NAO
NATIONAL AUDIT OFFICE

Report by the
Comptroller and Auditor General

Scottish Office Department
of Health

Cataract Surgery in Scotland

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Contents

Cover photograph: Ophthalmology and Medical Illustration Departments of St. John's Hospital, West Lothian NHS Trust, Livingston.

Executive summary

Increasing day surgery

1 In 1992, the Scottish Office Department of Health commended to the NHS in Scotland an aim of having 80% of cataract operations done as day surgery by the end of 1997, in order to save around £1.9 million and provide a better service for patients. Only one out of 17 trusts where ophthalmic surgery is carried out will reach this level and six trusts carry out less than 25% of their workload as day cases. This report looks at the NHS' progress in reaching 80% day surgery, constraints on progress and the potential benefits of more day surgery.

2 Cataract surgery is one of the commonest procedures carried out in the NHS and one of the most effective, with most patients reporting an immediate and dramatic improvement in their sight. The operation takes around 20 minutes and can be done under local anaesthetic, making it ideal for day surgery and cheaper than in patient treatment. The NHS in Scotland spent £13 million on cataract operations in the last year.

3 The National Audit Office estimate the available savings from increasing cataract surgery to 80% is **¼1.47 million**. There are other associated benefits from increasing day surgery: length of stay for inpatients tends to shorten as day case surgery increases; high day case levels are linked to high surgical throughput and patients tend to have fewer outpatient appointments.

4 The non financial benefits include the fact that most patients prefer day surgery provided they get good, full information. The National Audit Office found widely reported evidence that results from day case cataract surgery are as good as for inpatient treatment. Surgeons at all trusts visited confirmed to the National Audit Office that there is no difference in outcome between day case cataract surgery and inpatient treatment. However, the National Audit Office found that boards and trusts are not monitoring outcomes systematically as recommended by the Department.

5 The main constraints on increasing day surgery levels are consultants' attitudes to day surgery; long travelling distances for patients; patients' home circumstances and patient choice. There is action which trusts can take to tackle some of these problems. The National Audit Office found that the 17 trusts visited, treated only 32% of the patients living near the hospitals as day cases. Some trusts have taken innovative approaches, including: offering outreach clinics; developing

patient hostels and offering a patient taxi service. The National Audit Office found that the key determinant for high day case levels is a consultant team committed to the concept and practice of day surgery.

6 The proper assessment of patients so that those suitable for day surgery are selected is crucial to its success. The assessment is carried out by ophthalmic nurses who are in short supply in some hospitals.

Variation in treatment rates across Scotland

7 There are significant geographical variations in treatment rates for cataract surgery across Scotland, with Tayside Health Board 41% above the Scottish average and Borders 82% above, once treatment rates are adjusted for demographic factors. These differences are reflected in treatment rates analysed to local government district. The National Audit Office found that these differences reflect varying referral practice, with few GPs using explicit referral criteria agreed with the local hospital. This suggests that patients of similar clinical priority may have different chances of being referred and treated in different parts of Scotland.

Recommendations

8 The National Audit Office recommends that on increasing day surgery:

The **Scottish Office Department of Health** should:

- discuss progress in day surgery with boards as part of the performance management process;
- examine whether more could be done at national level to implement the working group's proposals made in 1993 on ophthalmic nurse training.

Health boards should:

- set clear day case targets for cataract surgery in agreement with providers and clinicians;
- discuss with trusts the local barriers to more day surgery and means to overcome them.

GPs could act to increase day surgery levels by:

- discussing with providers increasing levels of day surgery for suitable patients;
- identifying in referral letters patients whom they consider to be suitable for day surgery.

Trusts should:

- appoint consultants with the appropriate level of expertise, who want to carry out surgery on a day basis and discuss with those who feel that it is too risky for patients, ways of addressing the perceived problems;
- consider the different options like outreach clinics; use different transport arrangements which are practical locally and take steps to implement them;
- develop nurse led pre-assessment clinics further, so that all patients who are listed for cataract surgery are pre-assessed;
- take every opportunity to share best practice by formal and informal mechanisms, like benchmarking clubs;
- ensure patients and GPs have clear information about surgery and contact numbers in case of emergency;
- reduce bed numbers as appropriate and as far as is possible as day case levels rise.

The National Audit Office recommends that on variations in treatment rates and referral patterns:

Health boards should:

- draw on the available published information on the incidence of cataract and carrying out needs assessment to inform purchasing decisions;
- review treatment rates, for example, by local government district and take action where indicated where treatment rates are inconsistent with the rest of the health board area;

- develop local referral guidelines in co-operation with surgeons and GPs, and including an element of continuing education as in Grampian;

- provide comparative information on cataract treatment rates by GP practice so that GPs can assess whether they need to adjust their referral approaches.

In addition, the **Scottish Office Department of Health** should:

- consider the practicalities of standardising more closely what to include in the over 75s health check as recommended in the 1994 report **Health Promotion and Screening in Opthalmology**;

- examine what action could be taken on the 1993 proposals about GP education in ophthalmology.

The National Audit Office recommends that on realising the potential savings from increasing day surgery and other benefits:

- the **Department, health boards and trusts** take action to realise the potential financial savings from increasing day surgery;

- **trusts** consider ways to achieve the benefits which can spin off from increasing day surgery: including fewer outpatient appointments, shorter length of inpatient stay and higher surgical throughput;

- **trusts** still at an early stage of expanding day surgery consider applying the approaches described in paragraph 2.29 and Box C to preparing information leaflets;

- **purchasers** consider whether a detailed quality specification such as that described in Box E, could be used in NHS hospitals;

- **health boards** commission surveys to measure the patients' quality of life as recommended in **Information and Outcomes in Ophthalmology**;

- **The Scottish Office Department of Health's** Clinical Resource and Audit Group consider the practicalities of collecting and publishing the first two outcomes recommended in **Information and Outcomes in Ophthalmology**;

- **The Scottish Office Department of Health** should consider inviting the Scottish Intercollegiate Guideline Network to produce clinical guidelines for the provision of cataract surgery.

Part 1: Background

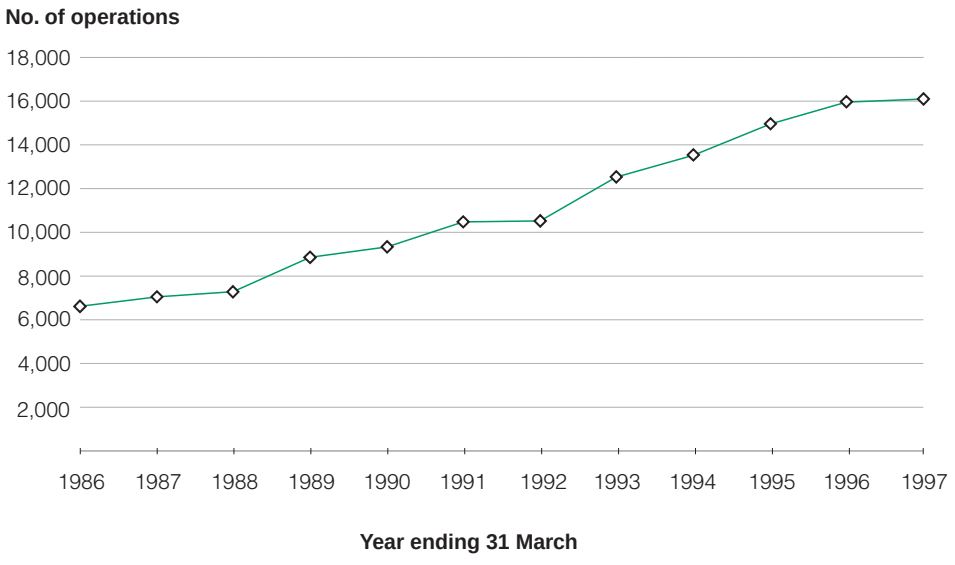
Introduction

1.1 This section of the report describes what cataract surgery is; the policy, aims and objectives of the Scottish Office Department of Health and why the National Audit Office decided to examine this area of activity.

1.2 Cataract surgery is one of the most common surgical procedures carried out in the NHS. Around 16,000 operations were carried out in Scotland last year at a cost of £13 million (see figure 1). The numbers of people having this operation have been rising at a rate of 8 to 9% per year. In addition, cataract surgery is one of the most effective procedures carried out in the NHS: most of those having surgery notice an immediate, and in some cases, dramatic improvement in their vision. The surgical procedure involved in the operation is the same whether or not the patient goes home on the same day (a day case) or stays in longer (an inpatient).

Figure 1

Increase in Scottish cataract operations over 11 years



Source: ISD

Figure 1 shows that the number of cataract operations undertaken annually in Scotland has increased by 140% in 11 years.

Figure 2

Effects of cataract on vision

The Forth railway Bridge as seen by someone with normal vision.

This view of the bridge shows the colour shift suffered by some people with cataract.

The bridge seen by someone with vision just below driving standard (visual acuity of 6/12).

The bridge as seen by someone with cataract.

The entrance to St. John's Hospital, West Lothian as seen by someone with normal vision.

The entrance to St. John's Hospital, West Lothian as seen by someone with cataract.

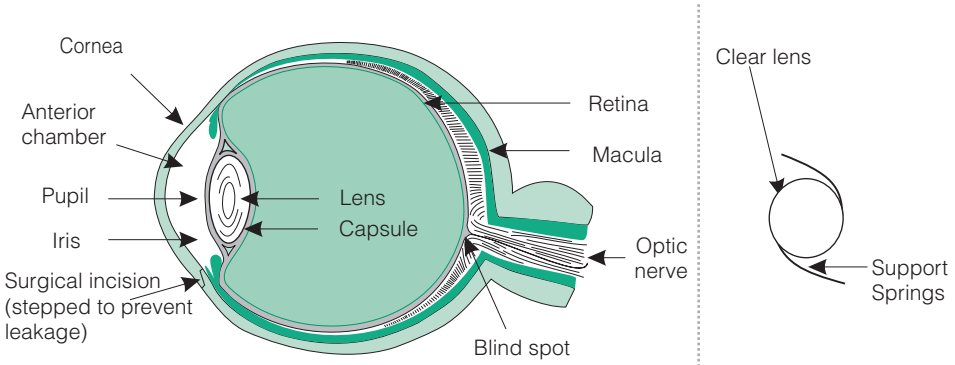
Source: These photographs were kindly provided by the Opthalmology and Medical Illustration Departments of St. John's Hospital, West Lothian NHS Trust, Livingston.

Treatment of cataract

1.3 A cataract is a clouding of the lens in the eye, so that light does not pass through the lens as before and is scattered. This means that a person with a cataract cannot see clearly. Figure 2 shows the effect of cataract on vision. There is no cure for this condition other than by surgery. The causes of this condition are not well understood, but it is much more common in old people rather than young. The surgery consists of removing the cloudy lens and replacing it with an artificial lens implant. The operation takes around 15 to 20 minutes when done by a skilled ophthalmologist and is commonly done now under local anaesthetic. The mechanics of the operation are explained in figure 3.

The mechanics of cataract surgery

Figure 3



The human eye **The replacement lens**

The nurse inserts eye drops to open the pupil to its full extent in the period before surgery. The surgeon replaces the cloudy lens with a clear implant by:

- making a small incision through the cornea into the anterior chamber of the eye;
- cutting out part of the anterior surface of the capsule and removing it through the pupil and the incision;
- taking the lens out of the capsule and removing it through the pupil and the incision;
- inserting the replacement lens into the capsule through the incision and the pupil, fixing it in place by its small support springs.

With whole lens extraction, the surgeon removes the lens through a 10mm incision, closed after surgery with stitches. The replacement lens is made of rigid plastic.

With phacoemulsification, the surgeon uses a vibrating hollow suction tool to break up the lens and remove it piecemeal through a 3mm incision requiring no stitches. The replacement lens is made of foldable silicon to fit through the smaller incision.

The expansion of day surgery

1.4 The Royal College of Surgeons of England defines a day case as:

> a patient who is admitted for investigation or operation on a planned, non-resident basis and who nonetheless requires facilities for recovery[1].

1.5 Day surgery offers the patient various advantages including minimal disruption to their ordinary routine; treatment by a skilled and experienced practitioner, since day case surgery is normally a consultant led service; and often shorter waiting times. It also means savings in resources, as patients do not have to stay overnight although it may mean that GPs and the community sector have their work increased. There have been several reports in recent years advocating the general expansion of day surgery. The first was published in 1990 by the Audit Commission, called **A Short Cut to Better Services : Day Surgery in England & Wales**. Cataract surgery is ideally suited for day surgery. The procedure is short; it can be done under local anaesthetic which minimises recovery time and patients who need this procedure are very often otherwise fit and well, although usually elderly.

1.6 The Scottish Office Audit Unit applied the methodology of the Audit Commission's report in 1992[2] and examined progress in introducing day surgery across the basket of 20 procedures used in the Commission's report in 1991. The Scottish Office Audit Unit were at that time, responsible for audit of the NHS in Scotland. This responsibility has now passed to the Accounts Commission for Scotland. The results showed that day case work amounted to 20% of surgical admissions, but that there were wide variations in the levels achieved in different hospitals across all procedures. This led to the NHS Management Executive in Scotland setting targets for day surgery in an Executive Letter to the NHS which trusts were invited to adopt.

1.7 In 1997, the Accounts Commission for Scotland in their report **Better by the Day?**[4] examined progress against those targets and found that progress has been generally good, but there are still significant variations between the levels achieved by different trusts across all procedures, including cataracts. They recommended that targets be raised in order to improve performance further.

Departmental policy, aims and objectives

1.8 The underlying policy for the NHS in Scotland was laid down in SHARPEN: **Scottish Health Authorities Review of Priorities for the Eighties and Nineties**, published in 1988[5], which sets out guidelines for the planning of services for all groups in the population. The guidelines set out in SHARPEN have been elaborated upon and developed in the annual Priorities and Planning Guidance which each year sets out the priorities for the NHS in Scotland. In terms of services for elderly people, SHARPEN sets out various recommendations, including the following:

- health care and support services should be provided with the aim of enabling old people to lead independent lives in their own homes for as long as possible;
- service agencies must plan ahead now for services of all kinds for elderly people whose numbers are forecast to increase significantly over the coming period;
- acute hospital services related to sight should have priority for development in the acute sector.

1.9 The provision of an efficient and effective cataract service plays a key part in helping to fulfil these aims. In order to aid the efficient management of the cataract service, the Scottish Health Service Advisory Council appointed a multi disciplinary working group in 1990 to identify and recommend good practice and appropriate systems for the management of ophthalmological services in Scotland.

1.10 Their report, **Day Case Surgery for Cataract** was published in November 1992[6] and made the following recommendation:

- that steps be taken immediately to effect the introduction and development of day case surgery for cataract in all ophthalmology units, with a view to carrying out 30% of cataract operations by the end of 1993 rising to 80% by the end of 1997.

1.11 The report pointed out that cataract makes the greatest demand on ophthalmology departments and that demands would continue to grow. The working group asserted that there was some unmet need in the Scottish population although the extent was difficult to quantify. In addition, day case surgery had been slow to develop in Scotland in comparison to some European countries and the USA. By increasing cataract day case surgery to 80%, the NHS could save

£1.9 million. (The question of potential savings is explored in Part 3 of this report.) The working group acknowledged that there could be local variation from 80% due to differing levels of social deprivation.

