

Clearing the Cataract Backlog in a (Not So) Developing Country

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Summary

There is a significant backlog of patients waiting for cataract operations in the United Kingdom. In England in the first quarter of 1989, there were 74,000 patients in total on ophthalmology waiting lists, of which approximately 75% were cataract cases. Although there is currently a significant shortfall of around 225 consultant ophthalmologists, as defined by the College of Ophthalmologists' standard, the backlog is also due to the imbalance in, and inefficient use of, resources. There are a number of possible ways of clearing the backlog, including local initiatives, contracting for clinical services and the expansion of day-case surgery, which has been shown to be a cost-effective alternative to in-patient surgery. However, not only are reorganisations in the provision of surgical services required, managerial initiatives also need to be taken.

Cataract is a major cause of blindness worldwide. However, whereas in the developing world special initiatives to clear the cataract backlog, such as 'eye camps' are commonplace, it is typically assumed that in the developed world open access to surgery exists. In some countries such as the USA this may be the case, although there may be variations in access by geographical area or socio-economic status. However, in other developed countries, such as the United Kingdom, there is a backlog of significant proportions.

In the United Kingdom the majority of the population receive health care through the National Health Service (NHS), although there is also a small private health care sector. The revenue for the NHS is raised in the main through general taxation, and local District Health Authorities (DHAs) then receive funds to give access to care for a defined resident population. However, an individual with

advanced lens opacity could experience long waiting times after being referred to a specialist by his or her general practitioner. Long waits are often experienced both for an outpatient appointment and for in-patient admission. 'Waiting lists' therefore operate as rationing devices even though, in principle at least, there is open access to care.

Given the growing concern about the cataract backlog in the UK, this paper addresses the following issues:

- what is the size of the backlog and is it growing?
- what are the reasons for the backlog?
- what initiatives, including the expansion of day case surgery, could be taken to reduce the backlog?

Size of the Backlog

The most important measure of the backlog is

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the ophthalmology in-patient waiting list. Figure 1 shows the number of patients waiting in each year over the period 1975 to 1989 in England. It can be seen that the total number of individuals on waiting lists has increased over this period, with 74,000 patients waiting in the first quarter of 1989. Moreover, the number of cases waiting over one year has also increased, rising to 12,500 in 1989.

Another indication of the growth of ophthalmology waiting lists is that whereas while in 1976 ophthalmology lists represented only 6% of all patients waiting for treatment in England, in 1989 they represented around 10% of all patients. Of course not all the patients on ophthalmology waiting lists have cataract. However, cataract does represent a significant proportion of all cases. Surveys in the West Midlands and Wales¹ and the Northern Region² have found that approximately 75% of the patients on ophthalmology lists are cataract cases.

The situation in out-patient departments is not much better. Although national statistics are not readily available, a survey by the British Medical Association³ showed that the average waiting time for a first out-patient appointment was in excess of 15 weeks in England. Indeed, in 25% of all Districts the average waiting time exceeded 20 weeks. There has not been a more recent national survey. However, a survey undertaken in the largest English region, the West Midlands, in 1986 showed a deterioration in the average waiting time from 22 weeks (1984) to 32 weeks.⁴

In short, patients in the NHS frequently have to wait a number of weeks to receive

confirmation from an ophthalmologist that they are in need of cataract extraction. Then they face the probability of a long wait for surgery. Whilst not as large as the backlog in some developing countries, the cataract backlog in the United Kingdom is significant.

Reasons for the Backlog

It is well known that operating rates (per 1000 population) are lower in the United Kingdom than other Western European and North American countries. For example, McPherson *et al.*⁵ reported age and sex standardised operating rates per 100,000 population for operations on the lens. They showed that English regions varied from 46 to 96 per 100,000 population per annum, compared with 76 to 161 for Canadian Provinces and 154 to 242 for geographical regions of the USA. If the low operating rates in the UK result in a significant backlog, what is their cause? Three possible explanations are discussed: shortage of resources; imbalance of resources and; inefficiency in the use of resources.

