SURGICAL AUDIT & PEER REVIEW

CPD

continuing professional development

RANZCO
The Royal Australian and New Zealand College of Ophthalmologists
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Message from the College

Surgical audit and peer review are important strategies in improving standards in medical and surgical care.

The College authorises this handbook for the guidance of all Fellows in fulfilling the requirement, introduced for the 2006-2008 CPD triennium, to earn at least 30 points at Level 2 in the area of Clinical Expertise.

To assist Fellows in this, the College’s CPD Committee set up an Audit Working Group to develop models of best practice for ophthalmic surgical and clinical audit.

This Guide to Ophthalmic Surgical Audit and Peer Review is to be used by individual ophthalmologists and hospital surgical units to improve practice and thus the delivery of patient care. Hospital Administrations are encouraged to provide adequate resources for these important activities.

The College thanks the Royal Australasian College of Surgeons (RACS) for permission to utilise and adapt content and guidelines from their own guide, and acknowledges the intellectual copyright of RACS content utilised from their handbook.

This handbook is in two sections. Section A describes what you need to do to prepare and conduct your audit. Section B provides useful and informative background material.

For further information and support, contact the CPD Committee Member in your region. Their names and contact details are available from the CPD section of the College website www.ranzco.edu

This guide was compiled by the Audit Working Group, a sub-committee of The RANZCO CPD Committee

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1. **Surgical Audit – What is it and why do it?**

Surgical audit is the systematic critical analysis of the quality of actual surgical performance and outcomes, which is reviewed by peers against explicit criteria or recognised standards, and then used to inform and improve clinical practice and ultimately the quality of care for patients.

Comparing your clinical performance and outcomes, and that of your team, to accepted standards of what that performance should be, is intended to provide a stimulus and source of material for learning and quality improvement.

The aims of audit are:
- to identify ways of improving the quality of care for patients
- to assist in the continuing education of ophthalmologists, making best use of resources for ophthalmic surgical services.

2. **The Surgical Audit Cycle**

Surgical audit is based on a five-step cycle:

**STEP 1 - Determine scope:**
Make a thoughtful decision about which areas of surgical practice to review.

**STEP 2 - Select standards:**
Find a clear description of what is good practice in each area against which you may compare the results of your audit.

**STEP 3 - Collect data:**
Collect relevant data.

**STEP 4 - Present and interpret results with peer review:**
Compare your results to standards and/or those of peers, discuss with your peers and decide what changes may lead to improvement in your patient care, e.g. learning new skills, changes in practice or systems.

**STEP 5 - Make changes and monitor progress:**
Alter or confirm your practice in accord with the results of analysis and consultation with your peers, then check that improvement has occurred.
2.1 Determine Scope

You should clearly define the scope, or topic, for your audit. Failure to clearly define this may result in insufficient or inappropriate data being collected. You can report indicators only if there is a sufficient volume of cases to give a meaningful numerator or denominator.

Common areas in the scope of an audit include:

- cataract refractive outcomes
- visual outcome of specific surgery
- unplanned readmission or re-operation rates
- positive and negative outcomes
- operation-specific complications
- process of care, such as pre-operative care
- use of investigations
- justification of management
- patient satisfaction.

In general, outcomes should be simple, well defined, easily measurable, relevant and have a valid relationship to performance.

It has been traditional for audits to focus on adverse events, e.g. death and complications, reflecting an underlying assumption that adverse events are a consequence of poor quality of clinical care. A review of adverse events should aim to identify system errors to enable improvements in patient care.

Audit of the outcome of a disease process for surgical intervention may require a measure of the quality of life, activities of daily living or objective assessment of the symptoms the operation was intended to reduce. There are a number of validated quality of life measures which you can select from e.g. VF 14.

Audit should recognise what is done well and the achievements of an ophthalmologist, or unit, or service. Comparing 6-12 month time periods may allow improvement to be demonstrated as a result of changes in practice.

It has been demonstrated that audit and its associated peer review do lead to changes and improvements in surgical practice. In order to achieve the outcomes the audit cycle should concentrate on areas of clinical importance, continue over time and involve a cycle of analysis, reflection, dissemination and education. Changes in practice will be gradual but over time will occur.

