PRACTICE OBSERVED

Practice Research

Referral to medical outpatients department at teaching hospitals in Birmingham and Amsterdam

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Abstract

A method of comparing the referral of patients by general practitioners to medical outpatients departments at teaching hospitals in Amsterdam and Birmingham was devised. This was applied to 89 referral letters to medical specialists at the Free University Medical School Policlinic in Amsterdam and to 88 referral letters to clinics in Birmingham University Medical School, UK. The standards of referral were lower in the Netherlands than in Britain, and this may be related to differences in the health care systems, in the culture, or in the organisation of general practice. The delay between the general practitioner's referral and the consultation at the outpatient department was four times greater in Britain than in the Netherlands.

Introduction

Primary care and secondary care meet most commonly when a patient is referred by a general practitioner to a specialist. Since the beginning of the National Health Service much has been written about this, often criticising the referring general practitioner.¹ The improvement in the organisation of general practice over the past two decades has been paralleled by improvements in the standards of referral—for example, Dawe found that letters from doctors in health centres contained appreciably more information and more

fully hypothesised diagnoses than those from doctors who were not practising in health centres.

This study compares the referral of patients in Amsterdam and Birmingham. It was undertaken because FMH was teaching in the medical outpatients department in Amsterdam he observed different patterns of referral from those seen in Britain. Amsterdam has half the population of Birmingham and two medical schools, each of which is larger than that of Birmingham, and provides many more hospital facilities and specialists, although the numbers of patients on general practitioners' lists are similar in the two cities. International comparisons are difficult to make because of variations in culture which influence the attitudes and expectations of both doctors and patients and because of differences between health care systems. In Amsterdam many more patients are referred than in Britain: 510-515 per 1000 patients each year compared with 154-225 per 1000 patients (according to region).² Although many factors influence this, we wondered whether this difference could be explained by overreferral in Holland or underreferral in Britain.

Method

A system of scoring referral was designed, validated, and applied to 50 consecutive referrals to two consultant physicians at the outpatients departments at teaching hospitals in Birmingham and to two consultants at the Policlinic of the Academic Hospital of the Free University of Amsterdam. Referrals were scored according to the quality of the referral letter and the appropriateness of the referral. Additional data were collected on the age, sex, and country of qualification of the referring doctor and the time interval between the date of the doctor's referral letter and the date of the consultation with the specialist.

The quality of the letter was defined as follows: (a) no referral letter; (b) poor referral letter: poorly written with minimal information; (c) barely adequate referral letter: bare indication of the problem with little indication of the referring doctor's expectations; (d) good letter: legible letter with some account of the patient's background, history, and examination findings and an indication of what the referring doctor expects of the specialist; (e)

5th letter and photocopies of these letters were scored (1 = no referral letter, 5 = excellent referral letter) by each of them and also by a social scientist as an independent observer (table II). In 27 of the 40 letters there was a discrepancy between scores of 1 or less, in 12 letters there was a discrepancy in scores of 2. In only one letter was there a greater discrepancy (letter N6). This letter consisted of a single sentence and was accompanied by a photocopied list of laboratory investigations and clearly was difficult to classify. Table III shows that the British referral letters were judged to be better (mean score 3.18 and 3.90) than the Dutch letters (mean scores 2.74 and 2.50). The total scores for Drs N, L, and B and for the social scientist showed close similarity while Dr G was slightly more generous in his scoring. Standards of letters—Each specialist returned data on 50 consecutive referral letters, providing data for a total of 200 letters. Of these, 177 (89 from Amsterdam and 88 from Birmingham) concerned referrals from general practice; the remaining 23 concerned referrals within the two hospitals and were excluded. In Birmingham 90% of patients were referred to specialists by name, whereas in Holland 90% of patients were referred simply to the specialist's department. Table IV shows how each specialist judged the quality and appropriateness of letters relating to his own consultations. For simplicity the categories of "no letter" and "poor letter" are lumped together, as are "good" and "excellent" letters. Table IV shows a pronounced difference in judgment of both the quality of the letters and the appropriateness of referral among the specialists in the different countries.

