

# Victorian Ophthalmology Service Planning Framework

## Discussion Paper

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Metropolitan Health and Aged Care Services  
Department of Human Services

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## **1.0 Introduction**

### **1.1 Purpose**

The purpose of this paper is to identify and discuss the key current and future issues that affect ophthalmology practises in Victoria.

The document forms the basis of the consultation process in developing a service planning framework that will guide the provision of ophthalmology services for the coming years. The document identifies key issues and questions that need resolution in the development of the framework.

Responses from stakeholders to the issues raised in this discussion paper are requested to inform the development of a planning framework for ophthalmology service delivery in Victoria. The response schedule attached to this document should be used to provide feedback to the Department of Human Services.

### **1.2 Background**

The Metropolitan Health Strategy (DHS, 2003a) identifies the need to develop clear strategies for the provision of a range of specialist medical services including ophthalmology. The development of statewide service frameworks will guide the future provision of care, both in the design of the service system and the development of a suitable workforce to support it. It provides an opportunity to address long-standing and emerging issues for the delivery of ophthalmology services to Victorians.

Ophthalmology inpatient throughput is growing at 1.5% per annum and it is anticipated that growth will continue as the population ages and technologies continue to develop. The development of a framework for ophthalmology services will set the scene for enhancing care delivery and providing an appropriate range of services to meet Victoria's changing needs in this critical area of health care.

This framework will define the role of Victoria's hospitals in the delivery of ophthalmology services. In Victoria, the Royal Victorian Eye and Ear Hospital (RVEEH) has played a dominant role in the delivery of public sector ophthalmology services. The hospital has served Victoria well by providing a major role in delivery of inpatient, outpatient and emergency services. It is the major venue for training of medical and other clinical staff in ophthalmic care, and provides a focus for research activities. In developing this framework the opportunity exists to improve on Victoria's excellent system of care, ensuring that service quality and access continues to improve as service demands change.

### **1.3 Methodology**

This discussion paper has been developed by the Service Planning Section of the Metropolitan Health and Aged Care Services, Department of Human Services.

It has been developed utilising analysis of datasets of the department and other organisations, initial review of current literature and consultations with key stakeholders and members of the Ophthalmology Service Planning Advisory Committee. The Ophthalmology Service Planning Advisory Committee has endorsed the discussion paper.

### **1.4 Feedback**

Feedback on this paper can be made by completing the Response Submission Form attached to this document. Electronic Response Submission Forms are available at the website address: <http://www.dhs.vic.gov.au/ophthalmology>. Consultation forums will be advertised at this website address.

Written responses are requested by Thursday 8 April 2004 to:

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Further information can be found at the above website.

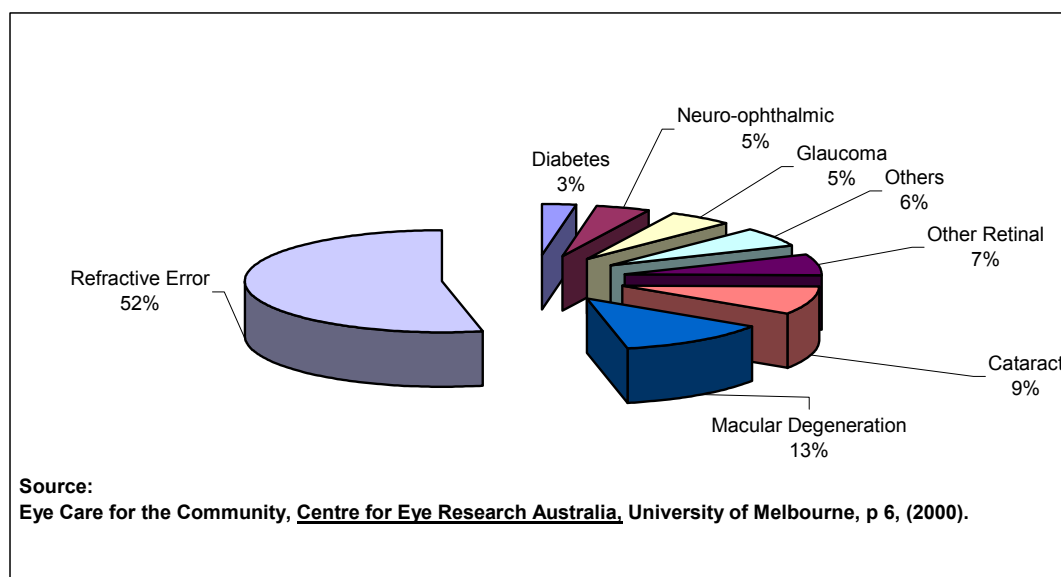
## 2.0 Specialty Overview

### 2.1 Eye disease epidemiology

Ophthalmology is the assessment, treatment and prevention of eye disease. The prevalence of eye disease has been studied in various communities and can be represented by understanding the main causes of eye disease and the level of visual impairment resulting from eye disease.