Your audit may take any of the following forms:

- a total practice or workload audit: this covers all the surgical operations performed by you
- a selected audit from your surgical practice: this covers all patients who undergo a selected procedure, or who present with a particular problem
- American Board of Ophthalmology Case Note Review: this allows audit of clinic based activities by asking review of five patients with a specific diagnosis. Three such reviews each year would meet the CPD audit requirements.
- a clinical unit audit: this is conducted by a clinical unit in which individual surgeons may participate
- a group or specialty audit: this is conducted by or under the auspices of a group or specialty society, e.g. the ANZ Glaucoma Special Interest group
- a focused audit, e.g. an ACHS indicator that looks at one indicator issue and the factors that influence it: e.g. what is the rate of unplanned vitrectomy at the time of cataract surgery, rate of unplanned reoperations within 28 days of primary surgery, etc.
Total Practice Audit

A total practice audit is an audit of all of your cases treated on an ongoing basis. While this is THE goal, it is recognised that in some circumstances it is unrealistic. A total practice audit enables you to identify patterns and trends in your practice by observing changes in throughput (caseload), procedures performed and outcomes. One period needs to be compared with another, and each needs to be long enough to have sufficient cases.

A useful general tip is to start small, then gradually increase the scope of your audit.

2.2 Select Standards

Decide the standards of good practice for your selected topic/practice area. Decide what information you need and what is irrelevant. To do this:

- use evidence-based research and guidelines
- adapt existing local guidelines for local relevance
- use an accessible library for evidence about effective practice and develop new guidelines
- look to your specialty group to define standards.

Clearly describe any existing standards or the process you will use to develop your standards. When reviewing existing standards or developing your own, consider whether the standards are measurable, specific and realistic:

- Will you be able to collect information that can be compared with the standards?
- Are you as clear as possible about what constitutes good practice in your chosen area?
- Can you foresee any reason that you cannot achieve these standards?

You may decide to use ideal standards, e.g. 100% compliance with national or RANZCO guidelines or select from a literature review. Alternatively, you may use minimum standards - the very least you consider to be acceptable - based on current practice and consensus or personal standards; or somewhere practicable in between, given the constraints of practice.

For effective self-education and change, the most useful standards are those relevant to the particular circumstances and environment in which you are working.

2.3 Collect Data

Consider what data you will collect, and how you will collect it. The most important principle is to collect quality data. Consider the following questions to help you decide on the best quality assessment method:

- What information do you need in order to answer the audit questions?
- From whom will you collect it?
- Should you collect it prospectively or retrospectively?
- How will you collect it, and who can assist you?
  During or after the operation, on a mobile device, on a computer, on a form, or by questionnaire, and by whom?

- How will you collect follow up data?
  By record review, by patient follow-up questionnaire, through the GP, by phone call, or by review of routine data, and by whom?

- How will you identify and select the cases for review in a prospective project?
  All patients, random selection, consecutive operations, all patients on the same day each week, or checklist to determine eligibility?

• How will you identify and select the cases in a retrospective review? From a register, medical records data, review of referrals, or from previous appointment schedules?

Ensure that you have adequate support people e.g. medical, nursing or clerical staff and medical records/information system staff, to collect and input all the data you require, and that it is complete. Will you collect/input the data yourself or review it before entry? It is wise to consider the accuracy of data. Who has the final say, for example, in an accurate diagnosis or grade of complication?

Can the data required be collected at least in part by downloading from a hospital information system? Can you rely on the accuracy of downloaded data? This will depend on who was responsible for entering it.

Before going on, pause to think how the data will look, how you will compare it to any standards, and how you will analyse the results of this comparison.

• Is the data to be collected relevant to the objectives of the surgical audit?
• Do you need to modify, expand or limit the objectives?
• Will the data you collect enable you adequately to assess how well the standards have been met?
• Do you need to modify the standards?
• Do you need to modify the data collection methods?

Data Sets - Minimum and Expanded Data Sets

To give guidance in collecting data that is essential for effective surgical audit, the College endorses Recommended Data sets that allow some consistency of data and comparison of outcomes.

