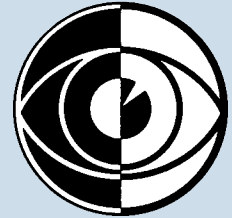


# Community Eye Health

Volume 13 Issue No. 34  
2000



INTERNATIONAL  
CENTRE FOR  
EYE HEALTH

AN INTERNATIONAL JOURNAL TO PROMOTE EYE HEALTH WORLDWIDE



SUPPORTING VISION 2020: THE RIGHT TO SIGHT

## VISION 2020: THE CATARACT CHALLENGE

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#### Cataract Blindness

The World Health Report published in 1998<sup>1</sup> estimated that there were 19.34 million people who are bilaterally blind (less than 3/60 in the better eye) from age-related cataract. This represented 43% of all blindness. The number of blind people in the world and the proportion due to cataract is increasing due to:

- **population growth:**  
6,000 million people now in the world, will increase to around 8,000 million in 2020
- **increasing longevity:**  
true for less economically developed countries as well as the industrialised world.

The result of these two factors means that the population aged over 60 years will double during the next 20 years from approximately 400 million now, to around 800

million in 2020. This increase in the elderly population will result in a greater number of people with visual loss and blindness from cataract who will need eye services.

The incidence of new cases of cataract blindness is unknown. Minassian and Mehra estimated that for India alone 3.8 million people become blind from cataract each year.<sup>2</sup> Globally the incidence figure is probably at least 5 million. A figure of 1000 new blind people from cataract per million population per year is used for planning purposes in developing countries.

#### 'Operable' Cataract Eyes

The term 'operable' cataract is used to define a cataract where the patient and the surgeon agree to proceed with cataract surgery. The indication for cataract surgery depends on various factors, including the expectations of the patient and the likely



*Bilateral cataract in a relatively young woman*

*Photo: Murray McGavin*

visual result of the procedure. As the results of cataract surgery improve, the degree of visual loss at which surgery is indicated becomes less, and, therefore, the number of 'operable' cataract eyes increases.

It is estimated that globally there are approximately 100 million eyes with cataract causing a visual acuity less than 6/60, and this figure is likely to be 3-4 times more for cataract causing an acuity of less than 6/18. These estimates are projected to double in the next 20 years if service delivery does not improve (Fig. 1).

#### Cataract Surgical Rate

In order to reduce the backlog of cataract blindness and 'operable' cataract it is necessary to operate each year on at least as many eyes as develop cataract (Fig. 2). The number of cataract operations performed per year, per million population is called the Cataract Surgical Rate (CSR). The CSR for the six WHO/IAPB regions in 1997 are estimated in Table 1.

Economically well-developed countries

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## Community Eye Health

Volume 13 Issue No. 34 2000



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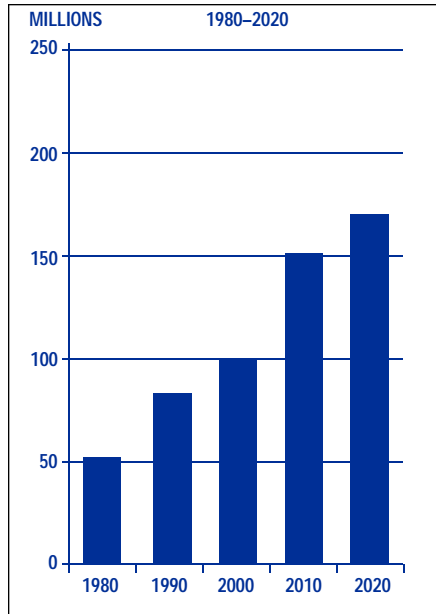
### Typeset by

Regent Typesetting, London

### Printed by

The Heyford Press Ltd.

ISSN 0953-6833



**Fig. 1: Global Estimates of the  
Number of Eyes with <math><6/60</math>  
due to Cataract**

usually perform between 4000 and 6000 cataract operations per million population per year. At this level of service it is unusual to find people who are blind from unoperated cataract – although several population-based studies show that even in industrialised countries not all those with visual impairment due to cataract, enquire or accept surgery. India has dramatically increased its CSR in the last 10 years from less than 1500 to a figure of around 3000 today. However, there is little evidence as yet, that this CSR of 3000 in India is sufficient to keep pace with the incidence of cataract causing an acuity of less than 6/60. In the middle income countries of Latin America and parts of Asia the CSR is between 500 and 2000 per mil-

lion per year. In most of Africa, China and the poorer countries of Asia the rate is often less than 500.