#### 2.1.1 The Visual Impairment Project

The Visual Impairment Project (VIP) undertaken by the Centre for Eye Research Australia (CERA) has been studying the prevalence and incidence of eye disease in Victoria since 1992. The main causes of visual impairment – deemed at less than driving vision (<6/12) reflect the main causes of eye disease (Figure 1) – and were identified as refractive error, age related macular degeneration (ARM), cataract, glaucoma and diabetic retinopathy (CERA, 2000).



**Figure 1: Visual Impairment in Australia (2000) - less than 6/12 vision (n=398,200)**

The key findings of the VIP include:

- The amount of visual impairment and blindness increases threefold with each decade of age.
- Half of visual impairment is due to refractive error.
- The prevalence of cataract increases so that by their 90s, everybody will have developed cataract and half will have cataract surgery.
- 450,000 Australians have diagnosed diabetes and an equal number have undiagnosed diabetes. All are at risk of developing diabetic eye disease. With early diagnosis and treatment up to 98% of severe vision loss can be prevented.
- Only half of people with diabetes had the recommended regular eye exam and one third have never been checked.
- One person in ten will develop glaucoma with half of those not knowing they have it. If detected and treated effectively, the loss of vision from glaucoma can be prevented or delayed.
- Two out of three people will develop AMD and one in four will suffer significant loss of vision from it. There is no effective prevention or treatment for most cases of AMD.
- Half of visual impairment is correctable and one quarter is preventable.

#### 2.1.2 Diabetes

Diabetic retinopathy, a microvascular complication of diabetes, is present in almost one-third of people with diabetes and threatens vision in 10 per cent. Compared with the general population, people with diabetes have a 25-fold risk of vision loss (Keeffe, 2003).

Using data acquired from the VIP, McKay et al (2000) found that the prevalence of diabetic retinopathy among people with self reported diabetes was 29.1%. The prevalence of untreated, vision threatening retinopathy was 2.8%.

### 2.1.3 Cataract

Cataract is a progressively developing opacity of the lens of the eye and, if left untreated, leads to progressive visual loss. The crude prevalence for any type of cataract has been estimated at between 30.6% and 33.6% (Rochtchina et al, 2003).

McCarty et al (2000) reported from the VIP that the weighted rate of any cataract in Victorians over the age of 40 years was 21.5% and that this rate increased dramatically with age.

In an assessment of projected needs for cataract surgery by lens opacity, visual acuity and patient concern, McCarty et al (1999a) found that the overall prevalence of any type of cataract that had not been surgically removed was 18%.

Rochtchina et al (2003) found that, in terms of the projected prevalence of age-related cataract and cataract surgery in Australia, the number of Australians aged 50 years and older affected by age-related cataract will be in the order of 2.74 million by the year 2021.

### 2.1.4 Glaucoma

Open-angle glaucoma (OAG) is the most common form of glaucoma accounting for 75-95% primary glaucomas, except in people of Eastern Asian descent. It results from an elevated pressure within the eye and, if left untreated, can cause gradual loss of vision and associated symptoms. The risk factors for developing OAG, identified from population studies, are raised intraocular pressure, increasing age, race, family history and myopia (Burr et al, 2002).

The prevalence of OAG in Australia has been found to be between 1.8% and 3%, with an increasing prevalence associated with age, women and diabetes (Weih et al, 2001; Mitchell et al, 1997).

### 2.1.5 Age Related Macular Degeneration

Macular degeneration is a degenerative condition affecting the central area of the retina, called the macula that is responsible for vision.

The VIP found that 67% of people will develop AMD and 25% will suffer a significant loss of vision from this condition (CERA, 2000).

The determinants of AMD are related to ageing and cigarette smoking and increases significantly from ages 70 and 80 years respectively. The high association with ageing will continue to increase the importance of AMD as the population ages (VanNewkirk et al, 2000).

Using data from the Blue Mountains Eye Study, Mitchell et al (1995) found that end-stage age-related macular degeneration was present in 1.9% of the population.