Implementation of the Scottish Health Service Advisory Council report

1.12 The report was commended to the Department by the working group. The Chief Executive of the NHS in Scotland invited health boards and trusts to take its recommendations on board when planning ophthalmology services. Cataract surgery is not, however, an explicit priority area for the NHS; the three clinical priorities in 1996-97 are mental health; coronary heart disease and stroke and cancer laid down in the Priorities & Planning Guidance for the NHS[7].

1.13 Once the Management Executive publicised the Scottish Health Services Advisory Council's report, the initiative then rested with health boards and GP fundholders to purchase more day surgery from provider trusts. In trusts, the change in service provision from inpatient treatment to day surgery had to be brought about by the consultant ophthalmologists, who, as senior medical staff, are the key arbiters of what treatment is provided for patients. Figure 4 shows how pressure can be brought to bear at different points in the NHS to increase day surgery.

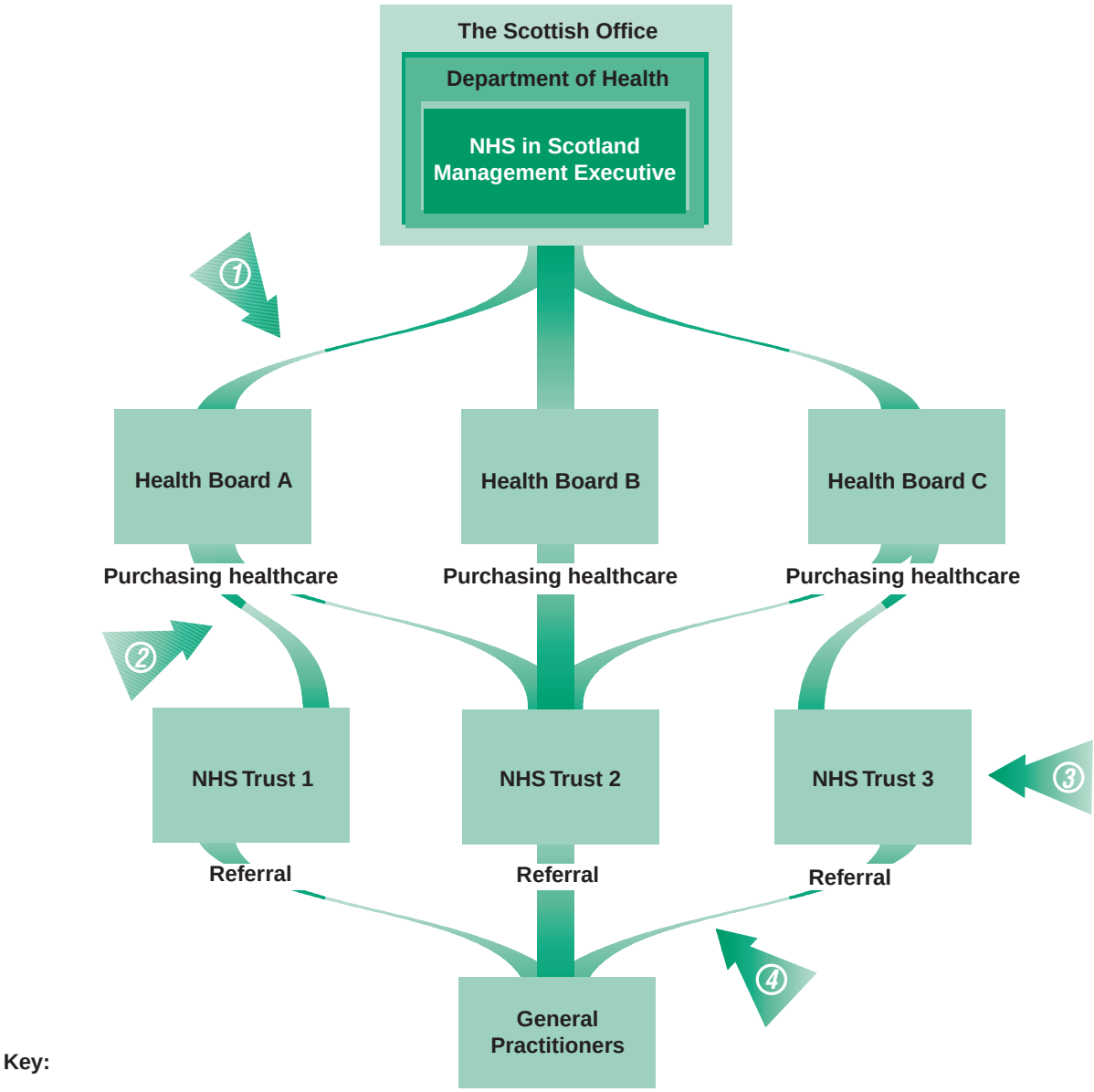
National Audit Office examination

1.14 The National Audit Office decided to look at the way in which cataract surgery in Scotland is provided because:

- there is a benchmark for trust performance which the department expects trusts to aspire to;
- only one trust will achieve 80% of cataract surgery carried out as day cases by 1997;
- there are potential resource savings if all trusts reach 80%;
- the cataract surgery service is important in the dramatic impact which the operation makes on the lives of patients who are able to live independently after surgery;

Figure 4

How the NHS can increase the level of day surgery



Key:

1. NHS ME can influence purchasers to buy more day surgery via the performance management system
2. Purchasers should set targets and monitor progress in improving day surgery levels
3. Trust management and consultants should agree a strategy for increasing day surgery in line with health board's targets
4. GPs can ask trusts to provide more day surgery for their patients

- cataracts account for more than half of the work of ophthalmology departments and therefore are important in the work of the NHS by their volume;

- there are marked variations across Scotland in numbers referred and treated for cataract.

1.15 The National Audit Office examined:

- geographical variations in treatment rates and in the proportion of surgery completed on a day case basis;

- the causes of variations, the nature of constraints on achieving the potential for greater day surgery and the scope for improvement;

- the financial savings and other benefits arising from overcoming constraints to more day surgery through the spread of best practice.

National Audit Office methodology

1.16 The National Audit Office visited all 17 Scottish hospitals where cataract surgery is carried out (see Figure 5) and examined the way that services are currently provided. Because purchasers of services are crucial in bringing about changes in service provision, we also visited 12 health boards and a number of GPs (fundholders and non fundholders) in each board area. We consulted widely with Royal Colleges and other professional bodies. A full description of the study methodology is contained in Appendix 1.

1.17 The rest of the report sets out our findings on the geographical variations, reasons for them and constraints on increasing day surgery in Part 2. The benefits, both financial and non financial of increasing day surgery are laid out in Part 3. Examples of good practice are contained in boxes spread throughout the text.

Figure 5

Scottish hospitals undertaking cataract surgery grouped by Health Board

Highland
1 Raigmore

Grampian
2 Moray
3 Aberdeen Royal

Tayside
4 Dundee Teaching Hospitals

Fife
5 Queen Margaret

Forth Valley
6 Stirling

Greater Glasgow
7 Stobhill
8 West Glasgow
9 Southern General

Argyll and Clyde
10 Inverclyde
11 Royal Alexandra

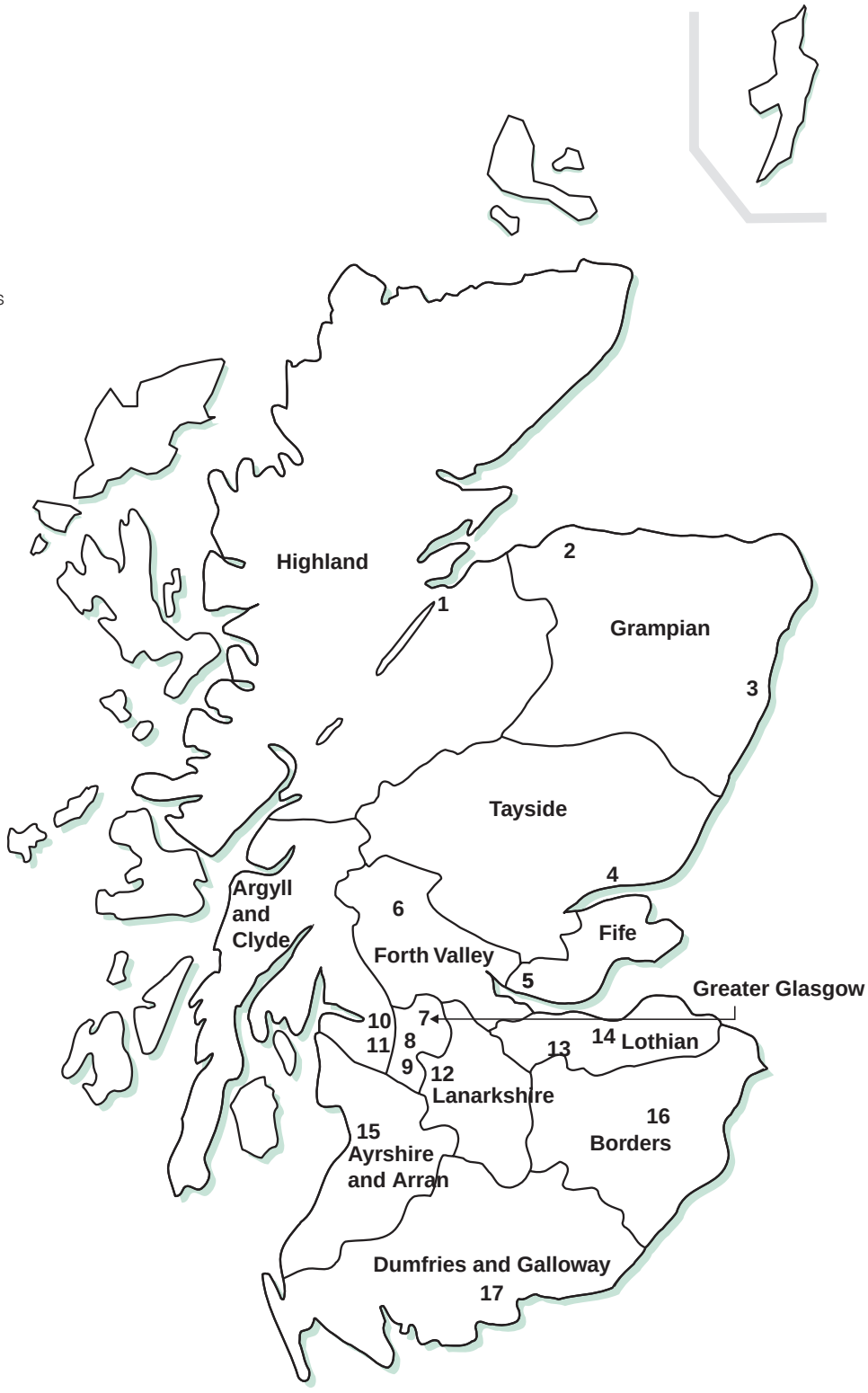
Lanarkshire
12 Hairmyres and Stonehouse

Lothian
13 West Lothian
14 Royal Infirmary

Ayrshire and Arran
15 South Ayrshire

Borders
16 Borders General

Dumfries and Galloway
17 Dumfries and Galloway



Part 2: Causes of variations and constraints on increasing day case surgery

Introduction

2.1 This section of the report examines the differing extent to which trusts have adopted day case surgery and variations in levels of cataract surgery across Scotland. It considers the causes of variations in day case levels and treatment rates and identifies what action NHS bodies can take to:

- overcome barriers to day case surgery in order to increase day surgery to 80%;
- ensure patients who need treatment are offered it.

The NHS is doing more cataract surgery

2.2 Part 1 shows that the number of cataract operations undertaken in Scotland has risen dramatically from just over 6,000 in the year ending 31 March 1986 to nearly 16,000 a decade later. The growth reflects similar developments in England where numbers rose by 54% in four years to 31 March 1995 compared with 43% in Scotland. NHS professionals across Scotland interviewed by the National Audit Office consider the reasons to be:

- improved surgical techniques making intervention beneficial at an earlier stage;
- an increasing proportion of elderly people in the population;
- higher expectations of patients who expect to stay active longer;
- patients learning of the benefits of cataract surgery from others who have received it.

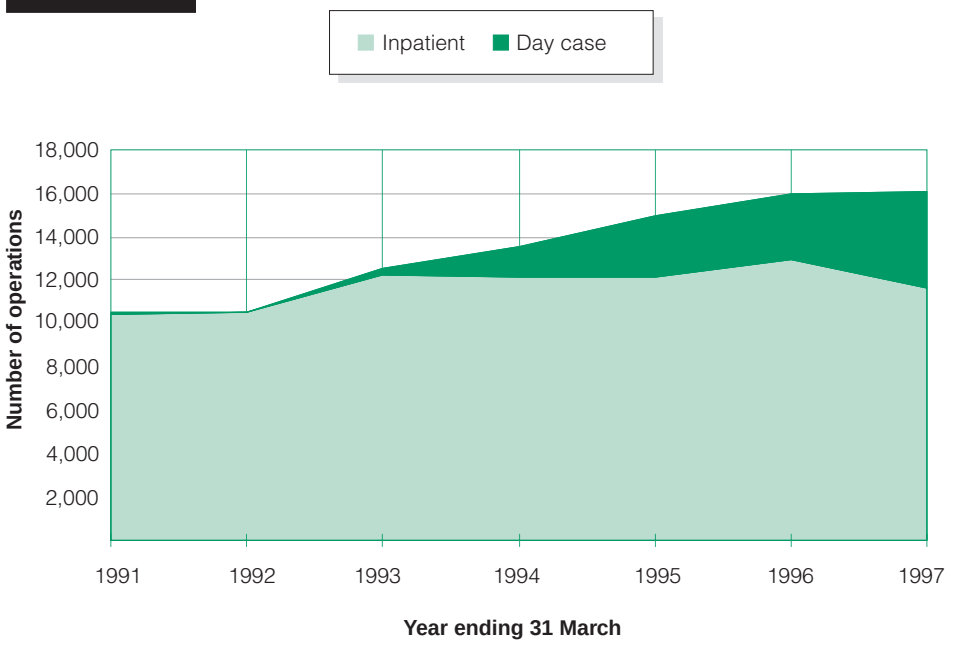
The rise in surgery levels is consistent with recommendations in SHARPEN, which wanted services which would help maintain patients' capacity for independent living to have priority for expansion. Health boards still draw on this document as a framework for determining purchasing priorities.

The growth of day case cataract surgery

2.3 The National Audit Office obtained information on day case and inpatient cataract operations from the Information and Statistics Division of the NHS in Scotland (ISD) to establish how far day surgery had increased since the 1992 report[8]. Day case cataract surgery began to rise in 1993, stemming the increase in inpatient work but not displacing it (Figure 6). As a percentage of all cataract operations, day case cataract surgery reached 7.7% during 1993 against the aim of 30% indicated in the report and was at 36% in the financial year to 31 March 1997 (Figure 7). If current growth continues, it will reach about 45% for the year ending 31 December 1997 compared to the level of 80% indicated in the report. The fact that day case work has not displaced inpatient treatment is one reason why day cases have not increased proportionately as rapidly as The Scottish Office intended. Cataract surgery in the NHS in Scotland will not reach a level of 80% day cases unless inpatient work falls and is replaced by day case work.