The Minimum Data Set, which is the bare minimum of information, is particularly suited for large volume low risk procedures.

The Minimum Data Set is described in Appendix 1 on page 16.

For more effective audit, additional data is important. A further list of fields is included in the Expanded Data Set. This is especially geared towards general surgery and its specialties as well as for rural surgery.

The Expanded Data Set is described in Appendix 2 on page 17.

2.4 Present and Interpret Results with Peer Review

Audit is about continuously improving your practice by learning from experience and making changes. It is the changes you can produce, rather than the data collection itself, that ultimately are the most rewarding.

You should present the results of your audit at a clinical meeting that is designed to discuss clinical outcomes. This constitutes the peer review of the audit and is an integral part of performing a surgical audit.

Peer Review

Peer review is a learning exercise. Whilst rights, responsibilities, apportionment of blame, punishment, compensation and access to justice can be valid processes, they should not be confused with or interfere with the processes of education, risk management and quality assurance. Peer review is not an opportunity to blame or brag.

Peer review involves an evaluation of one’s work by one’s peers. Peers are other ophthalmologists with comparable training and experience. It is often helpful to include other non-surgical members of the team in the review group, e.g. a trainee or senior nursing staff. The review should be conducted in an atmosphere of confidentiality, of trust and teamwork, and be seen as an evolving process.
One form of peer review takes place through morbidity and mortality meetings, provided that the participants include the presenter’s peers. However, this type of peer review can be unstructured and informal. If morbidity and mortality meetings are used for audit peer review, they should be formally constituted and documented as described below.

Grand rounds hardly provide confidential peer review, but cases should be presented as an educational exercise. They are good opportunities to learn from one or more cases and do not replace formal surgical audit meetings.

A peer review meeting should allow a frank, non-confrontational discussion between colleagues of perceived problems and of points done well, which results in a practical plan for positive change if needed.

Confidentiality of the information used for and resulting from the audit is essential, both from the point of view of the rights of patients and of the individual ophthalmologist. It should reassure those ophthalmologists present that the discussion is a confidential professional peer review.

An outcome of peer review may be a well-planned educational workshop (or a grand round to educate a wider audience), that takes account of the results of the audit. This can be highly effective in this step of the audit cycle. In fact, there is evidence to suggest that feedback of audit data without subsequent relevant education does not change performance.

As a general guide, there are three types of surgical practice for the purposes of peer review:

- Ophthalmologists who work together with other specialists in a unit in a hospital or group. A unit should review the work of all its ophthalmologists on a regular basis, as determined by hospital policy and individual circumstances.
- An ophthalmologist who works as an individual, or heads a single specialist team in a hospital with other specialists also providing surgery in the same institution, but where there is no grouping of specialists into a unit. Peer review involves other ophthalmologists from the same or similar craft group and should take place for each ophthalmologist or surgical team on a regular basis.
- An ophthalmologist who is the only specialist for a hospital or region and has no surgical peers of the same grade in the institution. Such an ophthalmologist may need to organize peer review by an occasional visit to or from regionally based colleagues or by teleconference if meeting together is not practicable. (A registrar is not a peer of a consultant).

Rural and isolated ophthalmologists, and those working in small hospitals, should establish geographic or specialty based links with other ophthalmologists to facilitate peer review. Other options are teleconferences, and on-line chat groups or discussion forums.

It might be possible to organise an anonymous comparison of performance outcomes of ophthalmologists in a region, country or specialty. Please contact the Manager, Professional Standards and CPD at the College if you wish to pursue this option.

It can be valuable to combine surgical specialties or involve other clinical colleagues to add interest. Whether a surgical audit is presented to other hospital doctors or senior nursing staff is a local matter. The requirement for individual units or ophthalmologists in a hospital to report on surgical audit activities to their hospital management or quality units is also a local matter. It is expected, however, that most hospitals would want to receive an annual summary of surgical audit from each unit and ophthalmologist.

The following are suggestions for the conduct of peer review meetings:

- All ophthalmologists should be members of an active peer review group of two or more ophthalmologists.