### 2.1.6 Refractive Error

Refractive error is a defect of focussing of the eye which affects distance and/or near vision and if uncorrected leads to vision impairment. It has been identified in a number of population-based studies as the leading cause of visual impairment in the developed world and a leading cause of functional blindness in the developing world.

Ten percent of Victorians have significant refractive error leading to an improvement of 1 or more lines of visual acuity with refraction. The risk of under corrected refractive error increased 1.8 times for every decade of life starting at 40 years of age (Liou et al, 1999). Undercorrected refractive error – defined as improvement of  $\geq 10$  letters (2+ lines on the logMAR chart) in subjects with presenting acuity 6/9 or worse – may be present in up to 22% (Thiagalingam et al, 2002).

### 2.1.7 Cost of Vision Loss

A number of direct and indirect costs from vision loss have been identified. These include:

#### *Government*

- Increased costs on the primary health system (vision loss increases the risk of falls and hip fractures and depression).
- Early entry into supported accommodation or aged care facility.
- Early reliance on supported home care.
- Early reliance on social welfare system (through loss of income and reduced productivity).
- Early admission to aged care facilities.

#### *Community*

- Increased pressure on other community services.
- Loss of participation in the community.

*Individual*

- Prevents healthy aging.
  - Increased mortality (risk of death is two times greater than the community average).
  - Creation of other health issues (physical and emotional, particularly depression).
  - Diminished quality of life through reduced independence, mobility and confidence.
- (CERA, 2000; Vision 2020, 2003)

## **2.2 Eye health care providers**

A range of health professionals are involved in the delivery of eye care services. These include ophthalmologists, general practitioners, optometrists, orthoptists and ophthalmic nurses. Services provided include prevention, education, research and treatment. The roles of these professions in delivering eye care services vary across settings and jurisdictions. Definitions of these professions are provided in Table 1.

**Table 1: Eye care professionals**

**Ophthalmologist**

An ophthalmologist is a medical doctor who is educated, trained and registered to provide total care of the eyes, from performing comprehensive eye examinations to prescribing corrective lenses, diagnosing diseases and disorders of the eye, and carrying out the medical and surgical procedures necessary for their treatment.

**General Practitioner**

General practitioners diagnose, treat and prevent human physical and mental disorders and injuries. They act as a gateway to the rest of the health care systems by virtue of their referrals to specialists and allied health professionals, hospital admissions, and pathology and imaging.

**Optometrist**

Optometrists are non-medical practitioners trained to assess the eye and the visual system, and diagnose refractive disorders. The optometrist prescribes and dispenses corrective and preventative devices and works hand in hand with other eye care professionals in assuring that patients are referred appropriately for diagnostic and therapeutic needs. Optometrists also prescribe drugs for certain eye conditions and monitor long-term eye conditions.

**Orthoptist**

Orthoptists specialise in the diagnosis and management of disorders of eye movements and associated vision problems. They perform investigative procedures appropriate to disorders of the eye and visual system and assist with the rehabilitation of patients with vision loss. Orthoptists also diagnose refractive disorders and prescribe glasses.

**Ophthalmic nurse**

An ophthalmic nurse has completed general nurse training then additional training to specialise in the nursing care of patients who have eye problems, whether they are in hospital, clinics or the community. Ophthalmic nurses test vision and perform other eye tests under medical direction.

(NSW Health, 2002; AMWAC, 2000; ASCO, 1997)

Traditionally there has been a close working relationship between ophthalmologists, orthoptists and ophthalmic nurses in the public and private sectors. Ophthalmologists often employ orthoptists and ophthalmic nurses in their private practices and day surgeries. Optometry, however, has traditionally worked independently in primary care with little direct interaction with other eye care professions. Until recently, all training for optometrists has been carried out separately from the other eye health care professionals.

The scope of practice for optometrists and orthoptists has increased in recent years due to changes to Victorian legislation. Changes to legislation introduced in 1996 allow orthoptists to prescribe glasses at the request or referral from an ophthalmologist or optometrist (where the request or referral has been made within six months before that measurement or prescription). Prescribing rights for optometrists have been in place in Victoria since August 2000, with over 100 trained and endorsed optometrists prescribing topical ophthalmic or ocular drugs for the treatment of anterior eye disease (DHS, 2003b).

### 3.0 Current Service Provision

#### 3.1 Overview of service provision

A range of providers in a range of settings provide eye health care services. The types of settings and their interactions are illustrated in Table 2.

