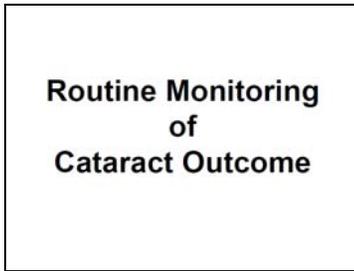
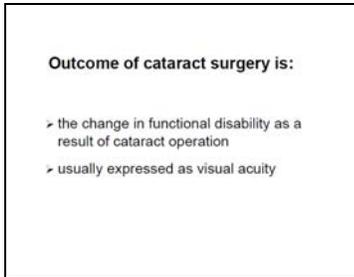


Text and thumbnails for training presentation



Slide 1:

Title slide

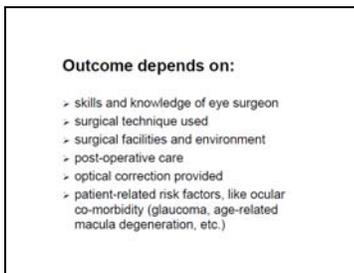


Slide 2:

By outcome of cataract surgery, we understand the change in functional disability as a result of cataract operation. This can be expressed in different ways: in terms of visual acuity, visual functioning and quality of life. It has been increasingly recognized that visual acuity alone may not be sensitive enough to measure the change in functional disability.

However, assessing visual function or quality of life is a lengthy procedure, requiring experienced interviewers and detailed questionnaires to be filled. In these questionnaires, patients are asked what activities they could do before and after surgery. As these activities should be appropriate for the target population, these questionnaires cannot be standardized.

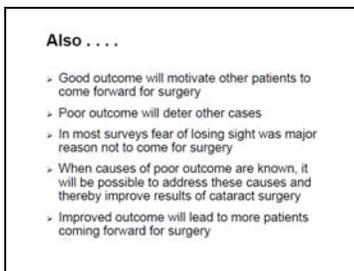
Since measuring visual acuity is a quick, standardized procedure, which is already part of the routine pre- and post-operative care, this is more appropriate for routine monitoring of cataract outcome.



Slide 3:

Outcome depends on:

- skills and knowledge of the eye surgeon
- surgical technique used
- surgical facilities and environment
- post-operative care
- optical correction provided
- patient-related risk factors, like ocular co-morbidity (glaucoma, age-related macular degeneration, etc.)



Slide 4:

Experience has shown that good outcome will motivate other patients to come forward for surgery. Patients are less likely to come for surgery if they know of poor outcome.

There have been a number of studies on reasons why patients who are blind, due to cataract, do not come for cataract operation (barriers to cataract surgery). In most surveys, fear of losing sight was a major reason not to come for surgery.

When causes of poor outcome are known, it will be possible to deal with these causes and thereby improve results of cataract surgery. Improved outcome will motivate more patients to come forward for surgery.

Barriers to cataract surgery:

Barrier	Madurai ('86)	Karnataka ('95)	South India ('98)
Fear of losing sight			12
Fear of surgery	17	12	6
Cannot afford	17	8	14
No company	25	21	
Not yet mature	2	24	
No time	14	5	15
No need	24	6	16
No information		6	
Other barriers	18		37

Slide 5:

This table shows three studies in southern India on barriers to cataract surgery. Although the barriers listed in the different studies are not entirely comparable, 'fear of surgery' and 'fear of losing sight' were important barriers in all three studies.

Best corrected vision after 1 year in clinical trials:

Visual Acuity	LAHAN		ARAVIND	
	ICCE + specs	ICCE + AC-IOL	ICCE + specs	ECCE + PC-IOL
6/6 - 6/18	93.2	89.9	95.5	96.6
< 6/18 - 6/60	4.6	7.5	2.9	1.1
< 6/60	2.2	2.6	1.6	2.3
n=	914	906	1401	1474
follow-up	91%		85%	

Slide 6:

Clinical trials were conducted in well equipped eye hospitals by trained surgeons. Results of visual acuity with best correction 1 year after surgery, were good. 90% or more of the operated eyes were able to see 6/18 or better. The difference between the various surgical procedures was minimal.