Figure 6

Changes in the balance of inpatient and day case cataract surgery in Scotland

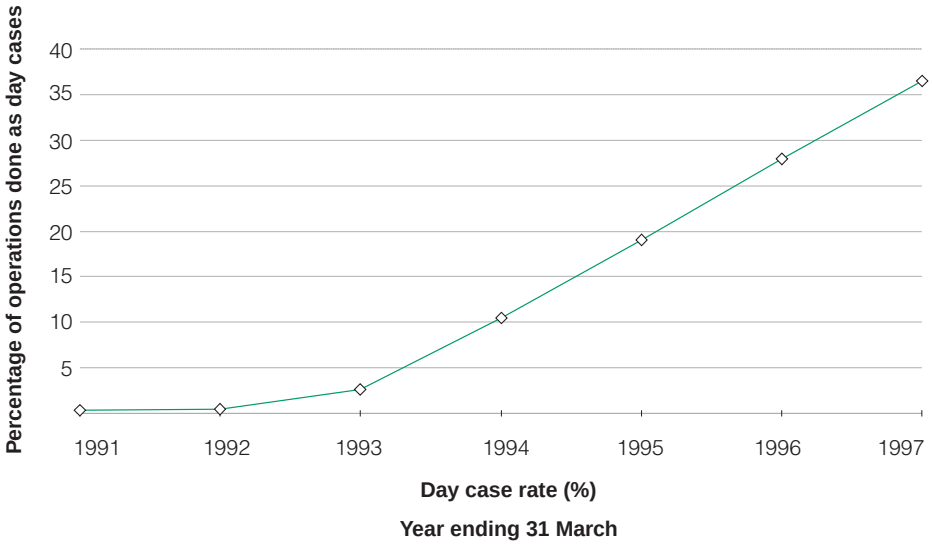


Source: ISD

Figure 6 shows that the rise in day case cataract surgery in Scotland since 1993 has prevented further increase in inpatient treatments but has only recently started to replace them.

Growth in Scottish day case cataract surgery

Figure 7



Source: ISD

Figure 7 shows that the percentage of Scottish cataract operations done as day cases has risen consistently since 1993 but not fast enough to reach 80% by 1997.

2.4 Within the national figure of 30% day surgery, individual NHS trusts vary widely in the amount of day case cataract surgery they carry out (Figure 8). The highest achiever, West Lothian NHS Trust, exceeded 80% in the year ending 31 March 1997. In contrast, Moray Health Services NHS Trust achieved no day cases.

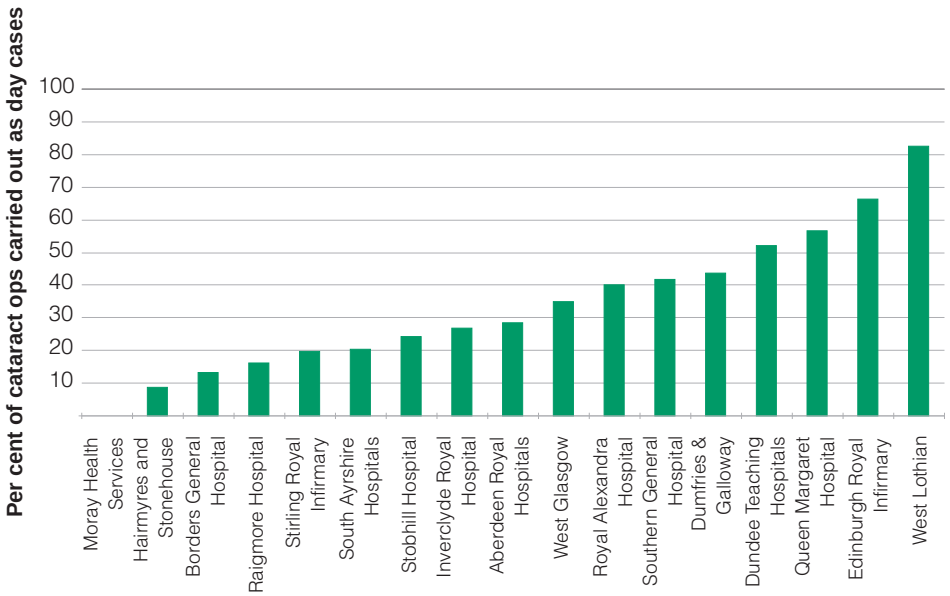
2.5 The results show that the NHS in Scotland will not reach the suggested level of 80% day case cataract surgery if current trends continue. The shortfall is much greater at some trusts than at others, as illustrated in Figure 8, requiring action if all trusts are to aspire to 80%.

Achieving high day case rates

2.6 The National Audit Office interviewed staff at Health Boards and NHS trusts to establish why trusts have such differing rates of day case cataract surgery.

Cataract surgery day case rates by Scottish NHS trust in the year ending 31 March 1997

Figure 8



Source: ISD

Figure 8 shows that one trust achieved over 80% day case cataract surgery in the year ending 31 March 1997 but that six trusts achieved less than 25%.

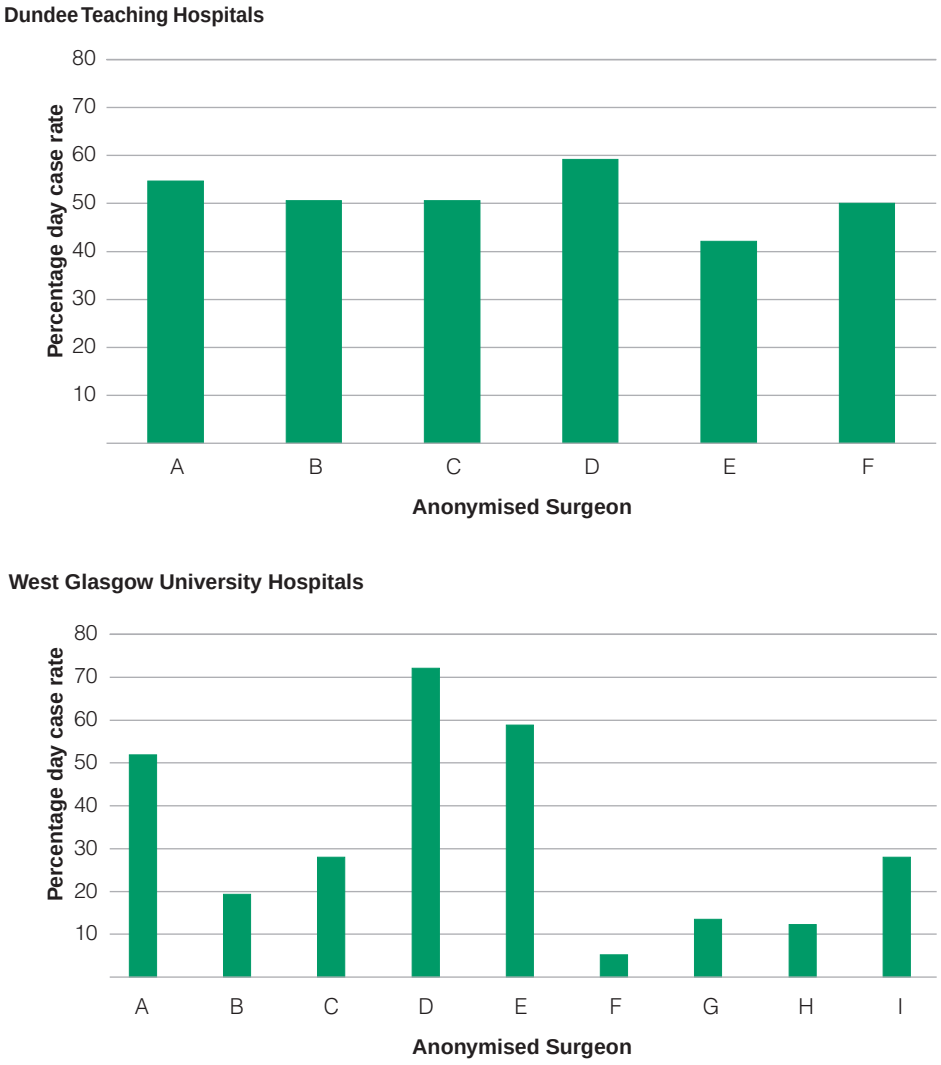
Consultant commitment to day surgery

2.7 West Lothian NHS Trust ensured its success in reaching the highest overall day case rates when it appointed a full time consultant in 1994 who is enthusiastic about day surgery. He worked immediately at a day case level of over 70%. Dundee Teaching Hospitals NHS Trust started day surgery early, achieving the second highest level of just over 50% in the year ending 31 March 1996 and the fourth highest in 1997, with an existing team of consultants who jointly made a strong commitment to day case surgery (Figure 9). Similarly, the consultants at the Southern General Hospital NHS Trust agreed jointly how to increase day case surgery while balancing the demands of inpatient work. All of these trusts supported their consultants with highly competent nursing staff and purpose designed facilities.

2.8 West Glasgow University Hospitals NHS Trust matched the Scottish average level of just over 30% in the year ending 31 March 1997 but the achievement of individual consultants varied widely from 5.1% to over 70% (Figure 9). Widely diverging results among surgeons in a single trust implies that the desire of

Figure 9

Day case rates by anonymised surgeon at NHS Trust Hospitals in the year ending 31 March 1997



Source: ISD

Figure 9 contrasts a trust where all surgeons are committed to day case surgery with one where the differing levels of achievement between surgeons imply that the relative willingness of surgeons to carry out day surgery has a strong influence on the levels achieved.

consultants to carry out day surgery is a very strong factor in determining what day case levels are actually achieved. Trusts achieve more modest levels of day surgery if only part of the consultant team is committed to it.

2.9 The National Audit Office concludes on the basis of interviews at 17 trusts that a key determinant for high day case rates is a committed and properly supported consultant team. The Accounts Commission for Scotland confirmed in their more general examination, that consultants' attitudes are among the main factors affecting day surgery performance.

Difficulties in recruiting specialised staff

2.10 Although many trusts told the National Audit Office they had experienced difficulties recruiting ophthalmologists, anaesthetists and ophthalmic trained nurses, all had managed to cope with recruitment problems and did not see them as essential to increasing day case surgery. Some surgeons told the National Audit Office they could increase throughput substantially with more nursing and anaesthetic support. Trusts also told the National Audit Office they have found ways to resolve the inherent conflicts between the requirement for consultants to run day surgery, the pressure for higher throughput and the need to take time to train junior staff. One successful approach is to separate high throughput from training sessions.

Action to increase day surgery levels

2.11 If the percentage of day case surgery is to rise, then action needs to be taken by all levels of management in the NHS, as well as by senior medical staff. Figure 5 shows where pressure can be brought to bear at different points in the system to increase levels. The Management Executive for the NHS in Scotland agrees an annual corporate contract with each health board, setting out strategic aims and objectives, which may include increasing the percentage of elective admissions which are day cases, decreasing length of stay and increasing throughput. Performance against contract is monitored throughout the year via the performance management process.

2.12 Boards have purchasing contracts with provider trusts. Five out of the 12 boards visited have not set day case cataract surgery targets in their main contracts (Figure 10). Of the seven that have, four set them below levels already achieved. Even those boards setting time related targets above current levels, have not made them high enough for the NHS to achieve 80% throughout Scotland by the end of 1997.

Cataract day case targets in boards' main contracts with provider trusts

Figure 10

Board	Trust	Day Case Target
Argyll and Clyde	Royal Alexandra	Time related target near existing levels
Argyll and Clyde	Inverclyde Royal	Time related target above existing levels
Ayrshire and Arran	South Ayrshire	Time related target above existing levels
Borders	Borders General	No target
Dumfries & Galloway	Dumfries & Galloway	Target near existing levels
Fife	Queen Margaret	Target for ophthalmology set, one for cataract planned
Forth Valley	Stirling Royal Infirmary	Target below existing levels and not updated
Grampian	Aberdeen Royal Hospitals	No target
Grampian	Moray	No target
Greater Glasgow	Southern General	No target
Greater Glasgow	Stobhill	Looked for improvement on existing levels
Greater Glasgow	West Glasgow	No target
Highland	Raigmore	Challenging and time related target above existing levels
Lanarkshire	Hairmyres & Stonehouse	Target above existing levels
Lothian	Royal Infirmary of Edinburgh	No target but one for cataract planned
Lothian	West Lothian	No target but one for cataract planned
Tayside	Dundee Teaching Hospitals	Target below existing levels

2.13 Most trusts lack clear internal targets for day case cataract surgery. In one trust, surgeons thought managers had excluded ophthalmology from day case targets even though this was not the case.

The main constraints to expanding day case cataract surgery levels

2.14 The National Audit Office interviewed staff at NHS trusts visited to establish the barriers to increased applicability of day case surgery and to identify ways in which some trusts had been able to overcome them. The three constraints mentioned most commonly at all trusts were:

- long travelling distances for patients;
- medical and social issues affecting patients' circumstances;
- patient choice.

Trusts can take action to overcome the problem of travelling distance

2.15 The National Audit Office obtained data from ISD about the distances which patients had to travel for cataract surgery in Scotland over the three years to 31 March 1996 in order to establish the extent of this barrier to day case treatment. The figures show that 61% of patients lived within a 15km (10 mile) radius of the hospital, 79% lived within a 25km (15 mile) radius and 90% were within a 40km (25 mile) radius. (Twenty five miles implies an hour's travelling time). Even at Raigmore Hospital NHS Trust, serving the most sparsely populated area of Scotland, 40% of patients lived within a 25km (15 mile) radius.

2.16 This implies that trusts could develop day surgery by starting with patients with similar clinical priority living nearby. Instead, in the year ending 31 March 1996, the NHS in Scotland treated as day cases only 32% of patients living within a 15km (10 mile) radius of their hospital. This figure is barely higher than the overall day case percentage for the year, implying that most trusts did not focus day surgery on their local populations. Only one trust treated substantially more of its local patients as day cases: the Royal Alexandra Hospital NHS Trust reached 57% day case surgery for patients living within a 15km (10 mile) radius compared to 41% overall, as day cases.

2.17 Staff at all NHS trusts told the National Audit Office that the main problem for day case patients with further to travel is the requirement to return to hospital on the morning after surgery for a check up. Trusts in Scotland have used different approaches to overcome this difficulty:

- offering outreach clinics;
- doing the post-operative check in patients' homes;
- bringing forward the check to the day of surgery;
- developing a patient hostel;
- offering a patient taxi service.

The following paragraphs outline the effect each of these different approaches has had.

2.18 Surgeons at Dundee Teaching Hospitals NHS Trust see patients on referral and for post-operative checks at **outreach clinics** nearer their homes. Patients attend the hospital in Dundee just twice: for pre-assessment and for surgery. This has helped the trust to exceed 50% day case surgery. This follows a model adopted successfully elsewhere by trusts such as Moorfields Eye Hospital NHS Trust in London. This approach is applicable to other boards covering a large geographical area such as Borders, or where transport is difficult, like Lanarkshire. (See Box A)

Overcoming problems posed by distance - Outreach clinics

Box A

Ophthalmologists who are based at Ninewells Hospital in Dundee have the large geographical catchment of Tayside Health Board to cover. In addition, they have some patients from outside the health board. In order to minimise the travelling distance for patients, there are four sites for outpatient clinics where patients are seen at their initial referral and post-operatively. Having the post-operative checks carried out close to patients' homes is particularly important in making day surgery a practical proposition for patients who live some distance away from the hospital. This approach would work well in other boards in Scotland where populations are scattered.