**Table 2: Eye care services and providers**

Role/Function	Provide visual aids	Provide glasses	Prescribe refractive lenses	Screen for disease/ visual impair.	Non-surgical care	Prescribe drugs	Surgical correction
<b>Practitioner</b>							
Ophthalmologist	x	x	✓	✓	✓	✓	✓
Optometrist	✓	✓	✓	✓	✓	✓	x
Orthoptist	✓	x	✓	✓	✓	x	x
General Practitioner	x	x	x	✓	x	✓	x
Ophthalmic nurse	x	x	x	✓	x	x	✓
<b>Setting</b>							
Low vision clinic	✓	x	✓	x	✓	x	x
General practice	x	x	x	✓	✓	✓	✓
Hospital/day procedure centre inpatient	x	x	✓	✓	✓	✓	✓
Hospital outpatient	x	✓	✓	✓	✓	✓	x
Hospital emergency department	x	x	x	✓	✓	✓	✓
Non-hospital clinic (ophthalmologist, optometrist rooms)	✓	✓	✓	✓	✓	✓	✓

Table 2 indicates that general practitioners along with all other eye health care professionals are involved in screening for eye disease or impairment across a number of settings.

Ophthalmologists are the only providers of surgical correction of eye disease with ophthalmic nurses providing a key role in the delivery of surgical services in public and private facilities.

Ophthalmologists, optometrists and orthoptists are all involved in prescribing glasses and a range of non-surgical forms of eye care while ophthalmologists, general practitioners and suitably qualified optometrists can prescribe drugs.

## 3.2 Community based services

### 3.2.1 Medicare funded services

More than one million eye care services per year are provided on a non-admitted basis in private ophthalmology and optometry consulting rooms.

Private ophthalmology and optometry services are subsidised through the Commonwealth Medicare Benefit Schedule (MBS). In 2002-03, Victorian ophthalmologists provided a large number of consultations that were rebated through the MBS (Refer Table 3). Ophthalmology MBS data includes services provided by ophthalmologists and by other eye care practitioners on behalf of ophthalmologists such as orthoptists and nurses.

**Table 3: Ophthalmologist claims on Medicare Benefits Schedule 1996-97 to 2002-03 (Victoria) – Health Insurance Commission.**

Claim Number	Claims						
	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
<i>Table to be completed and provided in final report once data available from Health Insurance Commission</i>							
Other							
Grand Total							

In 2002-03, Victorian optometrists provided more than 1 million services that were rebated through the MBS (Table 4).

**Table 4: Optometrist claims on Medicare Benefits Schedule 1996-97 to 2002-03 (Victoria) – Health Insurance Commission. <sup>1</sup>**

Claim Number	Claims						
	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
10900	594,486	538,549	540,070	555,193	559,613	580,994	592,978
10918	193,652	221,877	250,088	269,733	283,472	298,875	312,568
10907	N/A	48,754	78,381	66,274	59,755	56,089	54,979
10916	15,615	23,034	26,823	31,456	35,568	37,855	42,637
10914	11,954	15,821	22,762	25,984	28,814	33,195	41,323
10913	15,933	17,148	19,630	19,775	19,598	18,913	21,696
10921	10,812	7,855	5,424	5,900	6,453	6,376	6,690
Other	2,616	3,744	4,909	4,837	4,694	4,652	5,309
Grand Total	845,068	876,782	948,087	979,152	997,967	1,036,949	1,078,180

General practitioners are also a provider of eye care, with 1.8% of reasons for encounter relating specifically to eye conditions and 7.3% of referrals from general practitioners are to ophthalmologists and 0.9% are to optometrists (AIHW and Uni Sydney, 2003).

In 2002-03 general practitioners provided 22,078,244 services<sup>2</sup> that were rebated through the MBS in Victoria. If 1.8% of these services related to eye conditions it can be estimated that 397,408 attendances were related to eye conditions. With regard to referrals, it can be estimated that Victorian general practitioners made 1,611,712 referrals to ophthalmologists and 198,704 referrals to optometrists.

<sup>1</sup> Optometry MBS claim numbers:

10900: Comprehensive Initial Consultation

10918: Subsequent Consultation

10907: Comp. Initial Consult. by another practitioner within 24 months of previous comp. consult.

10916: Brief Initial Consultation

10914: Other Comprehensive Consultation – progressive disorder

10913: Other Comprehensive Consultation – new signs or symptoms

10921: Contact lenses – myopia of 5.0 dioptres or greater.

