

The impact of guidelines in clinical outpatient practice

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The uneven utilisation of present outpatient services is well documented [1,2]. In England and Wales in 1982, regional total outpatient attendances per thousand population varied by more than three-fold for ten of 20 specialties investigated and by two-fold for the rest [3]. There were also wide variations between regions in the ratio of total/new outpatient attendances for the same specialty. Within seven specialties the difference was greater than two-fold and eight had total/new ratios of over 5:1. The decision to discharge or follow up has an important influence on the utilisation of outpatient services but little is known about the clinical processes involved and how these vary between clinicians [4].

This paper presents the results of an audit of the consultation process and outcome of the initial general medical outpatient consultation in a large teaching hospital in Wales. Eight consultant physicians agreed to allow their work and that of their junior staff to be monitored. Four of these consultants and their junior staff also agreed to adopt guidelines for the more 'efficient' use of medical outpatients, and the paper compares their subsequent practice with that of colleagues who had not adopted the guidelines.

Methods

The study population consisted of consecutive new attenders referred, either by a general practitioner or from other hospitals or clinics, to eight general medical outpatient clinics situated in the University Hospital of Wales.

Data collection was by the completion of a survey form which asked, of the consultant or his junior medical staff, 15 questions requiring coded or one-word answers. These questions concerned:

- patient identification;
- diagnosis and associated complications;
- consultation details (date, clinic duration, consultant and grade of consulting clinician, and whether consul-

tation was concerned primarily with diagnostic uncertainty or the treatment of a complex disease); and — management details (diagnostic investigations, changes in treatment, planned admission or referral to other consultant, and further appointment or discharge).

Clinic coordinators entered details of patient identification on to the survey form which was then attached to the front of each new patient's notes. The clinician conducting the consultation filled in the remaining sections of the form during and after the consultation and returned it to the clinic coordinator. Forms were collected from the coordinator at the end of each clinic, examined for completeness and then forwarded for data preparation. An interim check at the end of the first six weeks of the study showed that forms had been collected for 93 per cent of patients.

The guidelines (Table 1) were printed on a plastic sheathed card approximately 5 × 3 inches. They were given to the consultants working in clinics 1-4 who then distributed copies to all their junior medical staff. At three-monthly intervals the same staff also received a letter from the study organiser thanking them for their cooperation and stressing the importance of the guidelines, and enclosing summaries of previously published articles calling for more appropriate use of hospital outpatients [5-14]. Although the medical staff in clinics 5-8 were not involved in the development or circulation of the guidelines and were not sent any of the articles on the use of outpatients, they agreed to allow their work to be monitored for purposes of comparison.

Results

A total of 960 consecutive new outpatient attenders were enrolled during the nine-month study. Overall 88 per cent were referred by a general practitioner and the remainder from other clinics and hospitals. This figure showed no significant variation between clinics. Ninety per cent of new attenders were judged to pose diagnostic uncertainty or to have a condition which required complex treatment.

A striking feature was the wide variation in the process

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Table 1. Guidelines for the use of medical outpatients

New patients should normally be seen *once* only and discharged to the care of the referring doctor.

A **follow-up appointment** of new outpatient referrals should only be given in the following circumstances:

- i Diagnostic uncertainty requiring further assessment
- ii Monitoring of *complex* diseases
- iii Serious disease requiring further investigation and treatment by a specialist rather than a general practitioner.

A **further appointment** should not be made simply to give the patient the results of tests. These results, and any advice on treatment or opinion based on these results, can usually be sent to the referring doctor, who can then take any action considered necessary.

Diagnostic tests should only be used if the results will alter a decision. 'Routine' full blood count, ESR, urea and electrolytes, liver function tests, chest x-ray, and ECG are not justified.

