

Monitoring Cataract Surgical Outcomes: 'Hand Written' Registration Method

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Introduction

The purpose of this hand written method of monitoring cataract surgery outcomes is to provide a practical method, assisting cataract surgeons and programme managers to monitor qualitatively the results of their cataract surgery. Such monitoring is the key to improving the quality and results of our cataract surgery.

The hand registered method is quick, simple, and friendly to use!

The Process

At discharge

- Before the patient is discharged, the Snellen visual acuity (VA) in the operated eye is tested and is recorded in the case notes
- If the VA is less than ($<$) 6/60, it is rechecked, both with and without a pin-hole
- If the VA is $<$ 6/60, the eye is carefully examined to determine the cause of the poor vision
- The details for each patient are recorded on form A
- The discharge is only authorised once this has happened.

At 8 week follow-up

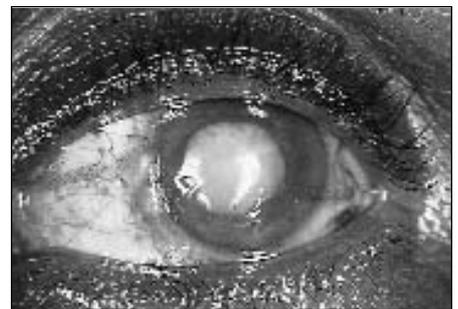
- At 8 week or more follow-up, the Snellen visual acuity with the spectacles that the patient has or will be wearing is tested and is recorded in the case notes
- If the VA is $<$ 6/60, the eye is carefully examined to determine the cause of the poor vision
- The details for each patient are recorded on form B.

How to Complete Form A: Discharge Visual Acuity

- Form A is completed at discharge
- It should be completed for all patients who have had a cataract operation except those under the age of 20 years and those cases of cataract due to trauma

- One row of the form is completed for each cataract operated eye
- Each form has space for 20 cataract operations.

1. **IOL** – record 'yes' if an IOL was implanted and 'no' if an IOL was not used.
2. **Surgical complications** – record any surgical complications.
3. **Discharge VA** (good, borderline, poor) – tick one of the 3 columns, depending on the measured visual acuity.
4. **Cause of poor outcome** (selection, surgery, spectacles) – if the VA is recorded as less than 6/60, the reason should be recorded in the appropriate column.
 - This should only be done if the VA is $<$ 6/60.
 - Only one column should be filled.
 - If there is more than one cause for the poor outcome, the clinically most significant cause should be identified.
 - **Selection** (co-existent disease or pathology causing poor vision) – specify the disease or pathology.
 - **Surgery** (intra-operative complication(s)) – specify the complication(s).
 - **Spectacles** (uncorrected refractive



Hypermature cataract

Photo: Gordon J Johnson

error) – tick this column if the VA improves to 6/60 or more with a pin-hole, or with spectacles which the patient does not have. 'No IOL' operations should be checked with +10.0D spectacles.

How to Complete Form B: Follow-up Visual Acuity

- Form B is completed at follow-up at least 8 weeks after surgery
- It should be completed for all patients who have had a cataract operation except those under the age of 20 years and those cases of cataract due to trauma

Questions and Answers: Dr Hans Limburg asks Dr Colin Cook

1. Why use the manual tally sheet system?

Monitoring of cataract surgical outcomes is a tool that is guaranteed to ensure that we always continue to improve the quality and outcome of our cataract surgery. The manual tally method is a simple, quick, and inexpensive method of doing this. It is suitable for use in any hospital that does not have access to a sophisticated computer system.

2. What are the experiences in Edendale Hospital?

The system has been used in our hospital since July 2000. It is an integral part of the clinical routine. The data analysis takes about 10 minutes each month. The results are reported and discussed at staff meetings each month. The system facilitates a positive culture of quality control and accountability amongst the staff, with everyone committed to improving results and outcome whenever possible.

3. What are the results in Edendale Hospital?

Because many of our patients have to travel considerable distances for follow-up, fewer than 30% attend for any follow-up. We, therefore, only monitor the day one visual acuities before patients are discharged. We are particularly interested in seeing that $<$ 5% of poor outcome (VA $<$ 6/60) on day one is due to surgical complication. We are also particularly interested in identifying and discussing the causes of poor outcome due to surgery.

4. How many other hospitals in the region use the manual tally sheet system?

We have encouraged the use of the manual tally system in a number of hospitals in the Southern Africa region. Each of the hospitals has been advised to modify the system to best suit their own situations. We have not monitored their results, only whether they are or are not monitoring. In the planning and development of our Vision 2020 programmes, the manual monitoring of our cataract surgery outcomes is something that can be immediately and simply implemented.

