referred	Average Weeks Since Onset of Stroke	Per Cent Admitted	Per Cent Dead 6 Months after Referral
1-2 patients	136	56.3	58.1	33.8
3-4 patients	83	48.1	59.0	28.9
5+ patients	102	33.9	64.7	32.4

ment. On the contrary, however, medical and surgical advances seemed to be accepted with reasonable speed during the period included in this study (1, 6). It seems useful, therefore, to consider why physicians who speedily adopt new drugs, for example, have been slow to accept rehabilitation.

New-drug prescribing and rehabilitation referral resemble each other in that both involve the long-term, difficult-to-treat patients who form a rising problem in family practice. In such instances, neither rehabilitation nor the new drug has an immediate, dramatic effect on the patients.

However, the nature of the two procedures probably differs in some important ways:

1. Although much discussed in medical journals and at professional meetings in the past two decades, rehabilitation has never been pushed so intensively as has the commercial introduction of new drugs. Thus there are no detail men to visit doctors' offices to speed the prescribing of rehabilitative technics.

2. Many new drugs have benefitted from the "halo effect" generated by successful chemotherapeutic and antibiotic preparations. Until very recently, it had almost become part of the medical culture that the latest drug was likely to be the most effective. Although rehabilitation has also had its triumphs, the successes have not been dramatic enough to stimulate equal enthusiasm for efforts to rehabilitate the less tractable group of stroke patients.

3. The use of a new drug fits in well with the usual physician-patient, one-to-one interaction, in which the physician controls the treatment technics. In contrast, rehabilitation is made up of a complex and time-consuming series of technics, often requiring the physician to lose control over the care of the patient. When faced with a surfeit of information on recent advances, the physician is most likely to recall and act on those facts which strengthen his existing practices.

4. The use of a drug is an established, acceptable part of the medical culture. On the other hand, rehabilitation has not yet reached that level of acceptability. Rehabilitating the difficult patient may involve using some nonphysicians, the need for whose help may be regarded as a confession of weakness or failure by the physician. Some physicians may still view rehabilitation as a nonmedical, "lay" method of care, even though physiatrists with M. D. degrees take part in its provision.

These important differences make it likely, therefore, that the slow adoption of rehabilitation results partly from its being a qualitatively different type of procedure from that of using a new drug.

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