2.19 Some surgeons at Aberdeen Royal Hospitals NHS Trust complete **the post-operative check before patients leave hospital** on the day of surgery. Patients have no return journey to make on the next day. This is possible where the surgery has not been complicated, irrespective of surgical technique. Surgeons elsewhere, again including Moorfields Eye Hospital NHS Trust, take the same approach. The Royal College of Ophthalmology will shortly publish the results of a widespread clinical audit of day case cataract surgery and expects to reach conclusions about the optimum timing of post-operative checks.

2.20 Ophthalmic nurses at South Ayrshire Hospitals NHS Trust conduct **the post-operative check in patients' homes**. Each patient receives continuous care from the same nurse, starting at pre-assessment. Recent research[9] found that such an approach is satisfying for nurses and convenient for patients.

2.21 The Royal Infirmary of Edinburgh NHS Trust has converted a ward to a **patient hostel**. It serves as the day case lounge from nine until five and then provides overnight accommodation for patients whose return journey for the post-operative check would be too long. It is not staffed at night. It has enabled the trust to increase day case levels from 46% in the year ending 31 March 1996 to 80% in 1997. This approach would enable hospitals who take patients from a wide geographical area, like West Glasgow University Hospitals NHS Trust and the Southern General Hospital NHS Trust, or where some patients' home circumstances do not permit them to go home, as in the more deprived parts of Scotland, to accommodate patients in lower cost facilities. (See Box B)

Overcoming problems posed by lack of support at home or travelling time - Patient hostel

Box B

Some patients cannot be admitted as day cases due to their home circumstances; for instance, living alone or having no telephone, but would otherwise be suitable. In order to accommodate these patients who do not need nursing or medical care, the Royal Infirmary of Edinburgh NHS Trust have converted a ward to a patient hostel. The furnishings are more homely, and the beds are staffed by auxiliary nurses who can call upon a trained nurse if necessary. While this facility has been in use, day cases have risen to 80% of cataract activity. The hostel beds are suitable also for patients who have long travelling distances, but do not need hospital care post-operatively.

2.22 Staff at all trusts told the National Audit Office that patient transport arrangements must be clearly defined and reliable for day surgery to work smoothly. Most patients are able to make their own arrangements but a lack of adequate transport can prevent an otherwise suitable patient from being treated as a day case. Some trusts have their own patient transport while others use commercial taxis or the voluntary services of organisations such as the Red Cross as cost effective alternatives to offering inpatient treatments.

2.23 The National Audit Office concludes that trusts have a wide range of options open to them to overcome travelling distance as a barrier to day case cataract surgery, all of which have proved successful elsewhere.

Medical and social issues make day surgery unsuitable for some patients

2.24 Surgeons at all NHS trusts told the National Audit Office that a mixture of medical and social issues makes day surgery unsuitable for certain patients. The most common contra-indications are if the patient:

- lives alone and has no one to stay with them for the night after surgery;
- does not have easy access to a telephone;
- is physically incapacitated (75% of those over 75 have other disabilities);
- is confused;
- has diabetes which is not well controlled.

2.25 Patients who are unsuitable for day surgery on social and medical grounds place an upper limit on the day case rate that any hospital can achieve[10]. This limit varies among trusts and depends on local conditions. West Lothian NHS Trust consider the upper limit may be 90%. Inverclyde Royal Hospital NHS Trust told the National Audit Office that high levels of social deprivation mean that more patients, possibly as many as 20%, would not be suitable for day surgery, because they may not have a telephone or transport.

2.26 Trusts which have developed day case surgery successfully use nurse led pre-assessment clinics and pro-forma checklists to ensure that only suitable patients are selected. The Study Group on the Management of Ophthalmology Services in Scotland noted in its 1993 report on **Ophthalmic Nurse Training**,[11] the pivotal role of nurses in developing day surgery and potential savings of £455,000 through greater use of ophthalmic nurses. It also identified staff shortages and a lack of training provision in Scotland. Staff at many trusts in Scotland told the National Audit Office that this is a continuing problem: West Glasgow University Hospitals NHS Trust's progress in increasing day surgery has been constrained by, among other factors, a shortage of ophthalmic nurses and Aberdeen Royal Hospitals NHS Trust are sending nurses to train in England because there are no suitable courses in Scotland.

2.27 These results show ophthalmic nurses are critical in ensuring appropriate patients are selected for day surgery but there are staff shortages in some places.

Patient choice

2.28 The National Audit Office examined whether patients would reject day case treatment if given a free choice.

2.29 Grampian and Forth Valley Health Boards commissioned surveys of patients' views of day surgery in general. They found that patients broadly welcomed day surgery and that this result applied as much to older people as to younger. Patients wanted to have clear explanations about what to do before and after surgery and to have this reinforced with information leaflets. They also wanted to know who to contact if they had further questions. This key finding that patients must have clear information is also confirmed in published work[12].

Patient information

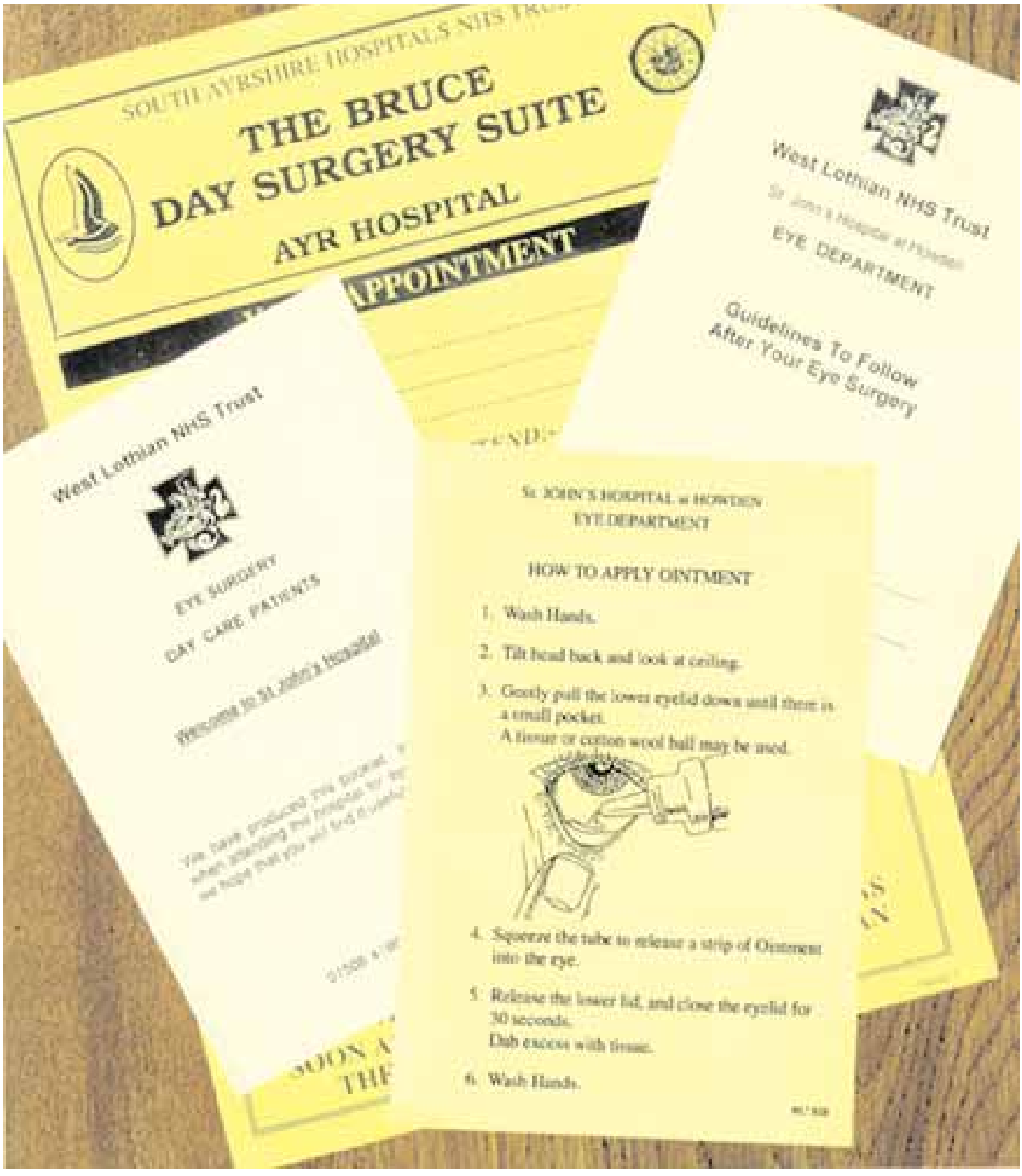
2.30 The National Audit Office found particularly clear patient information at South Ayrshire Hospitals NHS Trust and West Lothian NHS Trust (see Box C) and an example of good progress at Inverclyde Royal Hospital NHS Trust, where staff used a patient survey to identify shortcomings in information leaflets, redesigned them and repeated the survey with much improved results. Staff at the first two trusts told the National Audit Office that their leaflets were successful because they had been developed with patients. South Ayrshire Hospitals NHS Trust worked with purchasers and users to design the overall framework for leaflets and now writes each one with the co-operation of patient groups and the local health council. The cataract leaflets are printed in black on yellow because this combination helps people with poor sight.

2.31 The pre-assessment clinic at the Southern General Hospital NHS Trust provided extensive patient information prior to surgery, including slides of the operation itself for patients to view. This gave the patients a clear idea of what was involved and to have any questions answered (and thus fears allayed). This approach was underpinned by a continuous patient satisfaction survey of all patients going through surgery, meaning that the nurses who run the clinic have constant feedback on any problems.

2.32 The National Audit Office concludes that these results show that patients like day surgery provided they receive adequate information. It is also clear that leaflets and other information are best developed in co-operation with patients, whose views should be taken into account.

Box C

Patient Information



Patients like day surgery provided they receive adequate information. These leaflets were developed with the co-operation of patients and are printed on black on yellow to aid people with poor sight.

Trusts take opportunities to learn from each others' experiences

2.33 Two trusts told the National Audit Office about ways in which they take opportunities to learn from experience in other hospitals in overcoming barriers to day surgery.

2.34 Stirling Royal Infirmary NHS Trust is in a benchmarking club with seven others. Six members of the club offer cataract surgery. They have not yet used the club to compare best practice in day case cataract surgery but this is an option for the future. On a less formal basis, staff at Moray Health Services NHS Trust have discussed how to start day case surgery with opposite numbers at West Lothian NHS Trust. They see the two trusts as having many similar characteristics, but West Lothian NHS Trust is the leading provider of day case cataract surgery while Moray Health Services NHS Trust is one of the last to start.

Significant variations in surgery levels among health boards

2.35 The National Audit Office examined figures from ISD to establish whether large variations in treatment rates for cataract surgery among health boards identified in the 1992 report[6], **Day Case Surgery for Cataract**, still exist.

2.36 While differences among most boards are less than in 1991, treatment rates in Borders and Tayside are statistically significantly higher (Figure 11). These two boards have more elderly populations than the rest of Scotland so the National Audit Office used a detailed breakdown of the population by age and gender to assess the effect of demographic variations. After this analysis, Borders still had a treatment rate 82% above the Scottish average, while Tayside was 41% above average.

2.37 These figures raise the question of what the right level of surgery is for a population, since few boards have carried out needs assessment for cataract surgery.

Not all boards have assessed the local need for cataract surgery

2.38 The National Audit Office interviewed staff at health boards to establish how they assess the need for cataract surgery and determine what level to purchase. The Scottish Forum for Public Health Medicine published a needs assessment for cataract surgery in 1993 which estimated that there could be over

Cataract treatment rates per 100,000 population by Scottish health board

Figure 11

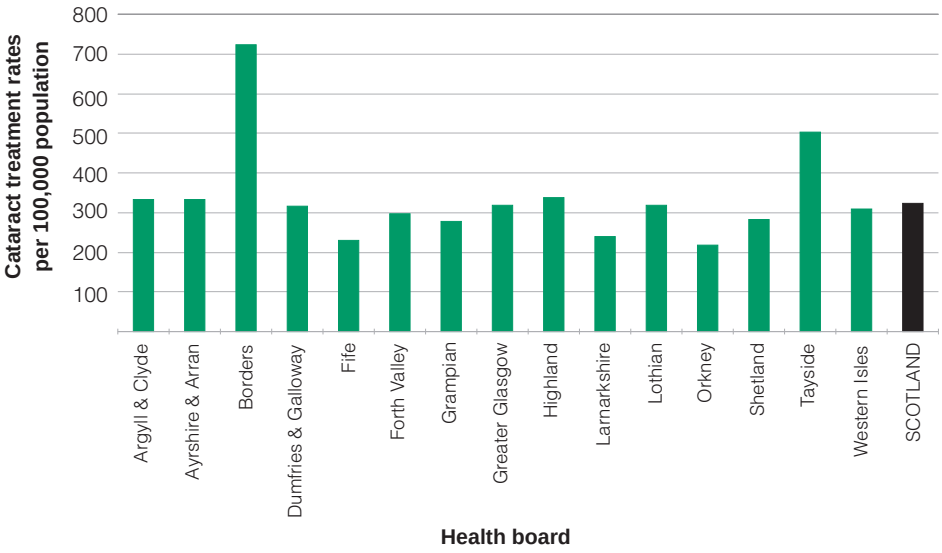


Figure 11 shows that health boards purchased different amounts of cataract surgery per head of population in the year ending 31 March 1997 and that two boards purchased much more than the others.

24,000 new cases each year[13]. Highland, Forth Valley and Lanarkshire Health Boards have drawn on this report in drawing up needs assessments for cataract in their own areas. (See Box D) Grampian Health Board have assessed need for general health provision rather than specific conditions at more local levels by interviewing NHS staff and the public. The other eight boards have not assessed the local need for cataract surgery directly but use patient demand as expressed by GP referrals, as a proxy, aiming to purchase enough to match referrals.

2.39 The National Audit Office concludes that boards have to make their purchasing decisions in the light of local priorities, constraints and other circumstances so may well come to different conclusions about the appropriate amount of cataract surgery to purchase. Those boards that have assessed need for cataract surgery concluded that purchasing levels should rise, bearing in mind other clinical priorities.

Assessing need for cataract surgery

Box D

Lanarkshire Health Board decided to carry out a needs assessment for cataract surgery because it is a high volume procedure and one which is cost-effective in the effect it has on patients' lives, together with the fact that Lanarkshire has the lowest crude treatment rate in Scotland, nor is the rate rising as fast as in the rest of Scotland.

The first part of the needs assessment entailed:

- comparing Lanarkshire's treatment rates and trends with the rest of Scotland's;
- comparisons between different areas of the health board;
- using existing data, estimating prevalence in the Lanarkshire population;
- projecting future needs based on existing data, including numbers waiting;
- setting targets in treatment rates and day surgery levels for the local trust.

The next step will entail analysing treatment rates at GP practices and looking at the variations at local level.

There are some pockets of low treatment for cataract

2.40 The National Audit Office examined treatment rates at the level of local government districts to establish whether, once boards have determined what total level of cataract surgery to purchase, their populations have equal access to it.