<sup>2</sup> HIC MBS Group Statistics Reports [www.hic.gov.au](http://www.hic.gov.au)

## **3.2.2 Non-Medicare funded eye services**

### **3.2.2.1 Refractive laser surgery**

There are five refractive laser surgery centres in Victoria. Only a small number of therapeutic procedures funded through Medicare or the public hospital sector are reported to government. Refractive surgery activity is undocumented, as licensing and billing arrangements do not require reporting of activity to State and Commonwealth governments. However, despite the paucity of data, refractive laser surgery appears to be a significant area of ophthalmic practice in the private sector.

### **3.2.2.2 Orthoptics**

Orthoptists provide services in a range of settings including public hospitals, private ophthalmology clinics, low vision clinics and in orthoptic private practices. As orthoptic services provided in the community are not Medicare funded there is no data source that demonstrates the extent of services provided in Victoria.

Limited data are collected on orthoptic services by public hospitals however orthoptic services provided in ophthalmology practices are not recorded. There is a range of ophthalmology services billed under Medicare that are commonly performed by orthoptists on behalf of the ophthalmologists such as computerised perimetry and ultrasonography (A scans).

### **3.2.2.3 Ophthalmic nursing**

Ophthalmic nurses provide services in public and private hospitals in surgical and non-surgical settings. They may also be employed in ophthalmology private practices. Like orthoptists data on the services provided in the community are not recorded.

## **3.2.3 Other community eye care services**

### **3.2.3.1 Glasses**

With refractive error being the most common cause of visual impairment in Australia, access to eye tests and affordable glasses is an important issue. Glasses are commonly provided through optometrists and optical dispensers at market prices of which some private health insurance schemes provide a subsidy.

The Victorian Eyecare Service (VES) provides eye tests and glasses at a nominal cost for Victorians who hold a pensioner concession card or have a health care card for at least six months and their dependants under the age of 18 years. The VES is funded through the Department of Human Services and is run by the Victorian College of Optometry. Rural patients can have their eyes tested and glasses prescribed through a network of optometrists and ophthalmologists participating in the service. In 2002-03 VES received \$3.4 million to provide 67,000 people with subsidised glasses<sup>3</sup>. Metropolitan Melbourne VES provided 35,256 services and Country Victoria VES provided 29,180 services. An estimated budget of \$3.5 million has been allocated for 2003-04.

Subsidised glasses are also available from some Victorian public hospitals. The RVEEH provides subsidised glasses to eligible patients through a contracted service provider, currently the Victorian Eye Care Network (VECN). The Royal Children's Hospital provides vouchers for discount glasses.

### **3.2.3.2 Rehabilitation/low vision services**

There are a number of non-government organisations that provide services for the blind and visually impaired in Victoria. These include the Vision Australia Foundation (VAF), the Royal Victorian Institute for the Blind (RVIB), Guide Dogs Victoria, Lady Nell Seeing Eye Dogs, Villa Maria Society and the Christian Blind Mission International (CBMI).

The RVIB provides services to children and adults who are blind or vision impaired. RVIB is a non-profit organisation with more than 12,000 clients throughout Victoria.

VAF provides services and facilities for people who are blind and vision impaired, or are experiencing other disabilities. VAF helps older persons who have acquired vision loss later in life to remain independent in their homes for as long as possible by maximising the use of their remaining vision.

Guide Dogs Victoria is best known for the provision of Guide Dog Mobility. Guide dogs can enhance the independence and quality of life of many vision impaired people. Guide Dogs Victoria also provides a wider range of specialist mobility services including the Neurological Mobility Service and Children's Mobility Service.

Project Nexus has been formed to consider the amalgamation of the RVIB, the VAF and the Royal Blind Society of New South Wales (RBS). The governing bodies of all three organisations have unanimously agreed to proceed to merge and have signed a Heads of Agreement. Final approval for the merger is subject to a positive vote from members. This vote is expected to be held in 2004.

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<sup>3</sup> Media release from the Minister for Aged Care, Tuesday 24 June 2003

The proposed merged organisation is expected to offer: new and additional services; the opportunity to secure more funding from government and corporate bodies to invest in services; increased exposure, sponsorship opportunities and advocacy; and a greater influence on government policy.