Referring doctors should normally be sent information, including the results of tests, within ten days of the outpatient appointment or inpatient discharge. This is particularly important when no outpatient follow-up is planned. If appropriate, the patient should be told that information will be sent to the referring doctor, and should — if appropriate — be advised to contact the referring doctor in approximately a fortnight.

of the consultation in, for example, the proportion of new outpatients seen by a consultant (19 to 90 per cent) and the length of the consultation (Table 2). Eighty different diagnostic procedures were requested during the study, and Table 3 shows the use of the more common of these by clinic. The median number per attender was two, but 24 per cent had none (range 15 to 30 per cent) and a further 14 per cent only one (range 8 to 30 per cent). There were large differences between clinics in the use of 'routine' and less specialised diagnostic tests which were also evident within both the guideline and the comparison clinics.

Overall 38 per cent of patients were discharged after their first attendance but this ranged from 18 to 64 per cent (Table 2). One in ten were put on the waiting list for admission (2 to 19 per cent) and just under one-third of patients had their drug treatment altered. The possible effect of case-mix on inter-clinic variation was studied by conducting the above analysis on a more restricted diagnostic group, namely those whose principal diagnosis was disease of the circulatory system (ICD 390-458). Amongst the 34 per cent of patients in this category

(range 25 to 44 per cent) there was actually an increase in the inter-clinic variation of the management characteristics described above.

In Table 4, two measures, indicative of 'more efficient' practice as recommended in the guidelines, are compared between the guideline and comparison clinics. Firstly, the overall discharge rate from clinics 1-4 was significantly higher than that in clinics 5-8, even though one of the guideline clinics reported the lowest discharge rate amongst all those participating. Secondly, the number of routine diagnostic tests per patient was significantly lower in the guideline compared with the comparison clinics.

Discussion

Some general practitioners will possibly include a full work-up of routine diagnostic tests with their referral letter. Others may wish to manage the patient's condition themselves and use the outpatient consultation simply to establish the diagnosis. Such factors may partly explain the finding that only 40 per cent of new attenders had their treatment altered, that 8.6 per cent of consultations

Table 2. New outpatient attenders — process and outcome of consultation by clinics

Clinic:	1	2	3	4	5	6	7	8	All
Number:	(n = 132)	(n = 99)	(n = 137)	(n = 101)	(n = 72)	(n = 148)	(n = 175)	(n = 96)	(n = 960)
Percentage frequency									
<i>Consultation process</i>									
<i>Purpose:-</i>									
diagnostic uncertainty	78	86	93	75	81	75	74	84	80
complex treatment	17	11	4	8	6	16	5	9	10
Seen by consultant	73	68	57	75	19	49	54	90	61
<i>Length of consultation:</i>									
<10 min	2	2	13	17	4	6	17	3	9
>20 min	90	82	55	49	49	74	55	93	68
<i>Consultation outcome</i>									
Alteration in treatment	43	17	30	30	31	42	32	25	32
Admitted/waiting list	15	13	19	4	5	8	8	2	10
Discharged to GP	40	18	62	64	19	21	27	47	38

Table 3. New outpatient attenders — use of diagnostic procedures by clinic

Clinic: Number:	1 (n = 132)	2 (n = 99)	3 (n = 137)	4 (n = 101)	5 (n = 72)	6 (n = 148)	7 (n = 175)	8 (n = 96)	All (n = 960)
	Percentage having test								
<i>Number of tests</i>									
Two or more	64	63	68	57	71	64	65	40	62
One	13	8	11	22	14	10	10	30	14
None	23	29	21	21	15	26	25	30	24
<i>'Routine' tests</i>									
Urine microscopy and culture	2	3	7	5	22	17	34	6	13
FBC	13	25	20	27	42	35	52	21	30
ESR	11	12	11	14	31	18	40	15	20
U & Es	7	23	13	15	25	22	31	17	19
LFTs	10	17	11	25	13	18	25	16	17
CXR	5	19	17	31	63	32	45	16	28
ECG	8	13	17	35	49	33	35	25	26

Table 4. Outpatient indicators of good practice in clinics adopting and not adopting guidelines

Indicator	Guideline clinics	Non-guideline clinics
Per cent discharged from outpatients	47	28*
Mean number of 'routine' diagnostic tests per patient	1	2*

* $p < 0.001$

lasted less than ten minutes, that 39 per cent of new attenders were not seen by a consultant, and that 24 per cent had no diagnostic investigation and a further 14 per cent had only one. This notwithstanding, the findings question whether every new outpatient attendance recorded in this study was absolutely necessary and suggest that differences between doctors in their perception of the role and function of outpatients might explain some of the quite marked variations.