TABLE IV—Assessment of the quality of the referral letter and the appropriateness of referral by specialist in Amsterdam and Birmingham on their own consultations (N=6 and %).

	Amsterdam (N=6)	Birmingham (N=6)
Quality of letter		
No letter	41 (6.7)	8 (9.1)
Poor or almost	26 (4.2)	16 (18.2)
Barely adequate	22 (3.5)	10 (11.4)
Good or excellent	89 (14.1)	88 (100)
Appropriateness of referral		
Unnecessary referral	13 (2.1)	5 (5.7)
Inappropriate referral	14 (2.2)	3 (3.4)
Appropriate referral	17 (2.7)	3 (3.4)
Appropriate referral	19 (3.0)	9 (10.2)
Appropriate referral	26 (4.2)	48 (54.5)
Appropriate referral	89 (14.1)	88 (100)

It had been suggested that some of these variations resulted from differences in the security, age, or country of qualification of the referring doctors. In both countries there were few referrals from women general practitioners or doctors who had qualified outside their own country, and there were also no differences of quality of letter or appropriateness of referral. Small differences relating to age in both countries were not significant.

Lastly, the mean interval between the date of the doctor's referral letter and that of the consultation with the specialist was 23.5 days in Birmingham and 6.9 days in Amsterdam. One specialist in each country commented that there had been delays attributable to the patients (owing to deliberate postponement or not posting the referral letter). When the two patients in Holland and the one in Birmingham who delayed their consultation were removed from the analysis the difference in delay was even more striking: 23.1 days in Birmingham and 5.2 days in Amsterdam. Part of this delay is organisational: in Birmingham patients to the hospital and appointments are sent by post, whereas in Amsterdam the patients telephone or make appointments in person, taking their letter with them.

Discussion

This paper reports a comparison of quality and appropriateness of referrals to medical specialists at two teaching hospitals, one in Birmingham and one in Amsterdam. In Britain most patients are referred within the National Health Service. In the Netherlands about two thirds of patients are insured with organisations called *ziektekostenfondsen* (Ziekenfondsen), which entitles subscribers to much the same privilege as NHS patients in Britain. The remaining Dutch patients have private arrangements with their insurers. In both countries capitation payment for patients on a general practitioner's list make up a large proportion of income.

Specialists, however, are paid differently in the two countries: British specialists by salary and most Dutch specialists by item of service payment for each consultation.³ The method of payment in teaching hospitals is complex, however. Original attendance was free to patients in the Netherlands to encourage referral for teaching purposes. Specialists were paid by the hospital, but now they are paid as civil servants and, as part of the civil service in the Netherlands, have just had a substantial cut in income. These differences may have a considerable impact on the attitudes of specialists, particularly in their tolerance of the poor quality of referral. In the Netherlands referral rates are very high; in 1982 a mean of 515 per 1000 patients who were insured by the sick funds were referred for specialist advice.⁴ (This figure is higher in Amsterdam than anywhere else in the Netherlands at 619 referrals per 1000 patients.)⁵ This enormous referral rate is inflated in many ways.⁶ When referring a patient a general practitioner initiates a referral card which enables the specialist to obtain the item of service fee and entitles the patient to one year of specialist care as an outpatient.

Subsequently, new referral cards are initiated by the specialist or, when outpatient care continues beyond a year, by the general practitioner. As there is no way of distinguishing between these types of referral cards the figure is grossly overstated by the inclusion of "follow up" cases. The figures are further inflated by the inclusion of referrals to ophthalmologists for refraction (which in 1981 and 1982 made up 21% and 22%, respectively, of all referrals). Van Es and Pijlman made a distinction between active and passive referrals, the latter containing referral cards initiated for refraction and follow up, active referrals (about half of all referrals) being the request of either the general practitioner or the patient.⁷ This still leaves a rate for Amsterdam at over 300 referrals per 1000 patients a year. Lamberts, providing data from nine urban practices in Rotterdam, Haagvliet, and Maasticht, found figures of 200 and 190 referrals per 1000 insured patients a year for two consecutive years.⁸ In Britain referral rates are often expressed as a rate per 1000 encounters between a general practitioner and a patient rather than per 1000 patients at risk. It is possible to recalculate such a rate from Lamberts's figures as 65 and 67 referrals per 1000 encounters for the two years. This is much higher than the rates from FMH's practice in rural Warwickshire, which show considerable variation between years (16-31 referrals per 1000 encounters).