### **3.2.3.3 Consumer support groups**

There is a variety of consumer groups in Victoria that provide support services to people with eye disease. These include (but are not limited to):

- Vision Australia Foundation (VAF)
- Royal Victorian Institute for the Blind (RVIB)
- Guide Dogs Australia
- Blepharospasm Support Group
- Blind Citizens Australia
- Diabetes Australia Victoria
- Eyes on Diabetes
- Glaucoma Australia / Melbourne Glaucoma Support Group
- The Lions Eye Health Program Australia - diabetes/glaucoma/amblyopia
- Macular Vision Loss Support Society of Australia (Victoria)
- Monovision Support Group of Victoria
- Retina Australia (Vic) Inc.
- Keratoconus Australia
- Vision 2020 Australia/The Vision Initiative

Q1. What are the barriers to people obtaining correction to refractive error?

Q2. How can these barriers be addressed?

### 3.3 Hospital services

Ophthalmology services are provided in hospital emergency, outpatient and inpatient departments. The department has three main data collections used in the hospital system for these services. These are the:

- Victorian Emergency Minimum Dataset (VEMD):
  - Records hospital emergency department presentations.
  - Only the major public emergency department with 24 hour emergency departments report data.
- Victorian Ambulatory Classification and Funding System (VACS):
  - Records outpatient attendances.
- Victorian Admitted Episode Dataset (VAED):
  - Records hospital inpatient separations
  - All public and private hospitals report data.

Emergency, outpatient and inpatient services exist to varying degrees across the public hospital sector. Appendix 1 provides an overview of the ophthalmology services provided by Victorian public hospitals that report to these data sources.

Data from each of these sources are presented in the next sections for the 5 year period 1998-99 to 2002-03.

#### 3.3.1 Emergency

The VEMD contains de-identified demographic, administrative and clinical data of presentations at the main Victorian public hospitals with 24-hour emergency departments. Data is not available from hospitals that do not provide 24-hour emergency services.

In 2002-03 there were 35,001 public ophthalmology emergency presentations reported through the VEMD. These were provided at 31 hospitals of which 21 (68%) were metropolitan hospitals and 10 (32%) were rural and regional. The RVEEH was the largest provider of emergency services with 17,192 (49%) presentations followed by Ballarat Health Service with 1,1314 (4%) and the Angliss Hospital with 949 (3%). Table 5 lists Victoria's ten largest public providers of emergency ophthalmology services. The full list is provided in Appendix 2.

There was an increase of 2,602 (8%) ophthalmology emergency presentations between 1998-99 and 2002-03 (Table 5) with most hospitals experiencing growth in demand during this period. The RVEEH, however, had a decrease in presentations of 3,021 (-15%) with the proportion of Victoria's ophthalmology emergency presentations treated at the RVEEH decreasing from 62% to 49%.

**Table 5: Ophthalmology emergency presentations in Victorian public hospitals - 1998-99 to 2002-03 (VEMD)**

Hospital	98-99	99-00	00-01	01-02	02-03	% 02-03	Growth
Royal Victorian Eye & Ear Hospital	20,213	21,172	18,017	17,056	17,192	49%	-15%
Ballarat Health Services	944	966	1,048	1,181	1,314	4%	39%
Angliss Hospital	705	727	788	849	949	3%	35%
Sunshine Hospital	159	260	312	636	893	3%	462%
New Mildura Base Hospital	364	735	751	814	885	3%	143%
Bendigo Health Care Group	891	945	960	937	874	2%	-2%
Latrobe Regional Hospital	811	941	962	867	859	2%	6%
Barwon Health [Geelong]	878	911	854	833	827	2%	-6%
Mercy Public Hospital [Werribee]	339	624	639	749	819	2%	142%
The Northern Hospital	477	715	668	650	742	2%	56%
Other	6,618	8,944	9,154	9,563	9,647	28%	46%
<b>Total</b>	<b>32,399</b>	<b>36,940</b>	<b>34,153</b>	<b>34,135</b>	<b>35,001</b>	<b>100%</b>	<b>8%</b>
% treated at RVEEH	62%	57%	53%	50%	49%		

##### 3.3.1.1 Metropolitan providers

The 21 metropolitan providers of ophthalmology emergency services treated a total of 27,412 emergency presentations in 2002-03, 78% of the State's presentations. There was an increase of 1,193 (5%) presentations in metropolitan hospitals between 1998-99 and 2002-03 (Table 6).

Outer metropolitan hospitals experienced growth of 2,078 (77%) presentations while the inner metropolitan hospitals had a decrease of 885 (-4%) presentations. This decreased growth reflects the decreased growth of the RVEEH as most other inner metropolitan hospitals experienced positive growth during this period (Refer Appendix 2).

