

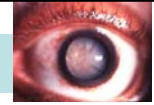
## Trend in cataract surgery in MOH Hospitals

~Report from Cataract Surgery Registry, 2007  
National Eye Database

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## Scope of presentation



1. Introduction
2. Methods
3. Results of Cataract Surgery Registry
  1. Patient Characteristics
  2. Practice Pattern
  3. Outcome
4. Limitation
5. Conclusion and recommendation

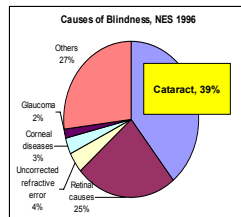


## Cataract Surgery –are we doing enough?

- Cataract – commonest cause of blindness

World Health Survey 2002

- Among elderly  $\geq 60$ yr -13.1% were told to have cataract
  - 57.4% have not had surgery
- Estimated cataract surgery performed in 2007 ~70,000 (MOH =22,051, private & universities ~50,000)
- Cataract Surgery Rate (CSR- no. of cataract surgery /million pop/yr )
  - M'sia- 2600
  - S'pore-5000
  - India- 5000



## European cataract surgery outcome- 1995-2006

Participating hospitals –from 20 to 35( 11-21 countries)  
Ascertainment rate for outcome data ->87%

- Demography
  - % woman->60%
  - Mean age- 73-75 yr
  - Second eye op-40%
  - Ocular co-mob- 40%

Outcome data

- Induced astig-<0.5D
- Diff planned –final refraction, average- 0.59-0.78D
- Post-op VA>6/12- 73% (2006) TO 90%(2005)
- Diff in ref between op eye and fellow eye
  - first eye op- 1.45d
  - Second eye op- 0.72D

What we do not know  
- How do we fare?



## Cataract Surgery Registry Objectives

- Registry of patients who had cataract surgery
  1. Determine distribution and number of cataract surgery performed
  2. Study patient characteristics
  3. Observe trend in practice pattern- type of surgery, anesthesia use, IOL
  4. Monitor surgery outcome and complication
    - vision
    - intraoperative complication
    - post-operative endophthalmitis rate



## Methods

- All patients who had cataract surgery
- Exclude secondary IOL implant
- 3 case record forms
  1. Pre-clerking- demography, ocular history, pre-op vision, planned refraction
  2. Operative record –
  3. Outcome
    1. -post-op cx- inf endophthalmitis and unplanned return to OT
    2. Vision
    3. Factors for poor vision <6/12

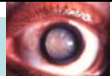


## Results 1. Stock and Flows

	2002	2003	2004	2007
Total number of cataract surgery performed at MOH hospitals (No. of Hospitals) (Source: MOH census returns)	14316 (29)	16498 (32)	18884 (33)	22051 (39)
Total number of cataract surgery registered to CSR (Number of SDP)	12798 (25)	16815 (32)	18392 (33)	18426 (32)
Total number of cataract surgery performed at MOH Hospitals and registered to CSR	12552	16039	17536	18426
% Cataract surgery performed at MOH based on census return and registered to CSR	87.6%	97.2%	92.9%	83.6%
Number of patients with post-operative vision recorded in CSR	12512	14683	6228	15786
% Patient with post-operative vision recorded in CSR	97.7%	87.3%	33.9%	85.7%



## Results 2. Patient characteristics

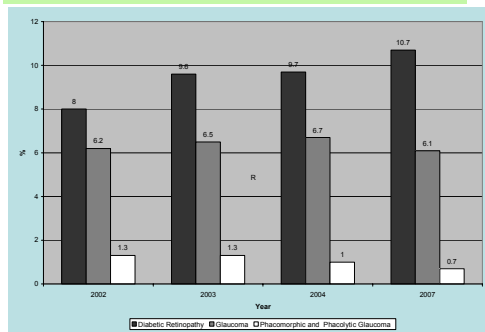


Patients' Demographic	2002	2003	2004	2007
Mean age (years)	64.0	63.7	63.5	64.3
% Women	51.0	50.0	51.0	52.1
% Second eye surgery	30.0	29.5	29.8	30.2
% with systemic co-morbidity	56.7	59.1	59.9	67.5
% Ocular co-morbidity in operated eye	28.8	36.0	38.0	32.4