2.41 The National Audit Office found that six boards out of fifteen had significantly different treatment rates among their local government districts. One board had a district with substantially lower rates coinciding with higher levels of social deprivation (Figure 12) while low rates in districts of other boards also suggested a possible connection with social deprivation (that is, poverty, poor housing and unemployment). NHS professionals interviewed agreed that special action might be necessary to identify patients who would benefit from surgery where rates seemed particularly low, since patients in social classes IV and V appear to come forward less readily for treatment.

Large variations in treatment rates among GP practices

2.42 The National Audit Office examined variations in treatment rates between GP practices and interviewed GPs with high and low rates to establish whether different referral approaches influence patients' access to cataract surgery at the local level. They asked surgeons about their criteria for operating and GPs about their criteria for referral in order to establish whether the two were consistent and whether GPs with low and high treatment rates used different thresholds for

Cataract treatment rates per 100,000 population by local government district in a single health board

Figure 12

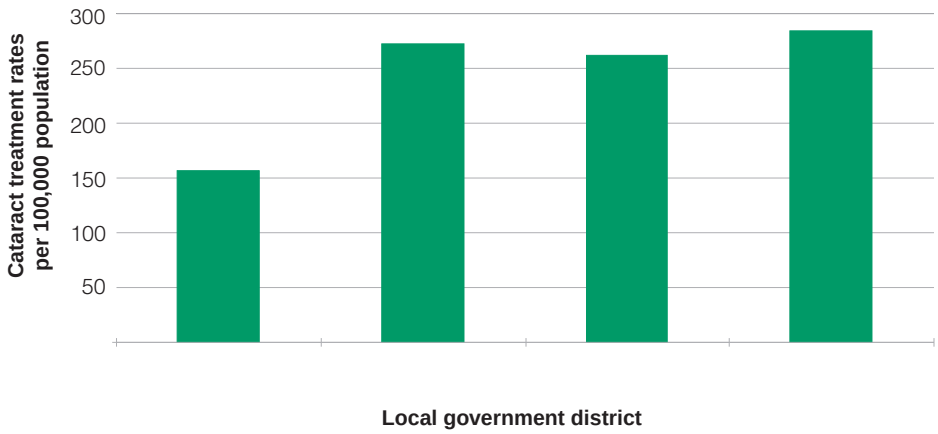


Figure 12 shows a pocket of low cararact treatment in the area served by one health board, where the area of low treatment rates is socially deprived. Treatment rates are annual averages over the three years ending 31 March 1996.

referral. They obtained clinical audit information from one board about patients' visual acuities at the time of listing for surgery to provide further information about referral thresholds used by GPs within that board.

Treatment rates by GP practice

2.43 The National Audit Office found significant differences in treatment rates among GP practices in 21 out of 57 local government districts. Many were very large (Figure 13). Most GPs who volunteered an opinion told the National Audit Office that they would welcome feedback from health boards on treatment rates for their own practices in the context of others, particularly if presented in easily digested graphical form. This would allow them to judge discrepancies and assess whether they need to take corrective action.

Factors influencing treatment rates

2.44 The National Audit Office found from interviewing GPs that their cataract rates depend chiefly on:

- whether GPs actively search for cataract or respond to patient demand;

Cataract treatment rates by GP practice per 100,000 population over 65 in the same local government district

Figure 13

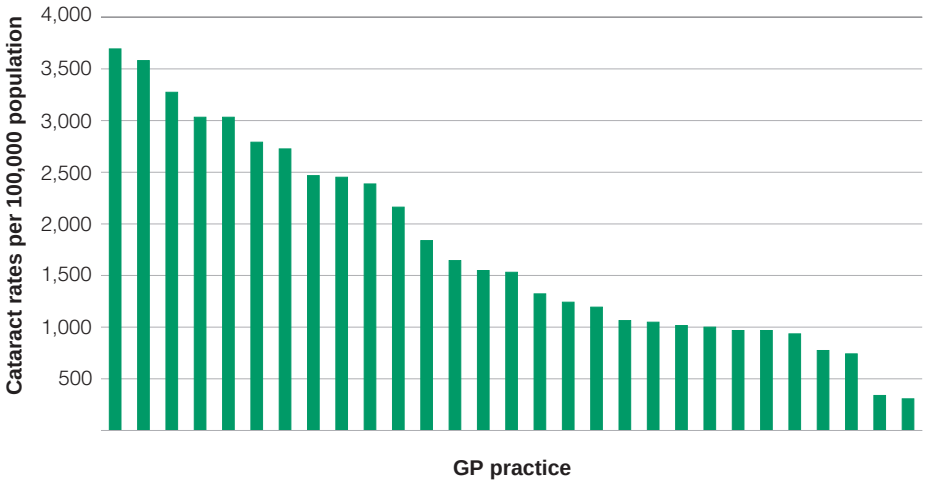


Figure 13 shows substantial differences in treatment rates between GP practices in a single local government district even when expressed in terms of the older population most likely to receive cataract surgery. Treatment rates are annual averages over the three years ending 31 March 1996.

Source: ISD

- how active local opticians are in identifying cataract;
- the threshold for visual acuity at which GPs normally refer.

2.45 The National Audit Office found that some GPs look for cataract as part of an annual check offered to all patients over 75 years old but that not all do so. There is no standard format for the check, so GPs decide individually what to include in it. Some include full acuity tests; others do not assess eyesight and some have ceased to offer the check. The Study Group on the Management of Ophthalmology Services in Scotland recommended that the health check should include a test of acuity in its 1993 publication on **Ophthalmology Services for the Elderly in the Community**[14] and its 1994 publication on **Health Promotion and Screening in Ophthalmology**[15]. Research in 1996[16] commented on the lack of standardisation in the check and recommended a more uniform approach.

2.46 The National Audit Office found that opticians are also important in identifying patients who may need cataract surgery, whom they refer on to GPs, particularly where GPs are less active in searching for cataract. In this situation, GPs with higher referral rates have more of their cataract patients identified initially by opticians.

Thresholds for referral by GPs

2.47 Normal vision is measured as a visual acuity of 6/6 (see Figure 14 for an explanation of visual acuities). The National Audit Office found that most surgeons will operate at visual acuities of 6/18 or worse, at 6/12 for drivers and at 6/9 in some circumstances, if a patient's lifestyle is affected. This reflects advice from the Royal College of Ophthalmologists[17]. Many GPs preferred not to quote specific referral acuities to the National Audit Office. They stressed that other, more subjective issues, particularly the impact of cataract on a patient's lifestyle, influence the referral decision. Other GPs, while emphasising the importance of these other factors, did indicate acuities at which they usually refer. GPs with the higher treatment rates, who quoted a visual acuity level, refer at acuities which are broadly in line with those adopted by surgeons when deciding whether to operate. Those with lower rates refer at lower acuities, adopting thresholds of 6/36 or worse in some cases.

2.48 In clinical audits contracted for by their main purchaser, the Royal Alexandra Hospital NHS Trust found 33% of patients had acuities of 6/60 or worse when listed for surgery and Inverclyde Royal Hospital NHS Trust found this level of vision in 40% of patients. Research in 1994[18] identified similar wide variations in visual acuity at the time of listing for surgery in north England and concluded there was unequal access to treatment.

Explicit GP referral criteria

2.49 The National Audit Office enquired whether GPs use written guidance to help ensure greater consistency in referral. The majority of those interviewed did not, but GPs in Argyll and Clyde and in Grampian have recently obtained local referral guidance while a GP in Forth Valley told the National Audit Office of a paper just published[19] in which he will use to assess patients. He planned to apply a scorecard approach described in 1997 for assigning priorities to patients on the basis of acuity and other disability measures. In Argyll and Clyde, surgeons at the Royal Alexandra Hospital NHS Trust had prepared a one page set of guidelines in collaboration with GPs. They recommend referral at an acuity of 6/12 when combined with poor near vision.

2.50 In Grampian, the Health Board co-ordinated a revision of local guidelines as part of a joint GP and consultant initiative under the auspices of the Royal College of General Practitioners. The two page guidelines describe the cataract

Figure 14

Visual acuity levels

This figure demonstrates how visual acuity is measured and how the Snellen chart, commonly used for testing sight would look to someone with diminishing levels of vision.

This chart shows normal vision which is represented by a visual acuity measure of 6/6. As vision worsens, the denominator increases.

This is a level of vision of 6/12 which is just below driving standard.

Clarity worsens at a level of vision of 6/24.

The chart is increasingly blurred and normal activities much curtailed at a visual acuity of 6/36.

Visual acuity level of 6/60 with advanced cataract, meaning that a person is effectively blind.

Sometimes vision is affected in other ways:
this chart shows the effect of monocular diplopia, or double vision on sight.
Again normal activities like reading would be badly affected.

Cataract can make the perception of colour change. This chart shows the colour shift caused by a 'brunescent' cataract.

Source: These pictures were kindly provided to the NAO by the Ophthalmology and Medical Illustration Departments of St. John's Hospital, West Lothian NHS Trust, Livingston.

condition, its treatment, management of the hospital stay, surgical risks and how to assess patients. Its key message is that GPs should refer patients with cataract when they want surgery, even at an acuity of 6/9.

2.51 Some GPs told the National Audit Office that referral guidelines would be of limited benefit unless accompanied by improved basic and continuing education in eye medicine for GPs. The Study Group on the Management of Ophthalmology Services in Scotland, in its 1993 report on **The Education and Training of Professional Groups other than Nurses**[20], recommended better training in eye medicine at the undergraduate level and during GP vocational training. A research paper in 1994[21] reported in 1994 that GPs in the English midlands also had an inadequate appreciation of modern cataract surgery methods, affecting their ability to refer appropriately.

2.52 These findings together demonstrate that some patients may have their lives limited by cataract long after the point at which most surgeons would operate because some GPs do not search for cataract actively while others delay referral once they identify cataract.

Recommendations

2.53 In order to increase the levels of day surgery locally, trusts should:

- appoint consultants with the appropriate levels of expertise, who want to carry out surgery on a day basis and discuss with those who feel that it is too risky for patients, ways of addressing the perceived problems;
- consider the different options like outreach clinics; use different transport arrangements which are practical locally and take steps to implement them;
- develop nurse led pre-assessment clinics further, so that all patients who are listed for cataract surgery are pre-assessed;
- take every opportunity to share best practice by formal and informal mechanisms, like benchmarking clubs;
- ensure patients and GPs have clear information about surgery and contact numbers in case of emergency;

- reduce bed numbers as appropriate and as far as is possible as day case levels rise.

2.54 **GPs** could act to increase day surgery levels by:

- discussing with providers increasing levels of day surgery for suitable patients;

- identifying in referral letters patients whom they consider to be suitable for day surgery.

2.55 **Health boards** can act to increase day surgery levels by:

- setting clear day case targets for cataract surgery in agreement with providers and clinicians;

- discussing with trusts the local barriers to more day surgery and means to overcome them.

2.56 The **Scottish Office Department of Health** can act to increase day surgery by:

- discussing progress in day surgery with boards as part of the performance management process;

- examining whether more could be done at national level to implement the working group's proposals made in 1993 on ophthalmic nurse training.

2.57 **Health boards** can address variations in treatment rates and referral patterns by:

- drawing on the available published information on the incidence of cataract and carrying out needs assessment to inform purchasing decisions;

- reviewing treatment rates for example, by local government district and take action where indicated where treatment rates are inconsistent with the rest of the health board area;

- developing local referral guidelines in co-operation with surgeons and GPs, and including an element of continuing education as in Grampian;

- providing comparative information on cataract treatment rates by GP practice so that GPs can assess whether they need to adjust their referral approaches.

2.58 The **Scottish Office Department of Health** should take the following action on variations in treatment rates:

- consider the practicalities of standardising more closely what to include in the over 75s health check as recommended in the 1994 report, **Health Promotion and Screening in Ophthalmology**;

- examine what action could be taken on the 1993 proposals about GP education in ophthalmology.

Part 3: Benefits from increasing day surgery

Introduction

3.1 This part of the report evaluates the potential financial benefits available to the NHS in Scotland if day surgery were to reach the level of 80% as recommended by the Study Group on the Management of Ophthalmology Services in Scotland and ascertains whether there would be any additional costs. In addition, the National Audit Office has examined the wider, non financial, benefits which could accrue from increasing day surgery. These are set out below.

Financial benefits from increasing day surgery

Potential savings

3.2 There are a number of possible methods of estimating the potential savings available to the NHS if all trusts reached a level of having 80% of their cataracts done as day cases. One method would be to use the tariff prices per cataract operation, calculated by each trust for inclusion in their annual contracts. This tariff could then be used to calculate the additional cost of treating patients as inpatients rather than day cases at each trust. The National Audit Office decided against this method because tariffs do not yet accurately represent the cost of treating patients. To address this, the Department has set up the National Costing Project to help improve costing of procedures at local level[22].

3.3 Thus the National Audit Office decided to use the same method as that adopted by the working group in their 1992 report on cataract surgery. This entails estimating value of savings in bed days consequent on all trusts reaching the 80% level. The calculations are as follows.

3.4 In 1996-97 there were about 16,000 cataract operations and 36% were done as day cases. If the proportion of day cases were increased to 80%, then an additional 7,000 cases would transfer from inpatient to day case treatment. The average length of stay of cataract inpatient cases in 1996-97 was 2.1 days. Therefore the total potential saving in inpatient days is 14,700. As an average figure (based on **Scottish Health Service Costs**[23]), the Scottish Office told us it would be reasonable to assume a potential saving in costs of about £100 per day. This implies that a reduction of 14,700 inpatient days would save about

£1.47 million. On this basis and taking account of the fact that the surgical procedure is the same for both inpatient and day case treatment, the saving from expanding day surgery for cataracts to 80% would be, therefore, **¼1.47 million**. This amounts to more than 10% of the total costs of cataract surgery.

3.5 The National Audit Office examined whether this figure of £1.47 million ought to be reduced to take account of potential additional costs from increasing day surgery. On the basis of information available, the National Audit Office concluded that there could be some limited increase in workload elsewhere in the NHS, (see paragraghs 3.6 - 3.10) but the cost implications of this are minimal.

Transferring costs to other parts of the NHS

3.6 One of the criticisms made of increasing day surgery as a means of making resource savings is that by cutting work in the acute hospital; that is, discharging otherwise well patients to convalesce at home, work is merely shifted to another part of the NHS. Thus, GPs and community services have to care for patients who would have stayed in hospital in previous years. The trusts visited were aware of this and tried to circumvent it by giving patients thorough discharge information; teaching patients and their carers how to instil eyedrops (an essential part of post-operative care) and ensuring patients have a helpline telephone number to call if they are worried about their eye.

3.7 In order to investigate whether costs are merely shifted to another part of the NHS, the National Audit Office interviewed GPs in all health boards visited and asked them to quantify the additional workload imposed by day case cataract surgery patients. All GPs told the National Audit Office they have had little extra work load from day case cataract surgery. The vast majority welcome its development provided trusts select only appropriate patients and provide them and GPs with adequate information. None of the GPs had noticed any increase in workload, such as extra call outs at night or requests for home visits from cataract patients, even those GPs whose local trust had increased its day case work.

3.8 The other source of support for discharged patients would come from community trusts who provide district nursing and other home services. Patients unable to administer their own drops require post-operative help from district nurses for several weeks whether they receive inpatient or day case surgery. The effect of day case surgery is to bring the need for help forward by one day.