Shortage of Resources

A key resource is the medical manpower to perform the surgical operations. The College of Ophthalmologists⁶ has suggested a minimum standard of one consultant ophthalmologist per 80,000 population for a district general hospital service. (The standard for a teaching hospital district is one per 70,000 population, to allow for teaching and research duties). For England, with a population of approximately 50 million, this would imply a complement of, around 625 consultant ophthalmologists. England currently has approximately 400 whole-time equivalent consultants, a significant shortfall as defined by the standard.

To some extent this shortfall can be ameliorated by the provision of other medical and non-medical staff. However, most ophthalmologists consider that cataract surgery, especially extra-capsular cataract extraction with intraocular lens implant, requires a fully trained surgeon.

Imbalance of Resources

Even in those localities where trained medical manpower is in good supply, the lack of

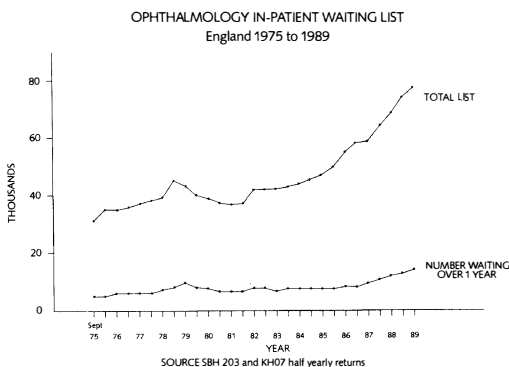


Fig. 1.

adequate support services may reduce operating rates. For example, lack of theatre time, trained theatre staff, anaesthetists or beds severely restrict a surgeon's operating potential. It has been shown that the distribution of beds and other key resources varies from District to District and that there is little correlation between medical manpower and the availability of such support services.⁷

Therefore, whereas the *total allocation* of resources for cataract surgery in the UK may not be as serious as the backlog suggests, the *distribution* of those resources may seriously hamper efforts to reduce the backlog. A key question is whether, in Districts having adequate ophthalmologist staffing, shortage of theatre time or beds acts as a constraint on operating rates. This issue has not been comprehensively explored.

Inefficient use of Resources

Clearly an imbalance of resources may force clinicians to behave inefficiently, even when their instincts are to do otherwise. However, it is also important to investigate whether the resources that are provided are being used to the maximum potential. Figure 2 shows all operations per annum by consultant firm in one English region in 1985. The mean figure, of approximately 275 operations per annum, is lower than one might expect. The College of Ophthalmologists suggests that each firm should have two operating sessions per week.

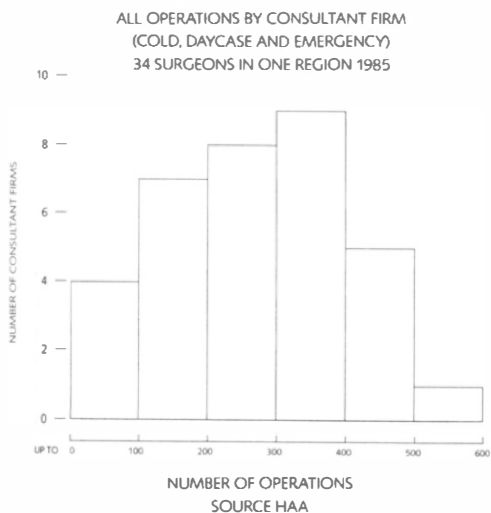


Fig. 2.

Assuming an average list size of 4–5 and only a 40-week year this would give 320–400 operations per annum.

Some would argue that the mean figure is low when compared with other surgical specialties, most of which have three operating sessions per week and would be expected to undertake, on average, over 1,000 operations per year.⁸ One argument for restricting operating sessions in ophthalmology is the relatively high out-patient workload. However, in considering the data in Figure 2, one is also struck by the range of operating rates, with four firms performing fewer than 100 operations per annum, and one performing more than 500.

The range in operating rates can partly be explained by level of resource input, casemix, age of patients and socio-economic characteristics of the local District population. For example, Figure 3 shows that a slightly higher proportion of consultant firms with relatively high operating rates had senior registrar support. These data do not provide *prima facie* evidence that some firms are more inefficient than others. Indeed, the quality of care, or range of responsibilities, of surgeons with low apparent workload may be higher. However, such large differentials are hard to explain and more investigation is required.