Average visual outcome in population based studies:

Place	Year	No. of eyes	% eyes with VA<6/60	
			With available correction	With 'best' correction
Nepal	1998	220	30.5	10.9
Shunyi, China	1998	116	44.8	-
Documen, China	1999	152	52.6	21.0
Karnataka, India	1995	2401	26.4	-
Ahmedabad, India	1997	776	24.0	-
Hyderabad, India	1999	131	21.4	16.8
Punjab, India	2000	428	23.1	-
Turkmenistan	2000	258	34.5	-

Slide 7:

However, it was a bit of a shock to see the results of outcome of cataract surgery in a number of population-based studies done in the nineties. In these surveys, the proportion of operated eyes, not able to see 6/60 with available correction, ranged from 21 - 53%. In the three studies where best correction was also performed, the poor outcome improved to 11 - 21%.

Outcome in population based surveys

Please note variation in:

- Post-operative period (weeks to decades)
- Quality of surgical facilities (basic to excellent)
- Experience and skills of surgeons (couchers)
- Supply and replacement of spectacles
- Initial good outcome may go down due to other eye disorders, reducing vision with age
- Outcome data from surveys may not do justice to recent advancements in IOL surgery, but may very well reflect what the public sees and what determines their expectations and trust to regain sight after surgery

Slide 8:

It should be realized that visual outcome in these population based studies is not entirely comparable with results produced in clinical trials. In population-based studies, there are great variations in:

- Length of post-operative period (weeks to decades)
- Quality of surgical facilities (basic to excellent)
- Experience and skills of surgeons (couching)
- Supply and replacement of spectacles

Initial good outcome may later decrease due to other eye disorders, like macular degeneration, diabetic retinopathy or others, reducing vision with age. Outcome data from surveys may not fairly represent recent advancements in Intra-Ocular Lens (IOL) surgery. However, It may reflect what the public sees and what determines their expectations and trust in regaining sight after surgery.

WHO guidelines on Visual Outcome of Cataract Surgery

	Post-operative acuity	Available correction	Best correction
Good	≥ 6/18	>80%	>90%
Borderline	< 6/18 - 6/60	<15%	<5%
Poor	< 6/60	<5%	<5%

Slide 9:

In 1998, the WHO formulated the following guidelines on Visual Outcome of Cataract Surgery:

	Post-operative acuity	Available correction	Best correction
Good	≥ 6/18	>80%	>90%
Borderline	< 6/18 - 6/60	<15%	<5%
Poor	< 6/60	<5%	<5%

Additional guidelines:

- Operations with IOL 90% or more (depending on local facilities)
- Surgical complications less than 10%
 - Capsula rupture less than 5%
 - Vitreous loss less than 5%
- Trends over time improving or static within recommended limits.

Slide 10

In many countries, only a small portion of the operated patients returns for follow-up. In such a situation, the visual outcome of those patients returning for follow-up may not fairly represent all operated patients.

Other indicators can also be used. Depending on local facilities, the proportion of operations with IOL can be used. Individual surgeons or eye hospitals may set their own target for this (say 90% or more). Surgical complications should be less than 10%, with capsule rupture less than 5% and vitreous loss less than 5%.

Trends over time on the various indicators should be improving or static within recommended limits.

Important aspects:

- Assess outcome at discharge and 4+ weeks
- Motivate all patients to come for review (incentives like spectacles, post-op drugs, no queue, may help)
- Use for age-related cataract only
- Assess cause of poor outcome
- Use manual or computer system for standardized analysis
- Is outcome representative for all operated patients if not all operated persons return for follow-up?

Slide 11:

In routine monitoring of cataract outcome, the following aspects are important:

- Assess outcome at discharge and at 4 weeks or more after the operation.
- Motivate all patients to come for review (incentives like spectacles, post-op drugs, no queue, may help).
- Only monitor age-related cataract cases.
- Assess the cause of poor outcome.
- Use the manual or computer system for standardized analysis.
- Are the visual outcome results representative for all operated patients if not all operated persons return for follow-up?

Purpose of monitoring cataract outcome:

- Encourage eye surgeons to monitor their own results over time
- Identify causes of poor outcome
 - Selection
 - Surgery
 - Spectacles
 - Sequelae
- Address causes to improve future outcome

Slide 12:

The purpose of monitoring cataract outcome is to encourage eye surgeons to monitor their own results over time. In case of poor visual outcome, they should be able to identify the cause of the poor outcome. These causes are grouped into 4 categories:

- Selection – due to other disease(s) causing vision loss.
- Surgery – due to operative or immediate post-operative complication(s).
- Spectacles – due to inadequate optical correction (uncorrected aphakia, wrong power of IOL, astigmatism, etc).
- Sequelae – due to late post-operative complication.