3.9 The National Audit Office conducted a telephone survey of all community trusts in the 12 health boards visited. We asked them to quantify the additional workload imposed by the earlier discharge of cataract patients. The nineteen Scottish community trusts confirmed the low impact of day case cataract surgery on community services. Only seven community trusts reported any extra work: six consisting of the one extra day per patient referred to them. These are very small numbers; for example, Stobhill Hospital NHS Trust had referred only 3 patients to community nursing in the four months prior to National Audit Office's visit. One community trust commented on extra work in rural areas, due to travelling time. Several mentioned that the role of the hospital was crucial in selecting suitable patients and providing specialist after care. Research reported in 1995[24] also showed that day case surgery in general has limited effects on community services.

3.10 The National Audit Office concludes that the no apparent additional cost is passed on to another sector of the NHS is very minor and thus the cost saving of £1.47million does not need to be significantly adjusted downward to take account of additional costs elsewhere.

Additional investment required to expand day surgery

3.11 The potential savings from increased day surgery would have to be adjusted downward if substantial additional investment was needed and if the capital costs of day case treatment exceed those for inpatients. No information on this is available. The National Audit Office therefore interviewed staff in NHS trusts, as a proxy measure, to establish whether extra personnel, equipment or facilities were needed to expand day surgery.

3.12 The National Audit Office found that while nearly all trusts visited had some form of dedicated day case unit, only a minority of eye surgeons used them for cataract surgery. Most surgeons used specific ophthalmic day case facilities attached to the eye wards. In each case the key requirement was to provide waiting and recovery areas for patients and their relatives. This indicates that the need for additional day case facilities for cataract surgery is limited.

3.13 Research published in 1996[25] concluded that a technique called phacoemulsification is ideally suited to day case cataract surgery. It requires more expensive equipment than the alternative extra-capsular extraction and surgeons need to be trained in the technique. The National Audit Office interviewed surgeons at all trusts to establish the extent to which they use phacoemulsification and whether it is essential for day case work. Most surgeons told the National Audit Office they use phacoemulsification whenever possible because they consider that

it gives better clinical results. A minority have rejected it because of its potentially greater complications, some of these using alternative small incision techniques such as one reported in 1996[26]. Others stress that surgeons can minimise the complications of phacoemulsification if they convert to the extra-capsular approach in cases which become more complex during surgery. All surgeons told the National Audit Office that phacoemulsification is not essential for day surgery. One surgeon achieves 70% day case levels using the extra-capsular method. However, the use of phacoemulsification and its extra costs, applies equally to in-patient treatment and therefore does not affect the balance of costs as between day or in-patient treatment.

3.14 The National Audit Office concludes that substantial investment in new facilities, equipment and staff is not necessary to achieve high day case levels. Thus, the potential saving of up to £1.47million does not need to be adjusted downward significantly.

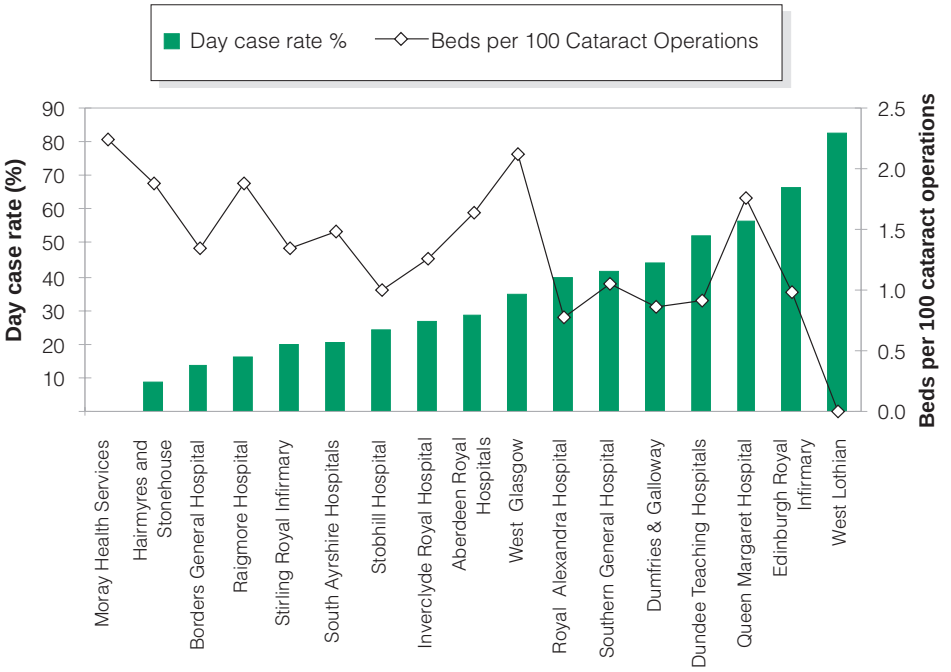
Measures to realise potential cost savings

Reducing beds

3.15 In order for day surgery to be a cheaper way of providing a good quality service, beds and wards have to be shed. The National Audit Office examined the relationship between inpatient bed numbers per 100 cataract operations and day case rates, (Figure 15). This shows that trusts with higher day case rates have broadly been able to reduce bed levels and generate financial savings.

Figure 15

Ophthalmic bed provision in Scottish NHS trusts in the year ending 31 March 1997 compared to day case rates



The correlation between the day case rate and bed provision is -0.64, with p = 0.008; that is, there is a very highly significant correlation between day case rate (%) and beds per 100 cataract operations in Scottish NHS trusts in 1997.

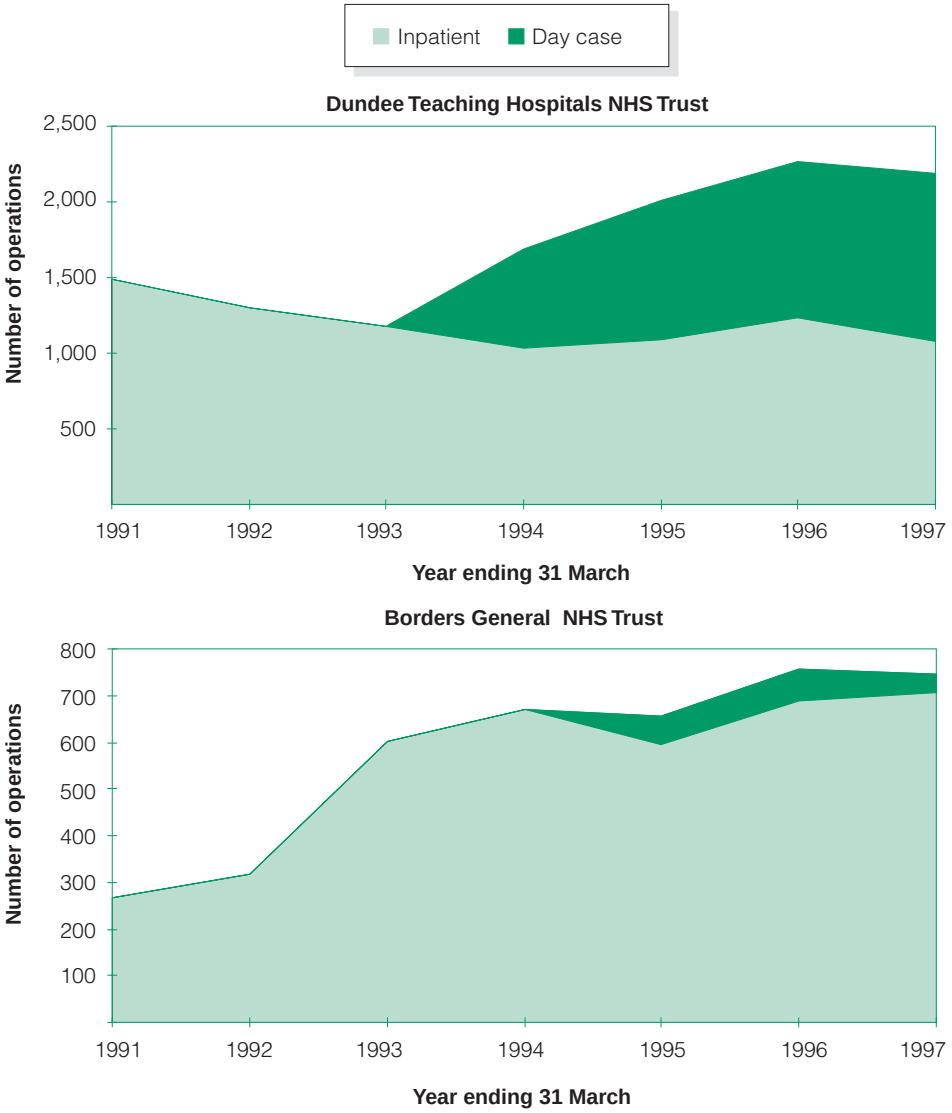
Source: ISD

3.16 Reducing planned bed provision may also be a catalyst to increasing day case rates. The National Audit Office compared the two trusts with the highest surgical throughput per consultant. Borders General Hospital NHS Trust has the highest number of ophthalmic beds per head of population, enabling it to meet increased demand for cataract treatment without recourse to day surgery. Dundee Teaching Hospitals NHS Trust has just under the Scottish average bed provision. At Dundee Teaching Hospitals NHS Trust, the growth in cataract treatment was accomplished very largely through expanding day case work. Borders General Hospital NHS Trust, in contrast, increased inpatient numbers and made minimal use of day surgery at only 5% (see Figure 16).

3.17 The National Audit Office interviewed hospital staff to establish how the NHS in Scotland has absorbed an overall reduction in ophthalmic beds without lowering inpatient numbers. Staff at all hospitals explained this is because the average length of stay for inpatient cataract surgery has fallen as surgical developments have given improved outcomes and faster recovery. Trusts visited by the National Audit Office have made variable progress in reducing average

Changes in the balance of inpatient and day case cataract surgery at two NHS Trusts

Figure 16



Source: ISD

Figure 16 contrasts the increase in day case cataract surgery at Dundee Teaching Hospitals NHS Trust and Borders General NHS Trust.

length of stay. Some keep cataract patients in for just one night while others maintain a normal stay of two or even three nights. Those cutting the stay to one night do so using the same pre-assessment approach as for day patients.

3.18 These results show that the NHS will need to cut bed numbers further if it is to lower inpatient treatment. This matches a finding by the Accounts Commission for Scotland that pressure on beds is one reason for some consultants doing more

day surgery. Also, these results show that the NHS can realise additional resource savings if all trusts shorten the normal length of stay for inpatient cataract surgery to one night by applying pre-assessment to inpatients.

Increasing throughput

3.19 Two consultants interviewed considered that the full benefit of introducing day case surgery would only be gained if day case surgery were combined with high surgical throughput. Surgeons at the Royal Infirmary of Edinburgh NHS Trust and West Lothian NHS Trust told the National Audit Office that high throughput surgery is possible if theatre sessions are managed appropriately. They consider the NHS will realise the full benefits of day case cataract surgery only by combining it with a high throughput model comprising:

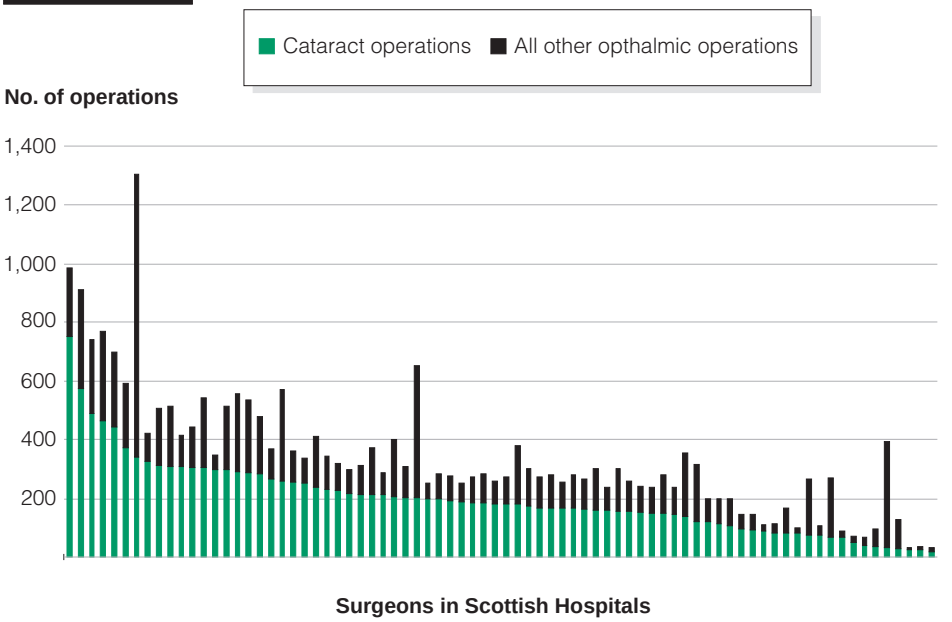
- separate theatre sessions for teaching and for high throughput;
- high throughput sessions having only cataract cases;
- high throughput sessions using local anaesthetic.

3.20 Surgeons at most trusts told the National Audit Office that variations in cataract surgery rates are inevitable because consultants undertake different numbers of other ophthalmic operations of varying complexity. The National Audit Office obtained data on throughput by anonymised surgeon to establish the impact of other ophthalmic operations on cataract surgery levels (Figure 17). These show surgeons with high throughput for cataract surgery also complete high numbers of other operations and conversely that surgeons with low numbers of cataract operations also have low total operating rates.

3.21 The National Audit Office were also told that varying levels of junior staff affect throughput. Surgeons expressed differing views on the impact of junior staff: some explained they can increase throughput by providing extra manpower while others noted the time required for teaching can decrease surgical throughput. Data were not centrally available to investigate systematically the relationship between the levels of junior staff and throughput. In practice, in the year to 31 March 1997, of the two Trusts with the highest cataract throughput per consultant, Borders General Hospital NHS Trust has no junior staff, while Dundee Teaching Hospitals NHS Trust has many. The effect of junior staff remains an open question, but their presence does not necessarily have to limit throughput.

Number of operations in the year ending 31 March 1997 by anonymised surgeon

Figure 17



Source: ISD

Figure 17 shows that surgeons complete different numbers of cataract operations in a year and that those undertaking fewer cataracts do not have higher numbers of other eye operations.

3.22 Surgeons at Raigmore Hospital NHS Trust and Stirling Royal Infirmary NHS Trust also said that different commitments to outpatient clinics affect the number of operating sessions each consultant can fit into a week. The National Audit Office interviewed surgeons to establish the reasons for differing commitments to outpatient clinics. They found wide variation in the number of follow up visits patients make following surgery. Some surgeons arrange as many as four after cataract surgery while others limit it to one if they use the phacoemulsification technique. Other explanations for variations are more limited in their application. A small minority of ophthalmologists specialise in the medical aspects of eyes, so work more in clinics than in theatre, while consultants at Raigmore Hospital NHS Trust spend time travelling to distant outreach clinics. These results suggest that some surgeons can reduce their outpatient commitments by reviewing the number of follow up visits they book for patients after surgery.

3.23 The National Audit Office concludes that consultant surgeons in the NHS need to consider how their theatre and outpatient sessions are organised to see whether reorganisation is necessary to deliver more day case surgery and higher throughput. The development of clinical guidelines from Scottish Intercollegiate Guideline Network summarising the best ways to provide the service would be of use to the NHS.