The present study also offers some evidence to suggest that guidelines might be an effective way of helping to ensure a more appropriate use of routine diagnostic tests and of helping to reduce unnecessary follow-up referrals. The guidelines advised against 'routine' use of full blood count, ESR, urea and electrolytes, chest x-ray, liver function tests and ECG. The four guideline clinics were the lowest users of ESR, and were amongst the five lowest users of urine microscopy and culture, full blood count and chest x-ray. Also, the average number of tests used in the guideline clinics was half that in the control clinics. This is similar to the findings of an earlier study on hospital inpatients when clinical guidelines were introduced into a medical unit in a teaching hospital to promote a more discriminating use of laboratory tests. The mean number of haematological and biochemical tests for each patient decreased by 45 and 39 per cent respectively [15].

The special interest of the consultant was found to have a substantial influence on the choice of investigation irrespective of the nature of the case. For example, a major interest of the consultant in clinic 7, where the highest use of urine microscopy and culture was recorded (34 per cent), was renal disease and hypertension. The lowest use of this test was in clinic 1 (2 per cent) where the principal interest of the consultant was endocrine disease. However, this variation remained (31 per cent compared with 2 per cent) even when all patients with hypertension and renal disease were excluded from the analysis. Likewise, the 14-fold variation in the use of chest x-ray (63 per cent in clinic 5 where the consultant's principal interest was respiratory disease compared with 5 per cent in clinic 1) was virtually unchanged (61 per cent compared with 5 per cent) even when all patients with respiratory disease were removed from the analysis.

The ratio of total to new attenders achieved by clinics 1-4 during the study period was 3:1 compared to 4:1 for the control clinics and 7.8:1 for Wales as a whole [16]. If the 3:1 ratio were to be achieved by all consultant general physicians in Wales, the 1986 general medical outpatient waiting list of 2,947 would be eliminated in three to six months. Recently Fowkes and McPake showed that achieving an average of two attendances per patient across all specialties in England and Wales would halve the present 38 million attendances [3]. This shows the importance of decisions to follow-up or discharge on the outpatient waiting list figures which are much in the news.

The guidelines used in the present study were developed in discussion with the consultant physicians from clinics 1-4 and were also influenced by the results of previous studies comparing general practitioner and hospital follow-up [6,12-14]. They were well accepted by all the junior medical staff. No reports of any concern on the part of the hospital medical staff or the general practitioners about the wording of specific guidelines and no episodes of difficulty in patient care resulting from use of the guidelines were recorded throughout the study period.

The paper demonstrates the acceptability of the guidelines to the consultants and their junior medical staff in clinics 1-4 over a continuous consulting period of nine months. Determining how much of the observed change in practice can be directly attributed to the guidelines is more difficult. A random allocation of medical staff to guideline and non-guideline groups was not feasible; nor were we able to collect data for a true baseline period before introducing the guidelines, because some staff in clinics 1-4 were involved in development of the guidelines and had, we suspected, already begun to adopt some of the guideline practices during the months leading up to the study. This notwithstanding, the magnitude and consistency of many of the differences between the two groups does suggest that the formal adoption of guidelines was associated with measurable, and potentially important, changes in clinical practice.

Higher discharge rates and lower use of routine diagnostic tests were observed in the guideline clinics. Higher discharge rates would lead to an increase in throughput of new attenders and a consequent fall in the outpatient waiting list. Lower test use implies better use of existing diagnostic facilities. Both offer opportunities for improving the efficiency of general medical outpatients. This would, in turn, confer additional clinical benefit by increasing the amount of consulting time available for patients with particularly complicated disorders. Possible professional benefits of returning towards the original concept of the outpatient consultation as a second opinion sought by the general practitioner might be a raising of the status of the outpatient consultation and, as a consequence, improving the job satisfaction and training of

junior hospital staff. We are encouraged by our initial use of these guidelines and recommend their wider implementation and further evaluation.

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