Lamberts's figures conceal a range for the nine practices from 50 to 88 referrals per 1000 encounters. Donald pointed out that in British variations among doctors accounted for a fivefold difference in the cost of referral and some consideration must be given to the effect of *één van a year*: costs in the Netherlands must be even higher. Another important influence on referral patterns concerns differences in practice organisation between the two countries. In 1982 62% (roughly 5600) of Dutch general practitioners were single-handed, and 12% worked in partnerships of more than two doctors.⁹ Practice premises tend to be simple, adapted from houses or shops, and often have little ancillary help. Though poorly organised practice is still found in Britain, the overall impression of Dutch practice is similar to that of British general practice in the 1950s and early 60s.

Krol, looking at paediatric referral, showed that the number of referrals in the Netherlands increased and attributed this in part to the greater medical knowledge of patients; he also stated that the general practitioners' motives in referral are unclear or even unknown.¹⁰ In another study of 100 Dutch referrals for respiratory conditions it was suggested that letters should be typewritten, list medication, ask a clear question of the specialist, and record important details such as smoking.¹¹ That such basic elements have to be listed confirms the poor quality of referral letters.

The quality and appropriateness of referral appear to be better in Birmingham than in Amsterdam. This may be related to the higher referral rates in the Netherlands. Other explanations for this finding may include less organised primary care in the Netherlands compared with that in Britain and the tendency of Dutch referrals to be made to a department whereas British referrals are made to a named (often by first name) doctor. In Birmingham the mean

excellent letter: clearly legible letter stating relevant past history, psychosocial factors where relevant; the patient's problem, history, examination, and (where relevant) results of preliminary investigation and a clear indication of what the referring doctor wants to know from the specialist. The adequacy or appropriateness of the referral was defined as follows: (a) unnecessary referral: the patient's problem should be completely within the competence of a general practitioner; (b) inappropriate referral: the patient has a problem but the referring doctor has not identified it sufficiently to refer to the correct specialist (or other source of help) or the patient should have been advised, seen sooner, or referred urgently; (c) inadequate referral: though inadequately investigated by the general practitioner the

TABLE I—Rank order (1-10) of each fictional letter (I-X) assessed by each specialist (N, L, G and B) (N=6 each, 10=best).

Specialist	I	II	III	IV	V	VI	VII	VIII	IX	X
N	3	4	8	2	6	5	1	10	7	9
L	3	4	8	2	6	5	1	10	7	9
G	3	5	8	1	4	7	2	9	6	10
B	3	5	8	1	4	7	2	9	6	10
Mean rank	3	4	8	2	6	5	1	10	7	9

Correlation coefficients: Spearman's r between rankings of letters by pairs of specialists	N	L	G	B
N-L	0.90	0.92	0.93	
N-G		0.91	0.90	
N-B			0.92	
L-G				0.90
L-B				
G-B				

TABLE II—Quality of referral letter as assessed by the four specialists

Specialist	I	II	III	IV	V	VI	VII	VIII	IX	X
N	4	4	2	5	3	3	5	2	3	1
L	2	3	1	3	3	2	4	1	2	1
G	1	4	2	4	3	3	4	1	2	2
B	4	4	2	4	3	3	4	1	2	2

1 = no referral letter, 2 = poor referral letter, 3 = barely adequate letter, 4 = good letter, 5 = excellent letter, 6 = excellent letter, 7 = excellent letter, 8 = excellent letter, 9 = excellent letter, 10 = excellent letter.

N=6 and L=6 Dutch specialists, G and B are British specialists.

TABLE III—Assessment of 20% sample of each Dutch (N and L) and British specialist's (G and B) letters by all specialists and by a social scientist (SS).