Non financial benefits of day surgery

Patients like day surgery provided they receive clear information

3.24 It is important when changing the way that services are provided that patients are asked whether or not they like the change. Thus the National Audit Office reviewed patient surveys commissioned by health boards, an independent survey by the Tayside Centre for General Practice[27] and published papers[28, 29, 30]. We consulted with local health councils and the Patients' Association as independent bodies representing patients' views and considered in particular the views expressed by older patients because most cataract operations are on people aged over 65.

3.25 The Tayside Centre for General Practice found high levels of patient satisfaction for day surgery in Scotland. All the local health councils had received either no complaints, or only a few expressions of concern, about day case cataract surgery. The concerns included anxiety about what to expect in terms of the level of pain, the availability of transport and suitable aftercare. The health councils had no direct evidence of different levels of satisfaction between cataract day surgery and inpatient treatment, but most had anecdotal evidence of patients preferring day surgery because returning home the same day caused less disruption to patients' lives. The Patients' Association reported similar views. Published work specifically on cataract treatment[29] in 1992 showed that 87% of patients in southern England who received day case surgery would choose it again.

Clinical outcomes from day case cataract surgery

3.26 The National Audit Office examined whether the clinical outcome of cataract surgery differs depending on the choice of day case or inpatient treatment since it is essential that the clinical outcome of day surgery is as good as inpatient treatment. We examined published papers; asked surgeons about differences in outcomes; asked health boards how they monitor clinical quality and examined information from The Scottish Office Department of Health about clinical quality. We obtained from a fundholding GP an example of a clinical quality specification for cataract surgery purchased from the private sector (see Box E).

Monitoring clinical outcomes - GP contract

Box E

Two fundholding practices' contracts with a private sector provider is an example of how purchasers and trusts could specify higher technical quality than the existing benchmark and monitor it. They stipulated that the following criteria be reported on:

- post-operative visual acuity better than 6/9 in 96% of cases in patients with no pre-existing vitro-retinal condition;
- visual acuity of 6/9 or better with a refractive error of +1.5 dioptres sphere or better and +1 dioptres cylinder or better in 80% of cases;
- post-operative retinal detachment less than 1 in 1000;
- endophthalmitis less than 1 in 1000;
- improvement in visual acuity in 100% of patients.

An audit report for 1996-97 has been received from the provider.

3.27 The National Audit Office found widely reported evidence that results from day case cataract surgery are as good as for inpatient treatment. The NHS Centre for Reviews and Dissemination conducted a world wide review of literature in 1996 and found that day surgery is as effective as inpatient care and about 30% cheaper[31]. Three reports in 1992 and 1993[32,33,34] confirm this in detail. The National Audit Office also found professional advice that day case surgery should be conducted by experienced surgeons to protect quality and that junior trainees should be closely supervised[35]. Both the Royal College of Ophthalmologists and the Royal College of Surgeons of England stress these points.

3.28 Surgeons at all trusts visited confirmed to the National Audit Office that there is no difference in outcome between day case cataract surgery and inpatient treatment.

Measurement of clinical outcomes

3.29 The Study Group on the Management of Ophthalmology Services in Scotland recommended three outcome indicators for cataract surgery in its 1995 report on **Information and Outcomes in Ophthalmology**[36]:

- clinical outcome represented by a unit's endophthalmitis (eye infection) rate;

- functional change measured by improvements in visual acuity;
- sample retrospective surveys commissioned by purchasers to assess changes in patients' quality of life.

Also, the White Paper published in 1997, **The Scottish Health Service: Ready for the Future**[37], confirmed it is a primary responsibility of health boards to monitor clinical outcomes.

3.30 The National Audit Office found that health boards are not specifically monitoring the first two indicators. One board said that it relied on feedback from GPs to monitor quality but recognised that the mechanism is imperfect. Greater Glasgow Health Board is at the moment engaged on a city wide audit of the outcome of cataract surgery. (See Box F)

Monitoring clinical outcomes - Area wide audit of cataract surgery outcome

Box F

The clinical audit department of Greater Glasgow Health Board are currently undertaking a pilot area wide audit of the outcome of cataract surgery (both inpatient and day case). The audit is intended to show how effective the surgery is in improving existing visual acuity and how frequently common or serious post-operative complications occur.

Data are gathered on a two page form at the pre-assessment clinic; at surgery and three months after surgery. Once the evidence gathering is complete, a before and after comparison of visual acuity and post-operative complications will show where the best results have been obtained and where improvements need to be made. The methodology of this audit could be applied by other boards and trusts who want to monitor the outcome of cataract surgery, continuously, retrospectively or on a sample basis

3.31 The National Audit Office found that not all ophthalmology departments were monitoring the outcomes of surgery either, due partly to the time which this could take or because other subjects were seen as more important subjects for clinical audit, although the medical director at one trust told the National Audit Office he could supply the relevant information at little expense. Some used as a benchmark the results of a UK survey undertaken under the auspices of the Royal College of Ophthalmologists and reported in 1993[38]. That survey showed that 90% of patients had some improvement, with 80% of patients having a visual acuity after surgery of 6/12 or better at 3 months. Only 6% of patients had no improvement and 4% deteriorated. The author of the 1993 survey is working on a

new survey which will update results and also assess day surgery in more detail. Most had some reporting mechanism in place for the monitoring of endophthalmitis.

3.32 Argyll and Clyde Health Board addressed the quality of life of patients after surgery in a 1994 survey of patients' perceptions about the outcome of cataract surgery. It asked patients to identify before the operation three important areas of life which they felt would be improved by surgery. Following the operation, it asked the same patients to assess whether any improvements had been greater or less than expected. The survey confirmed that patients found greater improvements in their quality of life than they had expected. No other health board had undertaken a similar survey but West Lothian NHS Trust planned to do so following discussions with the National Audit Office.

3.33 The Scottish Office Department of Health has a mechanism for circulating comparative information on clinical outcome indicators. The Clinical Resource and Audit Group publishes **Clinical Outcome Indicators**[39] periodically. To date, it has included one indicator for cataract surgery (covering both inpatient and day case treatment): percentage of patients readmitted as emergencies within 28 days of discharge following an elective operation for cataract. Most surgeons told the National Audit Office that this indicator, based on data routinely available, is not sufficiently precise to exclude admissions unrelated to cataract surgery and that a cut off between 7 and 14 days would be more effective.

3.34 These results show that day case cataract surgery in general gives results as good as inpatient treatment but that boards and trusts are not specifying or monitoring outcomes sufficiently systematically in the ways recommended in 1993.

Recommendations

3.35 The National Audit Office recommends that:

- the **Department, health boards and trusts** take action to realise the potential financial savings from increasing day surgery;
- **trusts** consider ways to achieve the benefits which can spin off from increasing day surgery: including fewer outpatient appointments, shorter length of inpatient stay and higher surgical throughput;

- **trusts** still at an early stage of expanding day surgery consider applying the approaches described in paragraph 2.29 and Box C to preparing information leaflets;

- **purchasers** consider whether a detailed quality specification such as that described in Box E could be used in NHS hospitals;

- **health boards** commission surveys to measure the patients' quality of life as recommended in **Information and Outcomes in Ophthalmology**;

- **The Scottish Office Department of Health's** Clinical Resource and Audit Group consider the practicalities of collecting and publishing the first two outcomes recommended in **Information and Outcomes in Ophthalmology**;

- The Scottish Office Department of Health should consider inviting the Scottish Intercollegiate Guideline Network to produce clinical guidelines for the provision of cataract surgery.

Glossary

cataract	medical condition in which the lens in the eye becomes opaque, so that light cannot pass through it and hence the patient cannot see clearly. The only cure is surgery.
consultant	senior hospital doctor
day case	a patient admitted for investigation or operation to hospital, but discharged home on the same day
dioptre	a unit for expressing the refractive power of a lens
elective admission	patient planned to come into hospital for a specific procedure; ie. not an emergency
endophthalmitis	serious eye infection which can lead to the loss of one or both eyes
extra capsular extraction	surgical technique for removing a cloudy lens from the eye
lens implant	small plastic lens of varying power of magnification inserted into the eye to replace the lens clouded by cataract
ophthalmology	hospital specialty dealing with eye conditions
outreach clinics	clinics for outpatients held at a location some distance from the hospital
patient hostel	accommodation for patients who do not require nursing care
phacoemulsification	a procedure whereby the cloudy lens in the eye is broken up and removed in pieces. This type of surgery requires a smaller incision
pre assessment clinic	clinic run by experienced, ophthalmic trained nurses who explore patients' medical and social circumstances and decide whether or not they are suitable for day surgery
provider	hospital or other service provider who contracts with the health board to provide particular services

purchaser	health board who has the responsibility of assessing the health needs of local populations and buying healthcare for that population
SIGN	Scottish Intercollegiate Guideline Network
SHARPEN	Scottish Health Authorities' Review of Priorities for the Eighties and Nineties
tariff	price of a procedure included in the contract agreed between purchaser and provider. In the NHS, price (tariff) is set to equal cost
visual acuity	measure of how well a patient can see. Normal vision is measured at 6/6. The higher the denominator, the worse a person's sight
vitro retinal	relating to the vitreous part of the eye, behind the lens

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Appendix 1

Methodology used in the National Audit Office's examination

In order to examine the issues identified for the study, the National Audit Office obtained national data from the Information and Statistics Division of the Common Services Agency of the NHS in Scotland and analysed it. We obtained:

- data on day surgery levels by trust to see whether any had reached 80%;
- day surgery levels broken down by distance as the crow flies from the patient's home to see what the population dispersal is and whether that affects the day case rate;
- data on treatment rates nationally and by boards, analysed down to GP practice to identify the variations in the numbers treated across Scotland. These were adjusted for age and sex;
- data on referral rates by GP practice across Scotland to identify whether there were geographical variations in the numbers referred, as partial explanation for numbers treated;
- national data on day surgery analysed by anonymised surgeon in each trust to see who was making the biggest contribution to the target;
- data on available ophthalmic resources (surgeons, beds and theatre sessions) available in each board.

The National Audit Office visited all 17 hospitals where ophthalmic surgery is carried out. This approach meant that selecting a representative sample of trusts with all of its attendant difficulties was avoided. Senior medical, nursing and financial staff were interviewed to discuss:

- progress towards the 80% target;
- why the trust had not reached the target;
- what the constraining factors were and what needed to be done to reach the target;

- why day case rates vary between different surgeons;
- criteria for treatment;
- outcomes of treatment, including patient satisfaction
- potential savings and other benefits from increasing day surgery.

Interviews were done using a structured, standard set of questions which had been piloted at one hospital site and amended in the light of experience. The questions were sent to the hospitals before the team's visits to allow them to prepare. Each trust received a detailed summary of findings after the visit, which included conclusions and recommendations specific to that hospital as well as a set of graphs showing their treatment rates; referral rates by local GP practice; analysis of day case rates by anonymised surgeon and population dispersal of their patients. Trusts were asked for comments and reactions which were taken into account in drafting the final report.

In order to inform our examination of the service provided by trusts, the team visited three hospitals in England where there is innovative practice. These included:

Kingston Hospital: Day surgery for cataract is at a level of 95%. There are no inpatient beds. Patients who are fit but frail or whose social circumstances do not allow them to be discharged on the same day, are accommodated in a 'patient hotel'. This consists of ward accommodation, converted to be more homely and unstaffed.

Aintree Hospital: In order to increase day surgery in a hospital with a wide geographical catchment area, two ophthalmic trained nurses carry out post operative checks in patients' homes. This means that patients do not have to come back to the hospital 24 hours after surgery for a check up.

Moorfields Hospital: To get around the problem of recalling elderly patients 24 hours after surgery, Moorfields delay the 24 hour check up until three to four days after surgery. They also hold outreach patient clinics so as to minimise patients' travelling time.

The teams interviewed GPs in each area, selecting them by looking at their pattern of referral over the previous three years. High and low referrers (judged against the Scottish average and the average for the relevant board) were asked (among other things) about:

- criteria for referral;
- means by which they can affect the way services are provided by trusts;
- whether their workload has increased following an increase in day surgery;
- what effect increasing day surgery has had on waiting times.

The National Audit Office visited 12 health boards to interview senior staff involved in needs assessment and purchasing of services. Interviews were done using a structured, standard set of questions which had been piloted at one health board and amended in the light of experience. The questions were sent to the boards before the team's visits to allow them to prepare. Discussions focused on:

- purchasing strategies for the elderly and ophthalmology;
- approach to getting trusts to increase day surgery levels and how effective this had been;
- the extent of needs assessment carried out with reference to cataract surgery;
- monitoring of clinical outcomes and patient satisfaction.

Each board received a detailed summary of findings after the visit, which included conclusions and recommendations specific to their area as well as a set of graphs showing their treatment rates; referral rates by local GP practice; analysis of day case rates by anonymised surgeon and population dispersal of their patients. Boards were asked for comments and reactions which were taken into account in drafting the final report.

In order to ensure that increasing day surgery does not merely pass workload and therefore costs onto another part of the NHS, the National Audit Office undertook a telephone survey, using a standard set of questions, of all community trusts in Scotland. (This point was also covered in the discussion with GPs.) The questions

were sent to the trusts around three weeks before the calls were made to give them preparation time. We asked the community trusts to ascertain the demands put on those trust by cataract patients and what the cost (in money and other resources) of those demands might be.

To explore the question of patient satisfaction further, the National Audit Office carried out a telephone survey, using a standard set of questions, of all the local health councils in Scotland. These bodies have a statutory duty to act as the patient's voice. The questions were sent to the councils around three weeks before the calls were made to give them preparation time.

To inform the whole study, the National Audit Office carried out a literature search of research articles; those relevant are listed in the bibliography. In addition, we wrote to the following Royal Colleges and other bodies and held discussions with those who wanted to take part:

- Royal College of Ophthalmologists
- Royal College of Surgeons of England
- Royal College of Surgeons of Edinburgh
- Royal College of Physicians & Surgeons of Glasgow
- Royal College of Anaesthetists
- Royal College of Nursing
- Royal College of General Practitioners
- British Medical Association
- British Association of Day Surgery
- Age Anaesthesia Association

In order to test the practicality and relevance of the study's aims, objectives, methodology and results, a reference panel of advisers commented on the report at key stages. The panel comprised the following:

Mr D S Gartry, MD, FRCS, FRCOpth - Consultant Ophthalmic Surgeon, The Cornea Service, Moorfields Eye Hospital NHS Trust

Professor Frank Clark, OBE, Director, Strathcarron Hospice and former General Manager, Lanarkshire Health Board 1985-96

Ms C Gardner, Director of Health and Social Work Studies, the Accounts Commission for Scotland

Ms J Wheeler, Director, Social Security VFM, National Audit Office

Ms D Hamlin, Assistant Director, Community and Health Services, RNIB

Appendix 2

Reports from the Study Group on the Management of Ophthalmology Services in Scotland

The target of 80% of cataract surgery to be done by day surgery by the end of 1997 was set by the multi-disciplinary Study Group on the Management of Ophthalmology Services in Scotland. The text of their main report is reproduced here, together with the summaries from their other reports.

Report on day case surgery for cataract

Recommendation

It is recommended that steps be taken immediately to effect the introduction and development of day case surgery for cataract in all ophthalmology units, with a view to carrying out 30% of cataract operations on a day case basis by the end of 1993, rising to 80% by the end of 1997.