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• Choose a conducive setting, e.g. privacy, coffee, minimal interruptions, and with data projection facilities.
• Rotate the Chair. It is most important to create equity and avoid bias, real or apparent. An alternative is to appoint an independent chair such as a medical director or a recently retired ophthalmologist.
• Schedule meetings with sufficient notice to give relevant staff the opportunity to attend.
• Keep a record of attendance at peer review meetings, to demonstrate satisfactory attendance.
• Think how often a peer review of an individual ophthalmologist’s work is carried out, ideally it should take place not less than six-monthly, and a Unit/Department peer review should occur monthly.
• Peer review should include both individual cases and examination of trends in practice over extended time periods. Outcome reviews can also include comparative assessments, focussed reviews of specific problems or procedures, and follow up of recent changes.
• The Chair should ensure all serious events are considered for appropriate review.
• Members should make efforts to identify quality issues, particularly system deficiencies, and appropriate actions to be taken, and bring these to the attention of the hospital medical and administrative hierarchy and/or the specialty group executive. See Chairman’s Report format below.
• At the end of the session, the Chair should record plans and recommendations, and pass them on to relevant managers. At the next audit meeting, the Chair should follow up any results and fill in the “final outcomes” column in the Chairman’s Report. [This cannot be filled in when the issues are first raised and actions are recommended].

Chairman’s Report Format

<table>
<thead>
<tr>
<th>Chairman</th>
<th>Date of meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Meeting group name (e.g. Ophthalmology Audit hospital XYZ)</td>
<td>Members present</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The issues could be presented in tabular format as follows

<table>
<thead>
<tr>
<th>Issue</th>
<th>Effect on patient and Hospital</th>
<th>Recommendation</th>
<th>Action by whom and when</th>
<th>Final outcome of report</th>
</tr>
</thead>
<tbody>
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</table>

Morbidity and Mortality Meetings

It is a local matter whether audit review meetings are combined with mortality and morbidity meetings, or whether they are conducted separately.

At morbidity and mortality meetings, all de-identified morbidities and mortalities should be listed. For the discussion, however, the Chairman of the morbidity and mortality meeting would normally identify only significant morbidities and selected deaths where there are learning or quality issues at stake.

Adverse Events

An adverse event may be defined as “unintentional harm arising from an episode of healthcare and not due to the disease process itself”. Major adverse events, such as endophthalmitis, suprachoroidal haemorrhage and unplanned re-operations, should also be discussed. Many minor adverse events, such as posterior capsule tear, vitreous loss, retained nuclear material, and iris injury, should be listed but would not normally be discussed.
Limited Adverse Occurrences Screening (LAOS) is an attempt to review a proportion of case notes and from them to identify adverse events that will enable systems and techniques to be reviewed. Because LAOS does not record whole practice, it is not recommended as a substitute for surgical audit. Efficient complete capture of adverse outcomes data can work in almost all hospital settings. It requires education of medical and nursing staff to be vigilant in remembering to record all adverse and sentinel events, preferably contemporaneously, in a manual or electronic register. It can enable external peer review and comparisons of similar hospitals.

**Sentinel Events (Critical Incidents)**

All sentinel events should be listed and discussed. A sentinel event may be defined as: “a relatively infrequent, clear-cut event that occurs independently of a patient’s condition; it commonly reflects hospital systems and process deficiencies; and results in outcomes for a patient”. Surgical examples include: catastrophe, operating on the wrong side/site or incorrect surgery. These events, and recommendations to avoid them, will require a response by the hospital authorities, not just the ophthalmologist involved. Some State Health Authorities require specific sentinel events to be reported within five days, followed by early investigation. The findings of an investigation into a sentinel event (root cause analysis) are likely to be known before a surgical audit meeting is held.

### 2.5 Make Changes and Monitor Progress

The final step is for you to implement any changes that are recommended. Implementation involves not just making changes but ensuring that everyone affected is educated and informed of the changes and the reasons. The impact or effects of the changes made then require follow up action. For example did they achieve the desired outcome, and have expectations been met? If you are not carrying out a continuous total practice audit, you will need to decide how best to conduct follow up.