### 3.3.1.2 Rural providers

The ten rural providers of ophthalmology emergency services that report to the VEMD treated a total of 7,589 (22%) ophthalmology presentations in 2002-03. This was an increase of 1,409 (23%) presentations since 1998-99 (Table 6).

**Table 6: Ophthalmology emergency presentations in metropolitan and rural Victoria - 1998-99 to 2002-03 (VEMD)**

	98-99	99-00	00-01	01-02	02-03	% 02-03	Difference	Growth
Inner metropolitan hospitals	23,536	25,932	22,698	22,051	22,651	65%	-885	-4%
Outer metropolitan hospitals	2,683	3,618	3,754	4,300	4,761	14%	2,078	77%
Total metropolitan hospitals	26,219	29,550	26,452	26,351	27,412	78%	1,193	5%
Rural and regional hospitals	6,180	7,390	7,701	7,784	7,589	22%	1,409	23%
Total Victorian hospitals	32,399	36,940	34,153	34,135	35,001	100%	2,602	8%
% Rural	19%	20%	23%	23%	22%			

### 3.3.1.3 Referral

In 2002-03, the majority of referrals for ophthalmology emergency presentations were by self, family or friends (85%) followed by Local Medical Officers (LMO) (8.8%). The RVEEH had a lower proportion of referrals by self, family or friends (81%) when compared with other public hospitals (88%) and a higher proportion of referrals by LMOs (13%) compared to 5% (Refer Table 7).

The decrease in numbers of emergency presentations to the RVEEH between 1998-99 and 2002-03 reflects the large decrease in the number of patients being reviewed in the emergency department from 3,308 to 506 (-85%). This is likely to reflect changes in the processes for reviewing emergency patients at the RVEEH.

Referrals by self, family or friends increased by 7% at the RVEEH and 52% across other public hospitals while referrals by LMOs decreased 31% at the RVEEH and increased 23% across other hospitals. The RVEEH treated 71% of all referrals from LMOs in 2002-03.

Patients referred from private specialists and other hospitals accounted for only a small proportion of referrals (0.4% and 0.2% respectively). Referrals from private specialists increased by 109% at the RVEEH and 6% at other hospitals while referrals from staff at other hospitals decreased by 90% at the RVEEH and increased by 163% across other hospitals.

**Table 7: Referral sources for ophthalmology emergency presentations - 1998-99 to 2002-03 (VEMD)**

Referral source	Presentations									
	RVEEH				Other public hospitals				Total Victoria	
	98-99	02-03	%02-03	Growth	98-99	02-03	%02-03	Growth	02-03	%02-03
Self family friends	13,085	13,942	81.0%	7%	10,370	15,730	88.0%	52%	29,672	85%
LMO incl local GP/Dentist	3,156	2,180	13.0%	-31%	730	899	5.0%	23%	3,079	8.8%
ED review this hospital	3,308	506	2.9%	-85%	754	816	4.6%	8%	1,322	3.8%
Other	320	423	2.5%	32%	186	172	1.0%	-8%	595	1.7%
Private specialist	35	73	0.4%	109%	49	52	0.3%	6%	125	0.4%
Outpatients any hospital	9	35	0.2%	289%	46	45	0.3%	-2%	80	0.2%
Staff from other hospitals	293	28	0.2%	-90%	16	42	0.2%	163%	70	0.2%
Nursing Home	6	5	0.0%	-17%	6	23	0.1%	283%	28	0.1%
Community Services Staff	-	-	0.0%	-	21	14	0.1%	-33%	14	0.0%
Ward/Inpatient this hosp	-	-	0.0%	-	0	6	0.0%	-	6	0.0%
Correctional Officer/Police	-	-	0.0%	-	5	5	0.0%	0%	5	0.0%
Hospital In The Home	-	-	0.0%	-	2	3	0.0%	50%	3	0.0%
Crisis Assessment Team	1	-	0.0%	-100%	1	2	0.0%	100%	2	0.0%
Grand Total	20,213	17,192	100.0%	-15%	12,186	17,809	100%	46%	35,001	100.0%

### 3.3.1.4 Triage

The VEMD has five triage categories which are listed in Table 8. In 2002-03 the majority of ophthalmology presentations were classified as non-urgent (50%) or semi-urgent (35%). Urgent presentations accounted for 13% of presentations while 2% of presentations were classified emergency. Compared to the combined total of other public hospitals, the RVEEH has a less urgent cohort of ophthalmology emergency presentations. Non-urgent presentations accounted for 81% of RVEEH's presentations compared with 20% for other public hospitals (Table 8).