Ways of Clearing the Backlog

The data presented above demonstrate that,

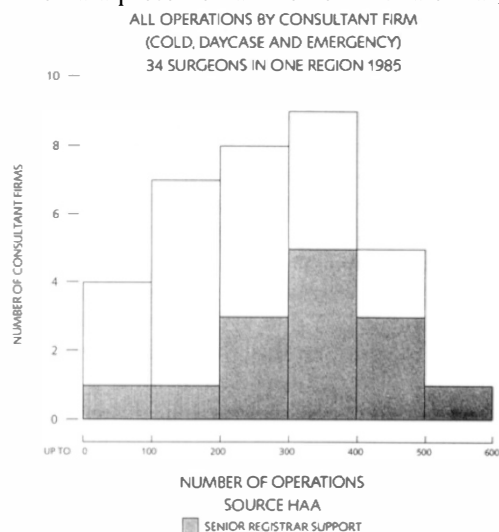


Fig. 3.

for whatever reasons, the demand for cataract surgery in the UK is outstripping the supply. What can be done, therefore? Several initiatives have already been taken at local and national levels. Others, such as an expansion in day case surgery, could make a contribution. These are discussed below.

Local Initiatives

Several health authorities have tackled their waiting list problem for cataract in various ways. One of the most unorthodox, and most well known, is 'Operation Cataract'. Initially undertaken in Worthing Health Authority, in partnership with the Impact Foundation, this involved arranging the pre-operative and post-operative care of patients to be carried out in a local hotel. Together with changes in the organisation of surgical services, this enabled 100 patients to be treated in a five-day period.⁹ The cost per operation (£540) was found to compare favourably with that in the NHS (£680) and in a private hospital (£1,500).

This experiment has now been repeated in Canterbury and Thanet H.A.¹⁰ The large throughput of patients halved the waiting list for cataract operations in the District concerned and 37 patients who had been waiting longer than one year were operated on. Using the hotel increased the bed capacity in the ward from 115 nights to over 400 nights. Overall, the scheme represented an intermediate stage between day care procedures and traditional NHS treatment.

A postal survey of patients indicated a high degree of satisfaction with the approach. Coupled with the lower cost, it appears to have significant advantages in locations where bed supply is the major constraint, provided that long-term complications are not significantly greater. However, it is harder to assess the contribution of schemes like 'Operation Cataract' in Districts not having a bed constraint. It may be that even in such Districts the novelty and enthusiasm surrounding the initiative may themselves encourage higher operating rates, albeit over a short period.

Contracting for Clinical Services

Under the terms of the recent White Paper 'Working for Patients',¹¹ the 'purchaser' role of District Health Authorities will be separ-

ated from the 'provider' role. In order to meet the health care needs for their population, DHAs will place contracts for clinical services with their own directly-managed Units, self-governing NHS trusts and private hospitals. Those general practices that opt to become 'fund-holding' will also be able to place contracts for certain elective procedures and investigations.

It is likely that these arrangements, if fully implemented, will have a profound effect on the functioning of the NHS and the incentives faced by the key decision makers, such as hospital managers, consultants and general practitioners. A particular implication is that provider units, rather than working to a fixed budget, will be able to receive additional revenue in relation to the workload achieved. Whether this will lead to more cataract operations being performed is currently unclear. However, in principle it means that the *financial* constraints imposed upon higher workloads will be removed, although of course the total amount of monies available for NHS Services will not necessarily be increased in real terms. Another major unknown is the priority fund-holding general practitioners will give to referrals for elective procedures like cataract.

Expansion of Day-case Surgery

Day case surgery for cataract has been practised in the UK for a number of years and has been shown to be equivalent to in-patient surgery, in terms of visual acuity and complication rates, in randomised controlled trials.¹² However, data from English Districts (Figure 4) show that these vary greatly in the percentage of day admissions, with some having more than 40%, others none. These data need to be treated with caution, since the recording, by Districts, of day case work is known to be deficient and procedures undertaken on a purely outpatient basis do not appear in the statistics. However, there is no doubt that Districts vary greatly in the amount of day case work actually undertaken.