Specialist's score*	N	L	G	B	SS	Total
N1	4	4	4	3	3	18
N2	4	4	4	3	3	18
N3	2	2	3	3	2	12
N4	2	2	3	3	2	12
N5	4	4	2	3	3	16
N6	4	4	2	3	3	16
N7	2	3	3	3	2	13
N8	2	3	3	3	2	13
N9	2	2	3	3	2	12
N10	2	2	3	3	2	12
Total	27	25	36	30	25	143
Mean rank	4	4	4	4	5	4.1
L1	2	2	2	2	2	10
L2	2	2	2	2	2	10
L3	1	1	1	1	1	5
L4	1	1	1	1	1	5
L5	2	2	2	2	2	10
L6	2	2	2	2	2	10
L7	2	2	2	2	2	10
L8	2	2	2	2	2	10
L9	2	2	2	2	2	10
L10	2	2	2	2	2	10
Total	20	20	20	20	20	100
Mean rank	2	2	2	2	2	2.0

*See footnote to table II.

Correlation coefficients: Spearman's r between rankings of letters by pairs of specialists. Correlation coefficients: Spearman's r between rankings of letters by pairs of specialists. Correlation coefficients: Spearman's r between rankings of letters by pairs of specialists.

writing time for an appointment with a specialist is four times that in Amsterdam. This study indicates a need to know much more about communication between primary and secondary care in both countries.

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Diagnosing cancer in general practice: from suspicion to certainty

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Abstract

Three hundred and eighty two patients who were suspected of having cancer by general practitioners were followed up for up to two years until the suspicion was either confirmed or rejected; 7014 patients who were not suspected of having a malignancy served as the control group. Less than every tenth suspicion proved correct. The general practitioner's assessment of the strength of suspicion of cancer was the best predictor of outcome in the suspected patients. The incidence of cancer among the unsuspicious patients did not differ from the total incidence of cancer in the study area.

The patient's fear of cancer was an important predictor of a malignancy. A higher proportion of patients who consulted for non-symptomatic reasons than for symptomatic reasons were reported to have a malignancy. No single symptom had a strong predictive value for cancer. The predictive value of a palpable lump or tumour was 2.5%.

Introduction

Making a medical diagnosis is a stepwise process that differs from other types of problem solving because all the information that is needed is usually unavailable at the start. Based on a personal knowledge of the patient and estimates of probability and the consequences of treatment the general practitioner will make one or more hypotheses which will be tested or revised after taking a history, a clinical examination, and laboratory tests.¹ The general practitioner has to decide whether or not to be satisfied with the primary diagnosis or whether it needs to be verified by further investigation.²

Patients and methods

The study was carried out in a limited, defined area with 29 420 inhabitants in western Norway. A total of 23 100 patients participated. During September and October 1983, 10 278 encounters with 7396 patients were recorded. Of these, 429 encounters with 382 patients, representing 355 cases of suspected cancer, were classified as resulting in a follow up for suspected cancer. Patients whose general practitioner decided to investigate or examine beyond the initial encounter for a suspected malignancy were considered to be cases of suspected cancer.

The general practitioners assessed the strength of the suspicion and the patient's own influence on the follow up on visual analogue scales. The outcome of the diagnostic process was studied in two ways: (a) Each patient who was suspected of having cancer was followed up until the general practitioner reported that the suspicion was either confirmed or rejected. A verified premalignant condition was classified as a confirmed suspicion. The follow up period lasted for up to two years. (b) After 1 September 1985 the whole series was matched against the new cases of malignant and premalignant disease reported to the Cancer Registry of Norway during the two year period. In this way the outcome for patients with suspected and unsuspicious cancer could be analysed.

The difference between verified and rejected suspicions was analysed by a multivariate method in an attempt to classify the patients with a verified suspicion. For this analysis Fisher's linear discriminant model was used.³ Other statistical methods used were the χ^2 test and Student's *t* test.

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Results

Table 1 shows what action was taken by the general practitioners when they suspected malignancy. After a two year follow up 70.7% of the 385 patients who were suspected of having cancer were reported by the general practitioners to have either malignant (24) or premalignant (34) disease. All tumours except one skin cancer were verified histologically.