- **When is the best time for you to do this follow-up?**
  
  Remember that many changes may take some time to have a significant effect, although some may be almost immediate. Make sure you allow enough time to avoid disappointing negative results.

- **How will you do the follow-up?**
  
  Do you need to repeat the full audit, or only those parts relevant to changes you made? Is there some other information source that might help you monitor your achievements?

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Section B: Background Information

3. What makes for Effective Audit?

Promotion of a culture of audit

Some of your colleagues may regard surgical audit as unnecessary or threatening, so it is essential that audit is undertaken in an atmosphere that highlights educational aspects, is regarded as non-threatening or ‘safe’, and is carried out in a culture of ‘no-blame’. This atmosphere clears the way for open discussion of findings and feelings concerning topics discussed in audit reviews. Creating such an environment depends on physical and social aspects and the culture of the practice or hospital in which you work. The importance of assuring quality outcomes by better risk management is now an accepted, necessary part of clinical practice.

Allocate time and resources

Audit should not be allowed to become a burden, as this will make participation difficult. It should be considered as part of normal clinical practice.

Getting help with data collection is important. Resources should be made available by your hospital, as clinical audit and peer review are requirements for maintaining CPD and credentialling as well as quality improvement in a surgical service. Critical incident monitoring is also a component of VMO contracts in some jurisdictions, and this may be a potential source of funds.

Oversee and verify data collection

It is important to collect the essential data only, and keep it simple. You should allocate responsibility for who collects which data. The data should be accurate and complete, with clinical details provided by clinicians. Review the data regularly and frequently, and troubleshoot immediately. Remember to look for:

- the complication that did not occur
- the registrar’s diagnosis that was misconceived
- the misinterpreted pathology report
- the reason for the misdiagnosis.

Productive peer review

Audit is effective only if we ‘close the feedback loop’ by following through on findings and outcomes.

Good follow up and implementation of change requires the ophthalmologists to work closely with management to put in place systems for quality improvement and risk management. Inform hospital administrators of safety and risk management aspects of recommendations from audit activities and mortality and morbidity meetings.

4. Audit in Public and Private Hospitals

Ophthalmologists working in public hospitals, particularly in teaching units, will usually have clerical staff and registrars to assist in data collection. Many will have a comprehensive audit system which facilitates audit meetings. It is then a matter of making time to attend those meetings and participate in the process.

In private hospitals, especially smaller ones and day surgeries, it may be more difficult to collect and analyse relevant data. Ophthalmologists have a role in encouraging managers and administrators in this.
Most hospitals already collect Clinical Indicators Data (for Australian Council for Healthcare Standards purposes) and this should be available from medical records/administration as a basis for limited surgical audit.

Most hospitals have electronic information systems that can support the process of data collection. IT support staff, when informed of the needs for surgical audit, may assist in networking, data capture and interfacing with locally designed or proprietary audit software packages.

Improved data collection and exchange between ophthalmologists and hospitals is important to enable ophthalmologists to carry out effective audit. There can be efficiencies if the ophthalmologist’s audit database is linked to one generated by the hospital information system. At the very least, patient identification information dates and procedures can be input from the hospital system, and in the case of private practice, by secretarial staff responsible for billing. Ophthalmologists are responsible to accurately record diagnosis, procedures, complications and outcomes. This information is also invaluable for the accuracy of the hospital record.

See what is available, or what can be developed, within individual hospitals and Area Health Services, to facilitate audit and peer review. Clinical Risk, Quality Improvement and Hospital Information (Medical Records) staff can provide help and advice with data collection.

In private practice, electronic data collection can be challenging. Some IT options and simple databases suitable for private rooms include Microsoft Access, FileMaker Pro or HanDBase.

5. **What Opportunities arise from Surgical Audit?**

   **Educational opportunities**
   
   For participants, surgical audit can:
   
   - encourage working as a group, and modifying attitudes and approaches to clinical problems
   - enhance critical approaches and provide a rational basis to changes in clinical practice
   - encourage learning about new technologies and procedures and when to use them
   - indicate deficiencies in knowledge and skills, and development of educational activities to address these
   - guide in developing improved standards of care.