The expansion of day case surgery could make a contribution to clearing the cataract backlog in two ways. First, in districts where beds are a constraint on the overall ophthalmology caseload, the possibility of perfor-

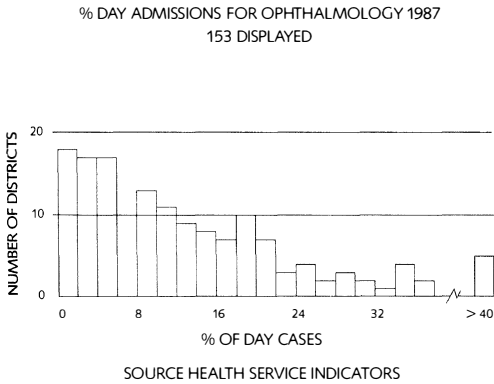


Fig. 4.

ming operations without admitting the patient for an in-patient stay would enable more operations to be performed. Secondly, if day case surgery were more cost-effective than traditional in-patient surgery, resource savings could be redeployed to enable more operations to be performed. The extent to which shortage of beds operates as a constraint in ophthalmology is far from clear. For example, data from English Districts in 1986 show that the average bed occupancy rate for ophthalmology is only 60% and the average turnover interval 3.44 days.¹³

However, there is evidence on the relative costs of day case (out-patient) surgery compared with in-patient surgery. For example, Wall *et al.*,¹⁴ showed that out-patient post-operative care was approximately 40% of the cost of in-patient post-operative care when only costs to the health service were considered. When costs to patient and family were considered, out-patient post-operative care was still only 50% of the cost of the in-patient alternative (see Table I).

Most of the difference in cost was, of course, due to costs of keeping a patient in a hospital bed, rather than them recuperating at home. The key issue, therefore, is whether resources could be released if, through the expansion of day case surgery, fewer beds were required for cataract patients. At one extreme the savings could be minimal, if the beds are left unoccupied, or the length of stay of other patients increases. Indeed, if more patients in total are treated, then overall expenditure could rise. Under the current NHS funding arrangements this represents a

problem as the budget could be exceeded. However, under the new contracting arrangements described above those units undertaking more work would receive more revenue.

The key to the contribution of day case surgery to reducing the cataract backlog rests in the actions that clinicians and managers take following its introduction. On the one hand, more cases in total could be processed, thereby bringing in more revenue to the unit. This increased revenue could then be used to increase operating rates, by making more support staff and theatre time available. On the other hand, beds previously allocated to ophthalmology could either be transferred to other specialties or closed, in which case there should also be finance available to increase ophthalmology operating rates. Thus, an expansion of day case surgery will not, of itself, reduce the cataract backlog. It needs to be accompanied by other managerial initiatives, undertaken with the support and agreement of clinical staff, if it is going to have an impact.

Finally, consideration would need to be given to the social circumstances of patients and the amount of support required in the home, from informal carers and statutory services. Clearly, it will never be possible to treat all patients on a day-case or outpatient basis.

Conclusion

There is a significant and growing cataract backlog in the United Kingdom, with the demand for surgery outstripping the supply. A number of possible reasons for the backlog have been explored. It is likely that the backlog results from a mixture of shortage, imbalance and inefficiency in the use of resources, although more investigation is required.

Table I Comparative costs of post-operative care for cataract surgery (1984 Canadian \$)

	In-patient stay	Overnight stay	Out-patient care
Cost to health service	615	333	232
Costs to patient and family	34	68	102
Total	649	401	333

Source: Wall *et al.*, 1990

A number of ways of reducing the backlog have been explored. It is clear that not only are reorganisations in the provision of surgical services required, managerial initiatives also need to be taken. The changes in funding recently proposed by the government, where provider units undertaking more work will receive more funds, may have a significant impact on the nature and volume of elective operations like cataract. It is likely that day case surgery will be expanded as a result of the new funding arrangements.

An earlier version of this paper was presented in a symposium on day case surgery at the Annual Congress of the College of Ophthalmologists in April 1990.

We are grateful to Mr B. A. Noble for constructive comments, to the National Eye Institute (Bethesda, USA) and English Regional Health Authorities for funding, and to Vanessa Windass and Kate Wood for secretarial assistance. Any remaining errors are our responsibility.

Key words: cataract, efficiency, waiting lists

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