Hand Written Method

- Decrease percentage with poor outcome due to surgery or need for spectacles.

What if the Results are Not Good?

Action to improve results is advisable if:

IOLs

- The percentage of cases receiving an IOL is less than 95%.

Take action to improve the availability and affordability of IOLs.

Surgical complications

- The posterior capsule rupture rate is more than 5%

- The vitreous loss rate is more than 5%
- The discharge uncorrected visual acuity is poor (<6/60) in more than 10% of cases.

Take action to improve the surgical technique by asking for advice from a good, experienced cataract surgeon.

Visual outcome

- The week 8 visual acuity with available correction is more than 5% poor outcome (<6/60)
- The week 8 visual acuity with available correction is less than 85% good outcome (6/6-6/18).

Analyse whether the major cause of poor

vision is surgical problems or correction of refractive errors.

Take action to improve the surgery as above.

Take action to provide at least best spherical correction spectacles at an affordable price.

Trends over time

- The trend over time is static outside the recommended limits
- The trend over time is worsening.

Carefully analyse the reasons for lack of improvement and take action to deal with the identified problems. □

Review Article

Monitoring Cataract Surgical Outcomes: Computerised Systems

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Introduction: Why Monitor?

It is well known that the world is facing a cataract crisis. The number of people blind from cataract increases annually, and, as the Earth's population ages, this increasing growth in cataract blindness is accelerating.¹ It is estimated that the elimination of cataract blindness will require over 30 million cataract operations to be carried out

every year by 2020 – a threefold increase in less than 20 years.

However, the cataract crisis is not solely a crisis due to low surgical output. In addition, there is evidence of a disturbingly high rate of poor surgical outcomes. In India, 15–25% of eyes see less than 6/60 with available correction.^{2,3} In China, nearly 40% of eyes had a poor outcome.⁴ The situation in Africa is unlikely to be any better.

Poor outcomes may be due to any of the following:

- Selection
- Surgery
- Spectacles and uncorrected refractive error

Outcomes can be improved by any measures that will:

- Improve case selection, and avoid surgery in patients who will not benefit



Computerised systems

Photo: Murray McGavin

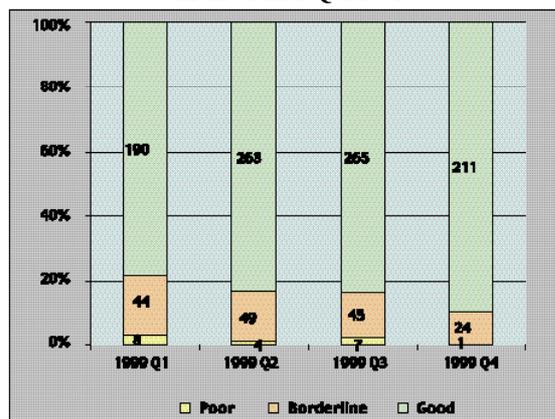
- Improve the quality of surgery, and avoid surgical complications
- Improve post-operative correction of refractive error, and minimise surgically induced ametropia.

A good cataract outcome monitoring system will contribute to all the above.

Table 1: An Example of an Automated Report of Surgical Complications

Total Operative Complications 01 January 2002 to 30 June 2002		
Surgical Complication		
• Nil	470	90.7%
• Capsulorhexis extended	14	2.7%
• Capsule rupture and vitreous loss	10	1.9%
• Unintended damage to iris	6	1.2%
• Zonular dehiscence, no vitreous loss	6	1.2%
• Capsule rupture, no vitreous loss	5	1.0%
• Zonular dehiscence and vitreous loss	3	0.6%
• Others	2	0.4%
• Small pupil, stretched	1	0.2%
• Supra-choroidal	1	0.2%
• haemorrhage	1	0.2%
Total	518	

Table 2: Quarterly Outcomes, Showing an Increase in the Proportion of Good Outcomes from 79% in the First Quarter to 89% in the Final Quarter



How to Monitor

Obviously the more data included in any monitoring system, the more information can be retrieved. However, collecting detailed data on outcomes can be time consuming. Eventually this leads to 'audit fatigue', and the information is no longer recorded. As a bare minimum, data should be collected on pre- and post-operative visual acuity, and on intra-operative complications. In a manual monitoring system, this may be as much data as can be analysed routinely. With a computerised system, analysis can be automated, so it is reasonable to collect more