   **Systemic improvement opportunities**

   Problems and deficiencies identified in “systems” should lead hospital authorities to redress the issues. Similarly individuals and teams can always improve.

   **Medical Indemnity Insurance**

   It is now a clear requirement by medical indemnity organisations for surgeons to understand and practice risk management and partake effectively in Continuing Professional Development (CPD) programs and be certified as such. Surgical audit and peer review are essential components of CPD.

   **Meeting CPD requirements**

   The College requires Fellows, each year, to earn at least 30 points at level 2 in the area of Clinical Expertise. Performing a surgical audit and peer review, including review activities and implementing practice changes will earn you 30 points at level 2 in the area of Clinical Expertise.
Verification
You should retain the following information about your surgical audit and peer review activities as verification of your audit activities if required:

- type and topic of audit
- dates of audit
- name of peer review groups or meetings to which you presented your audit results
- names of surgeons and others present
- outcomes and recommendations of the review
- plans for follow up
- details of any RANZCO approved audits you are part of.

6. What Resources are Required for Surgical Audit?

Manual systems
Audit can be conducted using manual, paper-based systems. Many ophthalmologists have succeeded with notebooks or card indexes, often with the help of sticky labels. However, the flexibility, speed and power of electronic data base management systems suggest that most future efforts will require suitable electronic systems. Electronic systems ultimately reduce duplication and facilitate data collection, verification and analysis.

Computer systems
A database management system is required. It may be written using commercially available general-purpose programs or it may be custom built. It is recommended that, where practicable, particularly for individuals in private practice, data be used for multiple purposes such as billing, reporting or clinical records, so that the system provides multiple benefits in addition to surgical audit.

Because manual data recording and entry is tedious and prone to error, it is recommended that advantage be taken where possible, of automated or semi-automated entry, such as bar codes, scanners, downloading from other systems or use of look-up tables, etc.

Mobile devices such as phones and tablets hold much promise in the immediate future for audit data capture on the move. They offer the opportunity for data entry using handwriting and voice in addition to a computer keyboard, and will be able to share information wirelessly through mobile phones and other wireless networks. They are still potentially fickle and need repeated backup to avoid data losses.

Log books
The College web-based surgical logbook, currently under review, provides all trainees with an effective data collection system. This might be capable of expansion for wider use among Fellows and this possibility is under review by the College.

7. Privacy, Qualified Privilege

Privacy
Confidentiality of the information used for and resulting from the audit process is essential, both for the individual patient and for the ophthalmologist. It is also important to reassure all participants at a peer review that discussion is a confidential professional peer review and not a witch hunt.

From December 2001, amendments to Australia’s Privacy Act (1988) had impact on audit data. You should ensure adherence to the following principles:

- that only necessary and accurate health information is kept
- that the information is used only for the purposes for which it was intended (unless patients specifically consent to secondary disclosure)
- that the information is stored securely at all times.
The NZ Privacy Act (1993) and Health Information Privacy Code (1994) also define similar principles for the collection, use, accuracy, storage and disclosure of health information relating to individuals. Health agencies are not permitted to assign a unique identifier to an individual unless this is necessary for the efficient functioning of the agency.

**Qualified Privilege**

RANZCO considers that confidentiality is essential for effective surgical audit. All discussions must remain strictly confidential. In most circumstances maintaining standard privacy guidelines is sufficient, however one means of assuring confidentiality for audit is qualified privilege.

Legal provision for qualified privilege exists at both State and Commonwealth levels in Australia. Ophthalmologists should make inquiries at the health service, hospital or day surgery unit to which they are credentialled.

In New Zealand, an application can be made for recognition as a Quality Assurance activity under the New Zealand Health Practitioners Competence Assurance Act 2003. This is often done through an application by the local district health board.

8. **Need more help?**

You may find it useful to look at these additional sources of information and websites to get you started on the audit process.

