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# Monitoring cataract surgical quality

Measuring quality helps to identify and correct the causes of poor outcomes.



Eye care service delivery in the islands in West Bengal. INDIA

Cataract is the world's leading cause of sight loss, responsible for 35% of global blindness. The quality of cataract surgery, and resulting patient satisfaction, are the engines that drive a sustainable cataract service. We must be able to measure quality before we can improve it; therefore, it is important to establish a systematic approach for monitoring and evaluating cataract surgical outcomes.

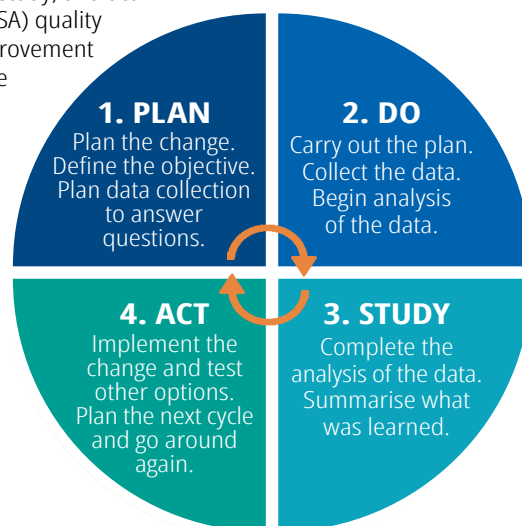
Cataract surgical outcome monitoring (CSOM) is a way to routinely monitor and evaluate cataract surgical outcomes by collecting and analysing preoperative, intraoperative, and postoperative data. These data are analysed, audited, and reported regularly (either monthly, quarterly, or annually) and shared with the hospital team, health and medical authorities, and other interested parties. The team may aim for specific targets to improve surgical quality (see panel).

Information gained during cataract surgical outcome monitoring can help **surgeons** to identify the main causes of poor outcomes and take corrective action to improve. In the last few decades, it has been shown that proactively monitoring the quality of surgical outcomes is associated with improvements in surgical outcomes. **Trainers** can use the data to monitor the 'surgical learning curve' of trainees, and **managers** can use the data to inform and monitor continuous quality improvement processes that involve the whole eye care team – e.g. by using the 'Plan, do, study and act' (PDSA) cycle, as shown in Figure 1.

Implementing a good cataract quality improvement programme, strengthening cataract surgical outcome monitoring, and encouraging eye surgeons to monitor their own results, provides opportunities to create a culture of audit and support, resulting in overall improvement.

It is very important to note that outcome monitoring should not be used to compare individual surgeons or centres. **We should not be tempted to reject patients with complicated cataracts and/or comorbidities**

**Figure 1** The plan, do, study, and act (PDSA) quality improvement cycle



**for the sake of an audit, as they may benefit greatly from even partial improvement of their sight.**

## How to monitor cataract surgical outcomes

Collect the following data for each patient, as routinely as possible:

- Preoperative presenting visual acuity (PVA) at days 1–3, 1 week, and 4+ weeks (see definition of PVA in the panel). Indicate whether the PVA is unaided/uncorrected or if spectacles are worn
- Any improvement in visual acuity (VA) with pinhole
- Any data on pre-existing co-morbidities
- Intraoperative complications, such as posterior capsule rupture
- Postoperative complications, such as corneal oedema or endophthalmitis
- Refractive surprises
- The reasons for poor outcomes: **Selection** (pre-existing disease), **Surgery** (surgical complications), **Spectacles** (failure to correct postoperative refractive error), **Sequelae** (long-term

complications such as posterior capsule opacification, retinal detachment, or corneal complications).

If operating on patients with limited preoperative vision, visual acuity (VA) will be an adequate outcome measure. However, for patients whose vision may be 6/18 or better preoperatively (often those undergoing phacoemulsification), patient-reported outcome measures (PROMs) such as Catquest-9SF or Cat-PROM5 are appropriate validated tools.<sup>4</sup>

Patient experience and patient satisfaction can also be measured to monitor other aspects of the quality of the service (e.g., waiting times in clinic, perioperative pain management, or patient information).

### How to monitor cataract surgical outcomes in low-resource settings

In high-income countries and other well-resourced settings, where local and national outcome monitoring systems are in place, cataract outcomes are often routinely recorded and reported. In lower-resource settings, other methods of outcome monitoring may be needed. For example:

- Data can be collected on paper forms, and/or stored electronically in simple Excel spreadsheets
- BOOST (Better Operative Outcomes Software Tool) can be used. This is an online app which allows surgeons to capture, analyse and monitor cataract outcome data ([boostcataract.org](http://boostcataract.org))
- Some centres have electronic medical records which may have auditing functions.

### Cataract surgical outcome monitoring and WHO recommendations

Cataract surgical outcome monitoring, and its reporting, varies widely across centres worldwide. Where data are available from lower-income facilities, the outcomes often fall below World Health Organization (WHO) recommendations for cataract surgical outcomes. Meeting these recommendations has become even more difficult now that WHO has raised the cut-off for 'good vision' from 6/18 to 6/12. At the time of going to print, the latest WHO recommendation is that  $\geq 80\%$  of eyes operated should have postoperative presenting visual acuity (PVA) of  $\geq 6/12$  (the new recommendations do not contain targets for 'borderline' or 'poor' vision).

**Postoperative presenting visual acuity (PVA)** is defined as postoperative unaided distance visual acuity or, if spectacles or contact lenses are worn to the assessment, with the person wearing these. Postoperative presenting visual acuity should be tested between 4 and 12 weeks postoperatively.

WHO also recommends that countries track postoperative refraction and postoperative complication rates (e.g. posterior capsule rupture with vitreous loss, endophthalmitis, and unplanned return to the operating theatre); these targets should be based on local evidence.