Introduction

1 This is the first report prepared by the Study Group on the Management of Ophthalmology Services in Scotland, which was appointed by the Scottish Health Service Advisory Council in September 1990 with the remit:

- To identify and recommend good practice and appropriate systems for the management of ophthalmological services in Scotland.

- The membership of the Study Group is shown at Annex 1.

Background

2 The hospital eye service provides treatment, on an inpatient or outpatient basis, for a number of conditions, most of which are associated with ageing. Demographic trends indicate that the current growth in the demands for the service will continue into the next century, (1) and for this reason ophthalmology in the acute sector was identified as a priority in the SHARPEN report. (2)

3 The condition which makes the greatest demands on the service, in terms of both patient numbers and bed days, is cataract. This is an opacification of the crystalline lens of the eye, which, depending on its site and density, may reduce the patient's visual acuity. The only current treatment is surgery, which is performed at the stage when the condition interferes with the patient's activities of daily living. Cataract operations make a significant contribution towards both improving the quality of life of elderly people and maintaining their independence.

4 As shown in Table 1 cataracts account for a growing proportion of discharges from the speciality, and for its staffed beds. In 1991 51% of discharges were cataract patients, who used 49% of ophthalmological bed days. This trend reflects not only the growing demand for cataract surgery, but also other developments in the hospital eye service. In recent years, the inpatient mean stay for all ophthalmic conditions has fallen, and more conditions are now managed on an outpatient basis.

5 An examination of the pattern of cataract discharges across health boards reveals considerable variations in treatment rates, which range, among mainland boards, from 316 discharges per 100,000 population in Tayside to 138 in Lanarkshire. (Table 2 refers). This variation appears to be related to clinical practice and the use of resources rather than patterns of prevalence or resource provision.

6 Although data on overall prevalence of cataract is available from a number of sources (3), (4) the unmet need and potential demand for cataract surgery within the Scottish population is difficult to estimate. If the highest health board discharge rate (365.5 per 100,000 population - Borders) is applied to the Scottish population, the resulting number of operations/discharges is 16,072, an increase of over 46% on the 1991 total of 11,026. It is moreover likely that even this figure is an underestimate, given the level of undetected eye disease found among elderly people living in the community. (5) Some increase in demand is expected in future, due to patients' lifestyles and environmental factors such as the effects of ultra-violet radiation.

7 In summary, cataract surgery currently consumes a very large proportion of the resources of ophthalmology departments. The demand for such treatment will continue to grow with the increasing numbers of elderly people, and already there are indications that current demands are not being met.

Day Case Surgery

8 Day case cataract surgery has been slow to develop in Scotland. In the USA, over 90% of cataracts are treated in this way, and many European countries are following this lead. (6) Despite the progress made in some centres such as Croydon, the UK is lagging behind, with Scotland carrying out less than 1% of cataract operations on a day case basis. (7) The scope for the development of day case surgery has been highlighted in a number of recent reports (7), (8).

9 Resistance among consultants to same day discharges in Scotland appears in the past to have been based on geographical and domestic factors likely to affect follow-up and post-discharge care, but it now seems that these reservations are to some extent being overcome by current developments such as phaco-emulsification, a surgical technique which, compared with conventional extra-capsular lens extraction, will ultimately be safe and less likely to lead to complications. In addition, the provision of hotel facilities for post-operative patients will increase the scope for day case surgery among patients living in rural and remote areas.

10 A survey carried out by the Group in the spring of 1992 to ascertain the views of the 66 consultant ophthalmologists in Scotland on day case surgery attracted a 100% response. Forty four (67%) were in favour of it in principle, 15 (23%) reported no strong views, and 6 (9%) were opposed to it. (One did not state his views). Twenty nine consultants, 44% of the total, reported that the introduction of day case surgery for cataract, or an increase in volume where it was already operating on cataracts on a day case basis, around 50 such operations having been carried out in 1991.

11 Respondents were asked to indicate the benefits they expected would result from day case surgery and also the factors which had restricted their involvement to date. The expected benefits, in descending order of frequency of response, were - savings on ward costs, more efficient use of resources, increased patient satisfaction, reductions in waiting lists, and more job satisfaction. Reported constraints, in the same order, were - patients housing/social circumstances, geographical factors affecting follow-up, lack of clinical facilities, lack of community care, need for training, risks of complications, physical separation of outpatient departments and inpatient facilities, and effects on the training of junior staff.

12 The Group noted that the Audit Commission suggested as an “optimistic” target that 20% of cataract operations should be carried out on a day case basis. (7) Given the success of this measure elsewhere, and the positive attitude of the

majority of Scottish ophthalmologists, however, members considered that with adequate commitment, and initial investment in training, equipment, and to a limited extent in hostel accommodation for patients, a target figure of 30% by the end of 1993, rising to 80% by the end of 1997 would be more realistic. It is recognised that the USA figure of 90% is unlikely to be achieved in Scotland, where patients tend to be older, and less likely to possess private transport.

13 Suggested protocols for hospital activities and patient assessment are shown at Annexes 2 and 3. While the Group is confident that its target can be met, members wished to stress the importance of:

- commitment on the part of all staff involved
- organisational day to day communication within hospitals
- communication between hospitals and patients' GPs
- provision of information and education to patients and carers
- collection of clinical information
- organisation of day case work.

In addition, there are a number of important points which will require to be addressed in all units where day case surgery is being introduced.

14 All patients being considered for treatment as day cases will require an assessment to be made of their physical condition and social circumstances. In addition, it is essential that either the patients themselves or their carers receive thorough instructions in for instance the administration of post operative eye drops, in order to reduce the likelihood of complications and readmission. These tasks should be undertaken by ophthalmic trained nursing staff, and a more flexible deployment of such personnel will be necessary. It should be noted that as a consequence of the instructions given to patients/carers, there will be no increase in the workload of community nursing staff.

15 Day case surgery for cataract may be cataract may be carried out by extra-capsular extraction or by phaco-emulsification: whichever surgical technique is used, it is recommended that local anaesthesia is given. The likely future trend towards phaco-emulsification is supported by the Study Group, and it is recommended that wherever possible this technique be used. At the same time it

is acknowledged that phaco-emulsification requires training and experience. In some circumstances training may be given by the manufacturers of the equipment, but its provision will be the responsibility of provider units, and my require additional funding. Until surgeons have acquired the necessary expertise throughput will be slower than with conventional techniques, but in the longer term operating times may be reduced.

16 While the Group is aware of the development of hostel accommodation it is expected that in the case of cataract surgery its use will be confined to those who for geographical reasons would otherwise be unable to return home after surgery and attend the following day for an outpatient appointment.

17 The introduction of day case surgery will not in itself reduce waiting lists for cataract treatment. This will be achieved only by better use of existing resources or by additional resource provision. It appears that scope currently exists for improvements in the use of resources -a survey carried out by the Group in 1992 identified a spare capacity of 30% over the existing provision of around 130 staffed operating sessions per week in ophthalmology, only two units stating that they could not increase their theatre sessions. The variations in throughput per consultant shown in Table 2 suggests that there is also some scope for improvement in the use of medical staffing resources.

Resource Implications of Day Case Surgery

18 The use of day case surgery would have implications for revenue and capital costs. The gross annual saving in revenue costs has been calculated as follows:

of 1991 discharges	= 8,819 cases
Average mean stay in 1990-91	= 4.4 days
Revenue saving per day in ward nursing, patient services and overheads including capital charges (estimated 1992-93 prices)	= £60 per day
Gross saving annually	= £2.4m

Almost half of this saving would be accounted for by reductions in nurse staffing costs.

19 This gross saving in the revenue costs of inpatient care would be offset to some extent by additional costs associated with the use of day case surgery. These additional costs including disposables (£30 per case), extra outpatient attendances (£20 per case) and the phaco-emulsification equipment. In total these additional costs would be about £60 per case. The overall savings form the use of day case survey for 80% of cataract cases would therefore be as follows:

	Annual Savings
	£m
Gross savings	2.4
Additional costs	(0.5)
Net savings	1.9

The net savings of almost £2m a year would only be fully realised when 80% of cases are treated as day cases and would require some rationalisation of the hospital estate to unlock the savings in patient services and overheads as well as the savings in ward nursing costs. To set this net saving in context: the total annual revenue costs of hospital ophthalmology services in Scotland is about £25m.

20 Although some investment in day case surgery facilities would be necessary, the scale of this is difficult to estimate and will depend on factors such as current availability of day case facilities, the requirements for new facilities and the scope for conversion of existing accommodation. A broad-brush estimate suggests that the investment required might be of the order of £2-3m; it is most unlikely to exceed £5m. Such investment would be more than justified by the substantial annual saving in revenue costs.

21 The revenue resources released by investment in day case cataract surgery could be used to expand services within ophthalmology or in other priority services. Expansion of ophthalmology services would enable waiting lists to be reduced and would therefore significantly improve the quality of life for many patients. An increase in the volume of cataract surgery is also likely to effect savings for the social services, since failing vision among the elderly contributes to the demand for community support and residential accommodation.

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Annex 1

Study group membership

Chairmen

Professor L G Whitby (resigned December 1991)	Department of Clinical Chemistry Royal Infirmary of Edinburgh
Dr J H Spenceley (appointed Chairman January 1992)	Consultant Anaesthetist Raigmore Hospital, Inverness

Members

Dr P S Baines	Consultant Ophthalmologist Ninewells Hospital, Dundee
Miss H A Cochrane	Ward Sister Western Infirmary, Glasgow
Dr M Dlugolecka	Consultant in Public Health Medicine Lothian Health Board
Dr J Duke	General Practitioner Dunlop, Ayrshire
Mr M Hill	Unit General Manager Royal Alexandra Hospital, Paisley
Mr C I McPherson	Optometrist, Aberdeen
Dr A Robertson	Edinburgh Centre for Social Research University of Edinburgh
Miss C Simpson	Assistant DNS, Stirling Royal Infirmary
Miss V Smith	Head Orthoptist Royal Aberdeen Children's Hospital

Members continued

Dr J H Spenceley	Consultant Anaesthetist Raigmore Hospital, Inverness
Dr J Williamson	Consultant Ophthalmologist Southern General Hospital, Glasgow

Co-opted Members

Dr J A Clarke ISD	Consultant in Public Health Medicine
Information	co-opted on to Sub-group on
Miss M Studley	Nurse Teacher Lothian College of Nursing and Midwifery. Continuing Education Department co-opted on to Sub-Group on Education and Training

Assessors

Dr R E G Aitken	Senior Medical officer, SOHHD
Miss J R Davidson	Nursing Officer, SOHHD
Mr A Munro	Economic Adviser Management Executive, SOHHD

Secretary

Mrs F M Cruickshanks	Advisory Council, Secretariat, SOHHD

Ophthalmology Services for the Elderly in the Community

Summary of main conclusions and recommendations

1 Ophthalmology services play an important part in maintaining the independence of elderly people, and could make a significant contribution to initiatives aimed at encouraging more of the elderly to live in the community.

2 The annual health check carried out on patients aged 75+ should include the checking of visual acuity: those failing this test should be referred initially to an optometrist and subsequently if appropriate to a hospital eye department.

3 Referrals of elderly people to hospital ophthalmology departments following the over 75 health checks is likely to help them to live longer in the community and to lead to a reduction in costs in the provision of a long term care.

4 Unnecessary outpatient appointments for patients with cataract should be avoided by the introduction of local protocols for referral.

5 Appropriate action should be taken to facilitate the early discharge of elderly patients from eye units.

6 Registration of blind and partially sighted people should be encouraged, particularly in the case of those discharged from hospital with sight loss.

7 The provision of low vision aids should be the responsibility of designated optometrists.

February 1993

Ophthalmic Nurse Training

Summary of main conclusions and recommendations

1 Post-registration training in ophthalmic nursing, on a national scale, is required for the efficient, effective and safe operation of the service, Failure to provide such training will jeopardise the development of day case surgery in ophthalmology.

2 There are currently insufficient numbers of nurses with ophthalmic training in Scotland. This should be rectified by 1998.

3 Current arrangements for training in this area are inadequate.

4 NHS Trusts and Directly Managed Units should purchase ophthalmic training for nurses from approved institutions. If this mechanism fails to result in appropriate action by September 1994, it is recommended that a suitable alternative mechanism be identified in discussions between the Management Executive and the National Board.

5 If necessary, one institution could be identified as the national centre for theoretical studies in ophthalmic nursing, providing a complete post-registration course.

6 Ophthalmic nurse training is cost-effective.

7 The need for on-going refresher training and the contribution of clinical mentors should be addressed by provider units.

8 Appropriate training in ophthalmic nursing should also be provided for district nurses, practice nurses, health visitors, and nurses working in A&E and occupational health.

April 1993

The Education and Training of Professional Groups other than Nurses

Summary of main conclusions and recommendations

1 Resource use and services to patients in the hospital eye service could be improved by the avoidance of inappropriate referrals to ophthalmology departments.

2 This can be achieved most effectively by the provision of better training for non-ophthalmological medical staff, initially at undergraduate level and most importantly during GP vocational training.

3 The importance of continuing education in contributing towards enhanced standards of patient care should be acknowledged by appropriate investment, and access to training sessions improved.

4 One partner in larger GP practices should be encouraged to have a special interest in ophthalmology.

5 All medical staff in other specialties who are involved in ophthalmology should be given adequate training. Anaesthetists should be training in the use of local anaesthesia for ophthalmic operations.

6 Orthoptists should be given more practical experience in refracting during training.

December 1993

Health Promotion and Screening in Ophthalmology

Summary of conclusions

1 The report concludes that in addition to enhancing the quality of life of individual patients, the following forms of intervention are likely to be cost effective:

- Visual screening of pre-school children
- Screening of diabetic reinopathy
- Screening for chronic open angle glaucoma (COAG)
- Instruction in the administration of eye drops for COAG
- Inclusion of an assessment of sight in the 75+ health check
- Instruction in the use of low vision aids (LVAs).

2 In addition, it reiterates the importance of the following measures in terms of promoting improvements in the quality of life elderly people, and of helping them maintain their independence:

- Better awareness of the potential and limitations of low vision aids
- Offering blind and partially sighted persons the opportunity of registration.

3 A recurrent theme of the report is that poor vision should not be regarded as an inevitable part of ageing. The early detection of visual impairment in the elderly could in many cases lead to a reduction in public expenditure.

September 1994

Information and Outcomes in Ophthalmology

Summary of conclusions and recommendations

1 The five categories of information required for effective operation of the speciality of ophthalmology are:

- data on need
- cost effectiveness information (cost, health gain)
- activity data
- service quality information
- clinical audit data.

2 The groups responsible for providing the above, and the purposes for which each category of information is required, are summarised in Figure 1.

3 The use of outcome indicators should take account of current concerns among clinicians and others about training requirements, the impact of some new developments in surgical techniques, and the selection of patients for treatment.

4 Three categories of outcome indicator for cataract surgery are recommended:

- clinical outcome
- functional change
- effects on the patient's quality of life.

5 The clinical outcome of cataract surgery can most appropriately be assessed by a single measure - the operating unit's endophthalmitis rate.

6 Functional change following a cataract operation can be measured in terms of improvements in the patient's visual acuity.

7 Sample retrospective surveys of discharged patients, commissioned by purchasers, should be used to assess changes in the quality of patients' lives following surgery.

8 In order to contain the costs of developing suitable questionnaires for quality of life surveys, and also to ensure consistency of data across the country, it is recommended that funding be provided centrally for this purpose.

January 1995