- Many ophthalmologists have considerable experience in surgical audit. These colleagues are a valuable resource as their experience can save others from having to re-invent the wheel.
- A course ‘Introduction to Audit’ is run at the annual RANZCO Scientific Congress. This course provides background for preparing for your audit and an opportunity to utilise the audit working group experience.
- www.ranzco.edu. The College website has useful information on audit.
- The RANZCO librarian at the Ronald Lowe library (RVEEH) can advise on audit and literature searches and obtain copies of relevant journal articles. There are many accessible online resources.
- Some software companies have audit programs for surgical use. They exhibit at RANZCO meetings and advertise in the medical press.
- There is often existing expertise within hospitals that can be called upon to assist in surgical audit.
- The New Zealand Ministry of Health has published a booklet Toward Clinical Excellence, which gives an excellent overview of clinical audit and peer review.
- Subspecialist Societies may also be able to offer advice on surgical audit and peer review.
- www.otago.ac.nz/ouaudit. The Otagao Clinical Audit unit is a not for profit initiative to help surgeons achieve clinical audit regardless of the size or type of practice. Please look at the website for more information.
- www.escrs.org. ESCR5 Refractive Surgery Outcomes: offers cataract and refractive surgeons the opportunity to record, audit and confidentially compare their refractive surgery outcomes with other surgeons across Europe and the world.
- www.assort.com. Developed in 1991 by Dr Noel Alpins to provide a comprehensive surgical outcome and management program specifically designed for Ophthalmologists.

*Ministry of Health 2002 Toward Clinical Excellence. NZ Govt, New Zealand.*
• When deciding on a minimum set of data for a pre-operative audit you might like to consider the one shown below. (UK National Electronic Cataract Surgery Survey, Johnston AL, Eye 2005 Vol 19(7):788-794).
  • Patient age and sex
  • Pre-operative visual acuity with the patient’s habitual correction in the operated eye
  • Cataract morphology
  • Reasons for guarded visual prognosis (these should be recorded pre-operatively, otherwise bias introduced)
  • Axial length
  • Keratometry
  • Predicted post-operative refraction
  • Details of technique used
  • Complications
  • Grade of Surgeon
  • Grade of anaesthetist
• Templates for Surgical Audit presentation are available to download from the RANZCO website at www.ranzco.edu

**Bibliography**


### Appendix 1: Minimum Data Set

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<tbody>
<tr>
<td>1.</td>
<td>Name or initials</td>
</tr>
<tr>
<td>2.</td>
<td>ID or case record number (unique identifier information is necessary only for linking patients’ admissions)</td>
</tr>
<tr>
<td>3.</td>
<td>Date of birth for calculation of age</td>
</tr>
<tr>
<td>4.</td>
<td>Sex male, female</td>
</tr>
<tr>
<td>5.</td>
<td>Diagnosis the final diagnosis [e.g. cataract, retinal detachment]</td>
</tr>
<tr>
<td>6.</td>
<td>Admission date for calculation of total length of stay, and pre-op and post-op stays (there is a special category for day case in ’admission type’)</td>
</tr>
<tr>
<td>7.</td>
<td>Discharge date if same as admission – day case could be assumed</td>
</tr>
<tr>
<td>8.</td>
<td>Operation date if performed</td>
</tr>
<tr>
<td>9.</td>
<td>Operation/procedure may be multiple or none</td>
</tr>
<tr>
<td>10.</td>
<td>Operation category elective, urgent, emergency, unplanned return to theatre</td>
</tr>
<tr>
<td>11.</td>
<td>Complications/Discharge outcomes these should be comprehensive and should specifically be surgery, medical, and system related: specific performance indicators may also be included. There should preferably be a sub-field that grades the severity of the complication, e.g.:</td>
</tr>
<tr>
<td></td>
<td>Grade 1: problems that did not prolong admission and had little impact on the patient’s well being, e.g. anterior capsule tear, iris stromal damage, etc.</td>
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<tr>
<td></td>
<td>Grade 2: Complication which prolongs stay and/or causes significant morbidity e.g. posterior capsule tear, zonular dialysis, descemets tear, etc.</td>
</tr>
<tr>
<td></td>
<td>Grade 3: Complication which necessitates intervention, return to theatre, intensive coronary care admission, life threatening, readmission to hospital e.g. retained lens material, endophthalmitis, iris prolapse, dislocated IOL, etc.</td>
</tr>
<tr>
<td></td>
<td>Grade 4: Death – reason should be indicated, including all other complications.</td>
</tr>
<tr>
<td>12.</td>
<td>Ophthalmologist identifier that allows the individual ophthalmologist, his/her assistant(s) and the place [hospital] of practice to be identified. These may be coded. This should include trainee status for logbook purposes.</td>
</tr>
</tbody>
</table>