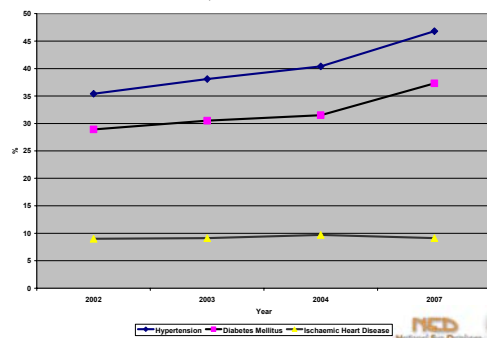
## Ocular co-morbidity

Ocular co-mob: DR (10%), Glaucoma(6%)



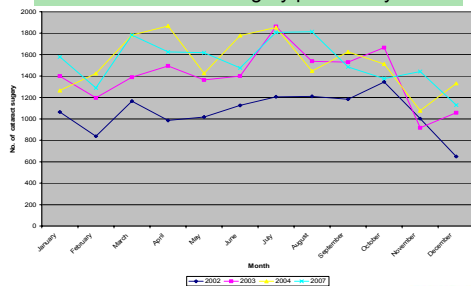
## Systemic Co-Morbidity

HPT- 46.9%, DM- 37.3%



## Results 3. Practice Pattern

Number of cataract Surgery perform by month



Over the years, similar patter with lower number from October to March



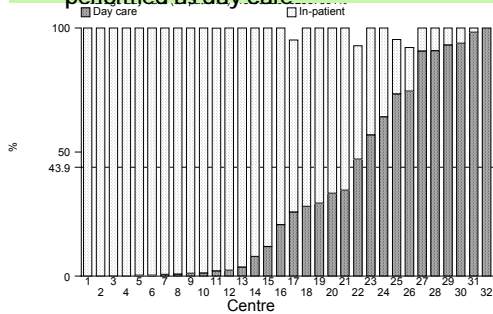
## Results 3. Practice Pattern

	2003	2004	2007
No. of cataract surgery performed (excluding surgery in children and combined surgery)	15981	17336	11777
Number of SDP	32	33	32
Surgery done as day care (%)	38.1%	40.0%	43.9%
Number of SDP with 0% day care	3	2	4
Number of SDP with <50% surgery done as day care (%)	22 (68.8%)	19 (75.8%)	19 (65.5%)

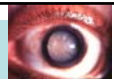


## Cataract surgery care setting

Less than half of the cataract surgery is performed as day care



## Practice Pattern



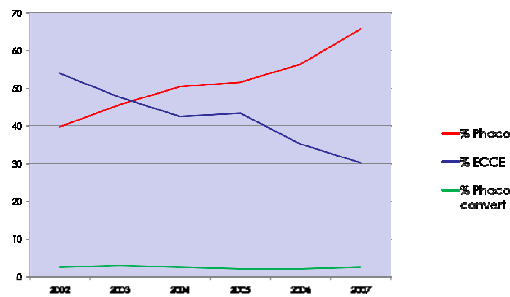
	2002	2003	2004	*2005	*2006	2007
% Phaco	39.7	45.6	50.4	51.6	56.3	65.7
% ECCE	54	47.6	42.5	43.4	35.1	30.1
% Phaco convert	2.4	2.9	2.5	-	-	2.4
% IOL	97.3	97.5	97.6	-	-	98.0
% Foldable IOL	26.5	37.8	45.6	-	-	68.1

\* Data from service census

Cataract Surgery Registry Report, National Eye Database (NED)