Addressing the above causes of poor visual outcome may help to improve future outcome.

Monitoring of cataract outcome should NOT be used to compare surgeons and institutions

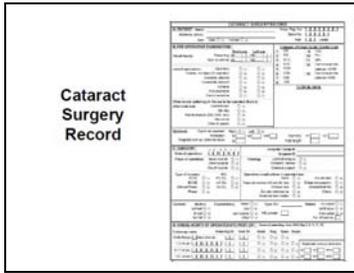
- Differences in indications for surgery
- Differences in target population
- Differences in facilities (microscope)
- Differences in surgical skills
- Competition may lead to false reporting
- Refusal to operate at risk patients
- Less operations done by residents

Slide 13:

Monitoring of cataract outcome should NOT be used to compare surgeons and institutions. There are many reasons why the results after cataract surgery differ between surgeons and clinics:

- Differences in indications for surgery.
- Differences in target population.
- Differences in facilities (operating microscope, A-scan).
- Differences in surgical skills.

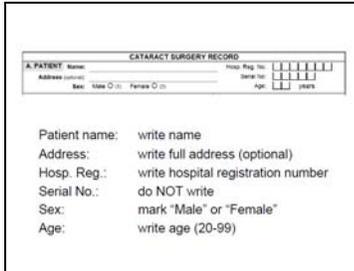
Comparing results between surgeons and hospitals may lead to competition and false reporting. Surgeons may refuse to operate 'at risk' patients, who could still benefit from cataract surgery. It may also lead to less operations being done by residents.



Slide 14:

This slide shows the Cataract Surgery Record form and its different components:

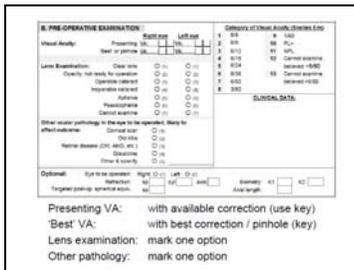
- A. Patient
- B. Pre-operative examination
- C. Surgery
- D. Visual acuity of operated eye post-op



Slide 15:

This slide shows how to complete various fields in Part A. Patient:

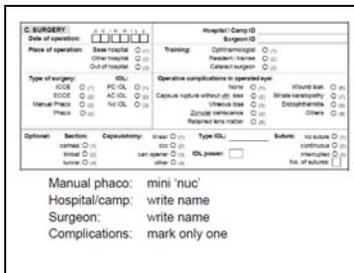
- Patient name: write name
- Address: write full address (optional)
- Hosp. Reg.: write hospital registration no.
- Serial No.: do NOT write: this will be generated by the computer
- Sex: mark "Male" or "Female"
- Age: write age (20-99)



Slide 16:

This slide shows how to complete various fields in Part B. Pre-operative examination:

- Presenting VA: with available correction (use code from 'Key for VA')
- 'Best' VA: with best correction / pinhole (use code from 'Key for VA')
- Lens examination: mark one option only
- Other pathology: mark one option
- Clinical data: this part is left blank. It can be used to write blood pressure, urine analysis and other data in case the Cataract Surgery Record is used as patient form.
- Eye to be operated: always mark right or left eye
- Refraction - sp: pre-operative spherical refraction (-15 to +15 Dioptres)
- Refraction - cyl: pre-operative cylindrical refraction (0 to -15 Dioptres)
- Refraction - axis: pre-operative spherical refraction (0 to 180 degrees)
- Target post-op SE: target post-operative spherical equivalent
- Biometry - K1: highest curvature of cornea (35-50)
- Biometry - K2: lowest curvature of cornea (35-50)
- Axial length: length of eye ball (20-27 mm)



Slide 17:

This slide shows how to complete various fields in Part C. Surgery:

- Date of operation: dd/mm/yy
- Place of operation: mark one option. 'Out of hospital means that surgery is conducted in an improvised setting, not in an operation theatre
- Type of Surgery: mark one option (SICS = small incision cataract surgery = Manual phaco = mini 'nuc')