**NB:** It can also be useful to include a free content field to record qualitative information.

- These may be related to specific procedure or outcome in a subspecialty
- Agreed clinical indicators [e.g. posterior capsule tear]
- Late outcomes [e.g. 1, 2, and 5 year acuity outcomes]
- Patient satisfaction

These fields should be considered very carefully as data overload is a danger to successful audit.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Name or initials</td>
</tr>
<tr>
<td>2</td>
<td>ID or case record number [U.R. information is necessary for linking patients’ admissions]</td>
</tr>
<tr>
<td>3</td>
<td>Date of birth for calculation of age</td>
</tr>
<tr>
<td>4</td>
<td>Sex male, female</td>
</tr>
<tr>
<td>5</td>
<td>Admission type elective, emergency, day case, unplanned, public/private</td>
</tr>
<tr>
<td>6</td>
<td>Readmission within 28 days for calculation of total length of stay, and pre-op and post-op stays (there is a special category for day case in ‘admission type’)</td>
</tr>
<tr>
<td>7</td>
<td>Admission date if performed</td>
</tr>
<tr>
<td>8</td>
<td>Operation date</td>
</tr>
<tr>
<td>9</td>
<td>Discharge date</td>
</tr>
<tr>
<td>10</td>
<td>Co-morbidities list relevant major co-morbidities (these determine outcomes e.g. diabetes, patient tremor, pseudoxfoliation, glaucoma, trauma, significant medications e.g. warfarin)</td>
</tr>
<tr>
<td>11</td>
<td>Presenting problem the presenting problem(s) or reason for surgery/procedure (e.g. posterior subcapsular cataract, rhegmatogenous retinal detachment)</td>
</tr>
<tr>
<td>12</td>
<td>Final diagnosis e.g. cataract, glaucoma</td>
</tr>
<tr>
<td>13</td>
<td>Operation performed may be multiple or none</td>
</tr>
<tr>
<td>14</td>
<td>Operation category elective, urgent, emergency, unplanned return to theatre</td>
</tr>
<tr>
<td>15</td>
<td>Operation magnitude complex, major, intermediate, minor</td>
</tr>
<tr>
<td>16</td>
<td>Ophthalmologist/assistant identifier (may be coded for hospital data set) level of Trainees assistance</td>
</tr>
<tr>
<td>17</td>
<td>Wound infection clean, clean/contaminated, contaminated, dirty, N/A</td>
</tr>
<tr>
<td>18</td>
<td>ASA grading a useful simple grading of patient health status which reflects patient status</td>
</tr>
<tr>
<td>19</td>
<td>Type of anaesthetic topical, local, regional, sedation, general</td>
</tr>
<tr>
<td>20</td>
<td>Prophylaxis e.g. Antibiotics</td>
</tr>
<tr>
<td>21</td>
<td>Pathological diagnosis where applicable the stage of disease should be a sub-field</td>
</tr>
<tr>
<td>22</td>
<td>Complications these should be comprehensive and should specifically be surgery, medical; and system related: specific performance indicators may also be included. There should preferably be a sub-field that grades the severity of the complication, e.g.:</td>
</tr>
<tr>
<td></td>
<td><strong>Grade 1</strong>: problems that did not prolong admission and had little impact on the patient’s well being, e.g. anterior capsule tear, iris stromal damage, etc.</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>
### Admission outcome

| 23. Admission outcome | discharged home; transferred to another service [rehabilitation, aged care, higher level of care (e.g. refer to vitreoretinal centre), or another hospital (and ultimate outcome) |

### Follow up outcome

| 24. Follow up outcome | one week/month follow up, late complications, positive outcomes. It is desirable to collect longer-term follow up data, to include both good and bad results, although there are challenges inherent in this. |

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- Patient satisfaction

These fields should be considered very carefully as data overload is a danger to successful audit.