Orthopaedic waiting list reduction through a review of service provision: the problems encountered

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Summary

Measures to eliminate excessive waiting times for orthopaedic outpatient appointments and inpatient treatment were proposed by a Working Party under the chairmanship of Professor R B Duthie. To implement the proposals reliable information is necessary but a survey in a district found that waiting list numbers were inaccurate, activity statistics under represented work levels and there was scepticism about the accuracy of theatre records. With accurate information and use of the proposed methods a service's efficiency should increase, but problems will remain unless measures of outcome, control of input and accident prevention strategies are devised. In the meantime good management of waiting lists will improve the quality and efficiency of a surgical service.

Introduction

The inability to meet demand for orthopaedic services, as measured by the increasing length of waiting lists, has concerned surgeons and public for some time. As far back as 1979 a group of consultant trauma and orthopaedic surgeons, from districts throughout England, met to discuss the reasons for long waiting lists and waiting times in the specialty and to identify whether there was anything further they or their clinical colleagues could do to help reduce them[1]. The seminar participants concluded that a major review of services was needed with the lead taken by the Department of Health and Social Security. This proposal was taken up by the Secretary of State for Social Services who appointed a working party under the chairmanship of Professor R B Duthie to recommend measures to eliminate excessive waiting times for orthopaedic outpatient appointments and inpatient treatment. The report, published in 1981, recommended that waiting lists should be used as measures of demand to allocate resources. These resources could then be used efficiently through imaginative management decisions based on activity statistics. However, the working party appreciated that while more resources were required there was considerable scope to make better use of what was available through improved management practices[2].

For the implementation of the suggested schemes an assessment of a department's information gathering systems is an important first step. This paper describes a review of the reliability and validity of information available in a department for management decision making and the difficulties of using this information to implement some of the suggestions of the Duthie working party.

Method

Waiting list information is prone to error and to assess this *ad hoc* studies of outpatient and inpatient lists were undertaken. Clerks collected, over a 2 month period, details of those who attended or should have attended for their first out-patient appointment and the length of time waited measured from the day of receipt of the general practitioner's request to the day of the consultation. Inpatient waiting list accuracy was measured by writing to patients listed in a card index file. Before the survey, advice was sought on the wording of a letter and possible patient reaction. The most important point to emerge was the need to review the case notes of patients who said they no longer wanted treatment so as to limit the risk of some returning at a later date with worsened conditions. Patients were asked if they still wanted treatment, to say why if treatment was not wanted, and to estimate how much warning was needed before being able to enter hospital. Second and third follow-up letters were sent and finally general practitioners were asked to help trace those patients who failed to reply.

The level of clinical activity in a specialty can be estimated from the district Hospital Activity Analysis (to be replaced in 1988 by Körner District Information Systems[3]). The completeness of the study district's HAA information for orthopaedic surgery was estimated by comparing the numbers of three operations: total hip relacement, median nerve decompression and hemi arthroplasties using Austin Moore protheses; listed in theatre registers and computer file.

Little routine information of value was available about theatre use (although this will change with the implementation of Körner minimum data sets) and therefore a number of *ad hoc* studies were undertaken to record the mix of cases and use of theatre time.

Finally the information collected from the investigations was applied to methods suggested by the Duthie working party to improve the management of resources and use of facilities. These methods were agreed to by the District Management Team, as it was then called, and the surgeons.

Results

The population of Maidstone Health Authority is 192 000 and 80% of the 1206 patients receiving orthopaedic care during the year of the study were treated in the district's hospitals. For many, treatment followed a wait on an out- and inpatient list.

Amongst outpatient attenders the ratio of total to new patients remained at a constant 3.9 to 1 over a 5-year period despite waiting times fluctuating between 11 to

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36 weeks. At the time of the study the average waiting period was 40 weeks, but this time concealed the fact that 30% of 71 patients attending during a one month *ad hoc* survey were seen within 13 weeks and a further 53% within 36 weeks. Ten patients, of whom 6 had waited between 36 weeks and one year, did not attend.

After an outpatient consultation patients may be placed on an inpatient waiting list. The inpatient waiting list recorded 703 names, with 68% wanting operations and 17% deciding against treatment. Five per cent of patients on the list had already been treated and amongst the non-responders, 5% had moved out of the district, 4% could not be traced and 1% had died. Reasons for long delays for treatment included deferment by the hospital, episodes of illness, postponements by patients for holidays and business commitments.

Estimating activity in hospitals was difficult for Hospital Activity Analysis statistics under-represent work loads. Only 40% of 58 known total hip replacements, 62% of 29 operations for median nerve decompression and 72% of 36 hemi-arthroplasties using Austin Moore prostheses were recorded on computer file. Hospital theatre registers were also inaccurate for 7% of the above, operations were absent from the register, but were recorded on computer file. Overall 276 of 1206 orthopaedic deaths and discharges recorded for the year lacked clinical details recorded on Hospital Activity files.

Studies on theatre use showed that during the survey period at one site 10 (25%) of theatre lists lasted less than the scheduled time. Forty-two different procedures were undertaken with 57% lasting under one hour from the time patients were placed on the theatre table to their exit to the recovery room. The delay between the end of one operation and the start of another ranged between 5 and 15 minutes for 60% of cases and 15 and 30 minutes for the remainder.