### Barriers to Cataract Surgery

The major reasons for low cataract surgical rates include:

- low demand because of fear of surgery
- low demand from poor people because of high cost of surgery
- low demand because of poor visual results
- lack of eye surgeons, particularly in Africa.

### Conclusion

The number of people blind from cataract in the world is increasing by approximately 1 million per year and the number of 'operable' cataract eyes with a visual acuity of less than 6/60 is increasing by 4–5 million per year.

Approximately 10 million cataract operations are performed each year in the world, with rates varying from 100 to 6000 operations per million population per year. In India the CSR rate has approximately doubled in the last 10 years, and is now around 3000, but in most developing countries of Asia the current cataract surgical rate is between 500 and 1500, and in many countries of Africa the CSR is less than 500.

In order to reduce the cataract backlog it is necessary to have a cataract surgical rate which is at least as great as the incidence of 'operable' cataract, where 'operable' depends upon the indication for surgery. In India and other countries of South East

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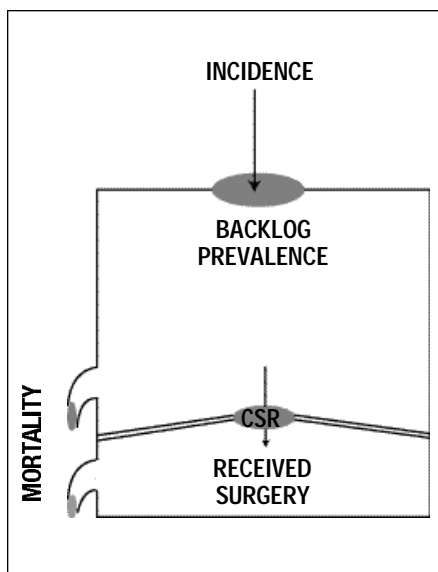
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**Fig. 2 : Schematic Representation of Cataract**

Asia, in order to deal with cataract causing an acuity less than 6/60, it is necessary to do at least 3000 operations per million population per year and perhaps more. In Africa, and other parts of the world where there is a lower percentage of elderly people in the population, a realistic target for the next 5-10 years is around 2000 operations/million population /year.

It is possible to achieve these rates if good quality cataract surgery is performed at a reasonable cost, close to where people live. Models for this type of cataract service have now been developed in several developing countries, most notably in India.

**References**

- 1 The World Health Report: Life in the 21<sup>st</sup> Century – A Vision for All. World Health Organization, Geneva, 1998. Page 47.
- 2 Minassian DC, Mehra V. 3.8 million blinded by cataract each year. *Br J Ophthalmol* 1990; **74**: 341-43.

☆ ☆ ☆



**Hypermature cataract**

*Photo: David Yorston*

**Table 1: Cataract Surgery Statistics – Estimates for 1997\***

WHO / IAPB Region	Population (millions)	Number of Cataract Ops. (millions)	C S R (ops./mill./yr)
<b>Africa</b>	<b>600</b>	<b>0.2</b>	<b>300</b>
range		(0.125–0.250)	(200–400)
<b>Americas</b>	<b>800</b>	<b>2.15</b>	<b>2700</b>
North	300	1.65	5500
Rest	500	0.5	1000
range	(0.25–0.75)	(500–1500)	
<b>Eastern Med</b>	<b>475</b>	<b>0.5</b>	<b>1000</b>
range		(0.25–0.75)	(500–1500)
<b>Europe</b>	<b>870</b>	<b>2.1</b>	<b>2400</b>
Western	385	1.5	4000
range		(1.2–1.9)	(3000–5000)
Russia	150	0.25	1500
range		(0.15–0.3)	(1000–2000)
Rest	335	0.35	1000
range		(0.17–0.5)	(500–1500)
<b>S.E. Asia</b>	<b>1460</b>	<b>3.5</b>	<b>2400</b>
India	960	3.0	3100
Rest	500	0.5	1000
range		(0.25–0.75)	(500–1500)
<b>W. Pacific</b>	<b>1635</b>	<b>1.1</b>	<b>670</b>
Australia & Japan	150	0.6	4000
range		(0.45–0.75)	(3000–5000)
China	1245	0.35	280
range		(0.125–0.6)	(100–400)
Rest	240	0.25	1000
range		(0.125–0.4)	(500–1500)
<b>TOTAL</b>	<b>5840</b>	<b>9.55</b>	<b>1635</b>

\*author's estimates

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