## Changing trend - type of cataract surgery



## Changing trend in anaesthesia

	2002	2003	2004	2007
% Local anaesthesia	93.6	93.2	92.5	93.4
% Subtenon	47	52	54	56.6
% Topical	12	18	23	27.5
% Peribulbar	22	16	27	7.3
% Retrobulbar	26	19	13	5.8
% Intracameral	-	-	-	1.4

## Results

### 4. Cataract surgery outcome

Refracted vision 6/12 or better	2002	2003	2004	2007
All	80.7	88.6	89.5	83.7
Phaco	86.9	93.2	93.8	86.3
ECCE	77.5	84.5	85.0	79.6

Complication	2002	2003	2004	2007
Intra-op PCR rate (%)	6.0	4.6	4.1	4.2
Post-op endophthalmitis rate (%)	0.20	0.24	0.16	0.20

## Results

### 4. IOL Biometry

	Planned refractive power		Final refractive power (SE)	
	All patients	ECCE	Phaco	
	N=11876	N=3624	N=8343	
Mean	-0.5	-1.1	-0.8	
SD	0.4	1.4	1.1	
Median	-0.5	-1	-0.7	
Minimum	-9	-10	-10	
Maximum	5	9.8	10	

Planned/targeted refractive power (SE based on A scan)  
 Within plano and -1.0 D  
 All eyes - 94.9%

Post-op Sph Equivalent (based on refraction)  
 Within plano and -1D  
 ECCE = 21.8%  
 Phaco = 35.4%

## Results

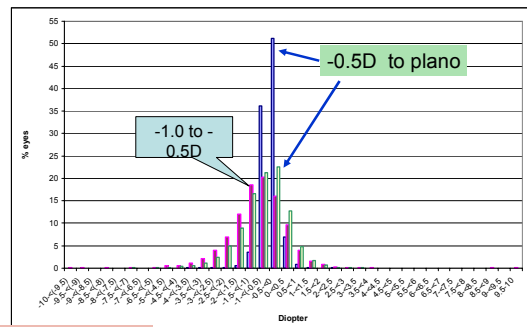
### 4. Cataract surgery outcome

Difference between planned and final SE among phaco pts

Mean	0.28D
Median	0.38 (sd1.15)D
Range	-9.3 to + 9.9D
Plano to -1.0	29.3%
within +0.5 to-0.5D	43.4%
within +1.0 to-1.0D	70.3%



## Proportion of planned and final SE



Post op SE-Myopic Shift,

Planned or targeted SE(all eyes) Final SE-ECCE Final SE-Phaco



## Limitations

- Ascertainment- case
- Outcome not submitted
- Data quality
  - missing values – type of admission, oral sedation, IOL material, foldable/non-foldable
  - Data accuracy- planned ref error, duration of surgery,
- Make data collection as part of work process
- Put CRF on medical records to al new glaucoma patients
- Data quality
  - check for completeness
  - Check for accuracy
  - Avoid duplication- highlight in case note that CRF has been entered



## Discussion

### Patient characteristics

- demography- constant
- 30% second eye op- lower than Europe by 10%
- high systemic co-mob - HPT & DM
- ocular co-mob- DM - cautious post- op monitoring

### Practice pattern -changing

- phaco (40% to 65%) - but need to do more phaco
- Local anesthesia- ↑ topical- but need to assess patients' comfort
- IOL- foldable

### Outcome-

- Vision outcome (83.7%)- need to improve, need evaluation
- Post op endophthalmitis @ 2 per 1000- need to reduce further
- Final SE- hyperopic shift



## Recommendation

1. Use of CSR data
  - audit- QI activities
  - Planning of service- Changing trend
  - Training – eCUSUM
2. Future
  - report card
    - no. of op- to calculate ascertainment
    - No. of adverse events
  - Identify research areas- inf enophthalmitis, plan and final refraction – accuracy of IOL Calculation , biometry
3. Invite participation from University and Private Doctors
  - Data will then be representative of national trend



## Acknowledgement

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- We wish to thank
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  - Registry coordinating Unit :SN Teng , Cik Norazah Md Yusoff, Cik Tuan Junaidah Tuan Jusoh