Application of the methods suggested by the Duthie working party revealed that considerable additional resources were needed to meet demand as indicated by the length of the waiting list. Resources of the magnitude indicated could not be provided and a more realistic assessment was to argue for an additional theatre list with a few extra beds. A worked example, using Duthie's methods, showed that these additional resources should increase patient throughput by 105 in one year, (an increase of 9% on the 1206 patients admitted during the study), if working practices and the case composition of theatre lists was unchanged. However, with changes in working practice, such as reducing turnover intervals in the unit reserved for 'routine and booked' admissions, admitting 2 or 3 more patients a week whose stay was likely to be 4 days or less, and adjusting theatre lists so that there was a mix of cases requiring different amounts of theatre time, the 105 patients could be accommodated without extra resources apart from a small rise in marginal costs for equipment and hotel services.

Discussion

The Duthie working party argued that more resources are needed by trauma and orthopaedic surgery to reduce the length of waiting lists but that it was neither reasonable nor equitable to do this until it was demonstrated that available facilities were used with maximum possible efficiency[2]. To improve efficiency they suggested changes in the management of waiting lists, theatre list organization, the use of theatre time, and the deployment of beds and staff. For their methods to work good quality information is required and it was the aim of this paper to outline some of the steps taken and difficulties encountered in attempting to provide it. Many of the information gaps found in this study should be filled once the Körner working group's minimum data sets are in use, but there is no guarantee that this data will be accurate and complete[3]. One simple step to help ensure complete data is for surgeons to be interested in data processing and to compare at intervals clinical activity recorded by hospital computer files and that listed in the theatre register for a number of marker operations.

Körner systems will identify numbers of outpatients who do not attend and enable clinicians to monitor patient flow through clinics. Questions can then be asked about why patients don't attend and whether changes in clinic management could improve attendance rates and throughput. Often patients don't attend because waiting time is too long, trivial conditions have resolved before the appointment date, the appointment is at an inconvenient time or alternative treatment has been sought.

Inpatient waiting lists have been suggested as indicators for resource need but this use is debatable[5]. An advantage of the approach is that it enables demand for and supply of services to be monitored, but there are several disadvantages. First, to give prominence to the length of waiting lists as a measure of demand is misleading for more important is the length of time people wait for treatment. Second, lists can be used as political levers to obtain more resources for what may be inefficient practice. Finally resource requirement, as determined through waiting list length, may become quite unrealistic in terms of a Health Authority budget.

Waiting lists may be doubtful markers for demand, but they provide an insight into the organization of a service. In this study the ratio of total outpatient attendances to new had remained at 3.9 to 1 and it appears that to maintain this ratio waiting times have had to increase. As there is no overriding reason for this ratio there is the implication that outpatient clinics are controlled by clinical preference and administrative procedures rather than demand from patients. The review of the inpatient waiting list illustrates the unreliable nature of information available on list size. Inaccurate lists are potential wasters of valuable bed space and theatre time as non-existent patients are booked into beds and those who no longer wish treatment do not attend.

Reliable information about theatre use was difficult to obtain and that presented from *ad hoc* studies was challenged, for it was felt that work levels were grossly under-represented. This may be so, but it is also possible that perceptions about efficient time use were misplaced too.

Körner data sets should help reduce time wasting confrontations about data quality and provide information for the efficient management of an orthopaedic service and in conjunction with the Duthie working party's methods should help to improve the efficiency of a service. But improved efficiency is not synonymous with reduced costs for once a service is operating at full capacity additional facilities to meet increasing demand and need will lead to greater marginal costs. It is these costs which should be met by additional Government funding.

Finally the major flaw with the Duthie proposals, and most studies to improve service provision including this one, is that efforts are directed towards process and output with little attention given to measures of outcome, control of input and accident prevention strategies. Demand and need have no limit and will rise with public expectations as orthopaedic techniques advance and tolerance for pain and deformity decreases. Until such time as there are acceptable measures of outcome, good waiting list management will help provide a more efficient surgical service. Good management should include a computer or well maintained index card devised waiting list. Where there is a card system information must be legible. In addition to patients' names, addresses, general practitioner, and condition, there should be information about anticipated theatre time use, length of hospital stay and whether the patient is able to attend hospital within 24 hours of notice or requires ample fore-warning due to business commitments. These lists should be reviewed regularly by consultants, junior medical staff and managers with a view to identifying problem areas where changes in practice may improve use of facilities. One may also argue that once doctors and managers are sure their systems are working as well as possible, they will be justified in asking patients who don't turn up to contribute towards the cost of wasted resources.

References

1 Harrogate Seminar Report 5. *Organising orthopaedic services.* London: DHSS, 1980
2 Department of Health and Social Security. *Orthopaedic Services: waiting time for out-patient appointments and in-patient treatment.* Report of a Working Party to the Secretary of State for Social Services. London: HMSO, 1981
3 Steering Group on Health Service Information. *First Report to the Secretary of State.* London: HMSO, 1982
4 Yates J. In-patient waiting list statistics: inaccurate or misleading? In: *Waiting for hospital treatment.* London: DHSS, 1980
5 Scott-Samuel A. Waiting lists and unmet need. *Public Health* 1979;**93**:46-9

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