

Routine Monitoring of Cataract Outcome

Outcome of cataract surgery is:

- the change in functional disability as a result of cataract operation
- usually expressed as visual acuity

Outcome depends on:

- skills and knowledge of 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 macula degeneration, etc.)

Also

- Good outcome will motivate other patients to come forward for surgery
- Poor outcome will deter other cases
- In most surveys fear of losing sight was major reason not to come for surgery
- When causes of poor outcome are known, it will be possible to address these causes and thereby improve results of cataract surgery
- Improved outcome will lead to more patients coming 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

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%	

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	-
Doumen, 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	-

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

WHO guidelines on Visual Outcome of Cataract Surgery

	Post-operative acuity	Available correction	Best correction
Good	$\geq 6/18$	$>80\%$	$>90\%$
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.

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?

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

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

CATARACT SURGERY RECORD

A. PATIENT	Name: _____	Hosp. Reg. No: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
	Address (optional): _____	Serial No: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
	Sex: Male <input type="radio"/> (1) Female <input type="radio"/> (2)	Age: <input type="text"/> <input type="text"/> years

Patient name: write name

Address: write full address (optional)

Hosp. Reg.: write hospital registration number

Serial No.: do NOT write

Sex: mark "Male" or "Female"

Age: write age (20-99)

B. PRE-OPERATIVE EXAMINATION				Category of Visual Acuity (Snellen 6 m)			
		<u>Right eye</u>	<u>Left eye</u>				
Visual Acuity:	Presenting	VA: <input type="text"/>	<input type="text"/>	VA: <input type="text"/>	<input type="text"/>		
	'Best' or pinhole	VA: <input type="text"/>	<input type="text"/>	VA: <input type="text"/>	<input type="text"/>		
Lens Examination:	Clear lens	<input type="radio"/> (1)	<input type="radio"/> (1)	1	6/6	9	1/60
	Opacity, not ready for operation	<input type="radio"/> (2)	<input type="radio"/> (2)	2	6/9	10	PL+
	Operable cataract	<input type="radio"/> (3)	<input type="radio"/> (3)	3	6/12	11	NPL
	Inoperable cataract	<input type="radio"/> (4)	<input type="radio"/> (4)	4	6/18	12	Cannot examine, believed <6/60
	Aphakia	<input type="radio"/> (5)	<input type="radio"/> (5)	5	6/24	13	Cannot examine, believed >6/60
	Pseudophakia	<input type="radio"/> (6)	<input type="radio"/> (6)	6	6/36		
	Cannot examine	<input type="radio"/> (7)	<input type="radio"/> (7)	7	6/60		
				8	3/60		
				<u>CLINICAL DATA:</u>			
Other ocular pathology in the eye to be operated, likely to affect outcome:							
	Corneal scar	<input type="radio"/> (1)					
	Old iritis	<input type="radio"/> (2)					
	Retinal disease (DM, AMD, etc.)	<input type="radio"/> (3)					
	Glaucoma	<input type="radio"/> (4)					
	Other & specify	<input type="radio"/> (5)					
Optional:							
	Eye to be operated:	Right: <input type="radio"/> (1)	Left: <input type="radio"/> (2)				
	Refraction:	sp <input type="text"/>	cyl <input type="text"/>	axis <input type="text"/>	Biometry: K1	<input type="text"/>	K2 <input type="text"/>
	Targeted post-op. spherical equiv.	sp <input type="text"/>			Axial length:	<input type="text"/>	

Presenting VA: with available correction (use key)

'Best' VA: with best correction / pinhole (key)

Lens examination: mark one option

Other pathology: mark one option

C. SURGERY		d d / m m / y y		Hospital / Camp ID	
Date of operation:		<input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/>		Surgeon ID	
Place of operation:		Training:			
Base hospital <input type="radio"/> (1)		Ophthalmologist <input type="radio"/> (1)			
Other hospital <input type="radio"/> (2)		Resident / trainee <input type="radio"/> (2)			
Out of hospital <input type="radio"/> (3)		Cataract surgeon <input type="radio"/> (3)			
Type of surgery:		IOL:		Operative complications in operated eye:	
ICCE <input type="radio"/> (1)		PC IOL <input type="radio"/> (1)		None <input type="radio"/> (1)	
ECCE <input type="radio"/> (2)		AC IOL <input type="radio"/> (2)		Capsule rupture without vitr. loss <input type="radio"/> (2)	
Manual Phaco <input type="radio"/> (3)		No IOL <input type="radio"/> (3)		Vitreous loss <input type="radio"/> (3)	
Phaco <input type="radio"/> (4)				Zonular dehiscence <input type="radio"/> (4)	
				Retained lens matter <input type="radio"/> (5)	
				Wound leak <input type="radio"/> (6)	
				Striate keratopathy <input type="radio"/> (7)	
				Endophthalmitis <input type="radio"/> (8)	
				Others <input type="radio"/> (9)	
Optional:	Section:	Capsulotomy:	linear <input type="radio"/> (1)	Type IOL:	Suture:
	corneal <input type="radio"/> (1)		ccc <input type="radio"/> (2)		no suture <input type="radio"/> (1)
	limbal <input type="radio"/> (2)		can opener <input type="radio"/> (3)	IOL power: <input type="text"/>	continuous <input type="radio"/> (2)
	tunnel <input type="radio"/> (3)		other <input type="radio"/> (4)		interrupted <input type="radio"/> (3)
					No. of sutures: <input type="text"/>

Manual phaco: mini 'nuc'

Hospital/camp: write name

Surgeon: write name

Complications: mark only one

D. VISUAL ACUITY OF OPERATED EYE POST-OP.					Cause of presenting vision <6/60 (Key 8, 9, 10, 11, 12)				
Follow-up visits	Presenting VA	'Best' VA	Select.	Surg.	Specs	Sequel			
At discharge, <input type="text"/> days post-op.	<input type="text"/>	<input type="text"/>	<input type="radio"/> (1)	<input type="radio"/> (2)	<input type="radio"/> (3)				
1-3 wk po: <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/> (1)	<input type="radio"/> (2)	<input type="radio"/> (3)	<input type="radio"/> (4)	Optional: post-op refraction:		
4-11 wk po: <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/> (1)	<input type="radio"/> (2)	<input type="radio"/> (3)	<input type="radio"/> (4)	sp <input type="text"/>	cyl <input type="text"/>	axis <input type="text"/>
12+ wk po: <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/> (1)	<input type="radio"/> (2)	<input type="radio"/> (3)	<input type="radio"/> (4)	sp <input type="text"/>	cyl <input type="text"/>	axis <input type="text"/>

If presenting VA <6/60: mark one main cause

1st visit:

1-3 weeks post-op.

2nd visit:

4-11 weeks post-op.

3rd visit:

12 or more weeks post-op.