Four patients died before a firm diagnosis had been made, and necropsy was not carried out. In nine cases the suspicion had not been rectified or confirmed after two years. Most of these patients were old, and the doctors reported that further investigations were cancelled because there would have been no benefit from treatment. In 342 cases the suspicion was rectified.

Table II gives the diagnostic outcome according to the main group of suspected malignant disease. One patient who had a suspected lung cancer

TABLE 1.—Action taken by the general practitioners who suspected cancer in 429 encounters

Action	No	%
Seek professional advice	264	61.3
New appointment	264	61.3
First tests	148	34.5
Referral	148	34.5
Referral to hospital	148	34.5

Note: The total number of procedures exceeds 429 because more than one action might be taken during the same encounter.

TABLE II.—Diagnostic outcome after a two year follow up of 382 patients investigated for 385 suspected malignancies

Suspected malignancy (ICD-9)	Symptoms			Result unknown	Total
	Confirmed	Rejected	Examined		
Breast cancer, pharynx	1	2	3	3	6
Colorectal cancer	10	82	3	3	98
Prostate cancer	1	1	1	1	4
Bladder and genital organs	9	123	4	136	148
Other and unspecified cancer	3	10	1	14	18
Other and unspecified cancer	4	93	2	101	107
Lymphoma and leukaemia	10	10	1	10	21
Other and unspecified cancer	30	342	9	4	385

*Diagnosed without necropsy. ICD: International Classification of Disease.

TABLE III.—Relative contribution of some factors in classifying patients as having cancer or as those who were suspected of a malignancy

Factor or variable	Feeling that indicated a confirmed suspicion	Estimated value
Doctor's assessment of the strength of suspicion	Strong	0.85
Age of patient	Old	0.40
Unimpaired vs. non-impaired	Non-impaired	0.37
Reason for encounter	Non-impaired	0.37
Patients' influence on the follow up	Non-impaired	0.37
Patients' fear of cancer	Non-impaired	0.37

TABLE IV.—Data on patients who were and were not suspected of having cancer who were reported to the Cancer Registry of Norway during the two years after the initial encounter

	Suspected	Not suspected	Significance
Mean age, years	67.2	62.8	
% of males	61.6 (72.5)	59.1 (68.5)	NS
% of females	38.4 (27.5)	40.9 (31.5)	p=0.09
% of premalignant diseases	6.2 (5.7)	10.1 (13.7)	p=0.13
Mean encounter, months between encounter	4.6	10.7	
% of confirmed cancer	2.6 (6.8)	8.1 (11.7)	p=0.001
% of patients whose reason for encounter was not associated with the reported cancer	10.2 (8.9)	14.4 (10.0)	p=0.001

TABLE V.—Predictive value of patients' main reason for encounter (type of problem) as regards premalignant and malignant diseases reported to the Cancer Registry of Norway over a two year period related to whether the general practitioner suspected cancer (S) or not (N)

Main reason for encounter	No	% with premalignant or malignant disease reported in next two years
Symptoms		
Painful lump or tumour	53	1.5.7
Pain	68	
Weight loss	109	8.7.3
Weight loss	266	28.1.0
Fatigue	1	
Fatigue	8	1.32.5
Changes in bowel habit	77	2.30.0
Changes in bowel habit	14	1.13.3
Changes in bladder habit	24	2.14.3
Changes in bladder habit	25	1.40.0
Changes in sexual habit	14	1.1.1
Changes in sexual habit	79	3.31.8
Skin changes	18	3.16.7
Skin changes	170	2.19.5
Hoarseness	39	6.15.4
Other or unspecified symptoms	117	6.61.8
Other or unspecified symptoms	232	31.1.1
Non-symptomatic		
Diagnostic, preventive procedures	66	6.130.1
Diagnostic, preventive procedures	1180	17.1.41
Treatment procedures	6	1.16.7
Treatment procedures	653	9.9.5
Test results	6	
Test results	57	1.20.0
Administrative procedures	2	
Administrative procedures	415	4.1.0
Other or unspecified	22	
Other or unspecified	24	1.12.1
Diagnosis, disease, control	1182	21.2.0
Diagnosis, disease, control		
Unknown	8	
Unknown		
Total	429	41.10.0
Total	9649	116.1.2