Presentations classified as semi urgent, urgent and emergency were reported in lower proportions at the RVEEH when compared to other public hospitals. The RVEEH classified 0.1% of patients as emergency while other public hospitals reported 4.3% as emergency presentations.

Non-urgent presentations decreased by 25% at the RVEEH from 1998-99 to 2002-03 while semi-urgent patients increased 126%. Growth in emergency presentations at other public hospitals occurred for semi-urgent, urgent and emergency presentations while non-urgent presentations remained static.

**Table 8: Triage categories for ophthalmology emergency presentations - 1998-99 to 2002-03 (VEMD)**

Triage category	Presentations									
	RVEEH				Other public hospitals				Victoria	
	98-99	02-03	% 02-03	Growth	98-99	02-03	% 02-03	Growth	02-03	%02-03
1 Resuscitation	-	3	0.0%	-	15	13	0.1%	-13%	16	0%
2 Emergency	47	15	0.1%	-68%	334	763	4.3%	128%	778	2%
3 Urgent	268	276	2%	3%	2,194	4,287	24%	95%	4,563	13%
4 Semi-urgent	1,333	3,013	18%	126%	6,114	9,216	52%	51%	12,229	35%
5 Non-urgent	18,563	13,876	81%	-25%	3,527	3,530	20%	0%	17,406	50%
6 Dead on arrival	2	9	0%	350%	-	-	0%	-	9	0%
Total	20,213	17,192	100%	-15%	12,186	17,809	100%	46%	35,001	100%

### 3.3.1.5 Diagnosis

The most common reason for ophthalmology emergency presentations was "other specified disorders of the eye and adnexa" (26%) followed by "foreign body external eye" (24%) and "injury of the eye and orbit" (19%). Table 9 lists the ten most frequent diagnoses for ophthalmology emergency presentations. Refer Appendix 3 for all emergency diagnoses from 1998-99 to 2002-03.

In 2002-03 the most common reason for emergency presentation at the RVEEH was for "other disorders of the eye and adnexa" (36%) followed by "injury of the eye and orbit" (18%) and "foreign body external eye" (16%). Other public hospitals treated higher proportions of patients with "foreign body external eye" (32%) and "injury of the eye and orbit" (21%) when compared with the RVEEH.

There has been a decrease in presentations diagnosed as "other specified disorders of the eye and adnexa" at both the RVEEH and other public hospitals with increases in presentations diagnosed with "foreign body external eye" and "injury of the eye and orbit". This may be accounted for by improvements in coding standards over time.

**Table 9: Diagnosis of ophthalmology emergency presentation - 1998-99 to 2002-03 (VEMD)**

Diagnosis	Presentations									
	RVEEH				Other public hospitals				Total Victoria	
	98-99	02-03	%02-03	Growth	98-99	02-03	%02-03	Growth	02-03	%02-03
Other disorders eye/adnexa	8,818	6,228	36%	-29%	2,906	2,698	15%	-7%	8,926	26%
Foreign body external eye	2,729	2,819	16%	3%	3,136	5,643	32%	80%	8,462	24%
Injury of eye and orbit	2,378	3,009	18%	27%	2,061	3,680	21%	79%	6,689	19%
Conjunctivitis, unspecified	1,274	821	5%	-36%	751	1,014	6%	35%	1,835	5%
Ocular pain	714	470	3%	-34%	802	1,007	6%	26%	1,477	4%
Laboratory examination	-	-	0%	-	632	893	5%	41%	893	3%
Iridocyclitis, unspecified	864	634	4%	-27%	40	44	0%	10%	678	2%
Corneal ulcer	-	322	2%	-	238	347	2%	46%	669	2%
Acute atopic conjunctivitis	412	384	2%	-7%	188	271	2%	44%	655	2%
Keratitis, unspecified	824	594	3%	-28%	46	40	0%	-13%	634	2%
Other	2,200	1,911	11%	-	1,385	2,172	12%	57%	4,083	12%
Total	20,213	17,192	100%	-15%	12,185	17,809	100%	46%	35,001	100%

Some emergency diagnoses were more frequently treated at the RVEEH than at other hospitals. Such conditions include iridocyclitis, keratitis and retinal detachment. A full list of the proportion of presentations treated at the RVEEH by diagnoses is provided in Appendix 4.

### 3.3.1.6 Outcome

In 2002-03, 96% of Statewide ophthalmology presentations were "discharged to home" with 3.2% "admitted to a ward" and 0.8% "transferred to another hospital". At the RVEEH 96% of presentations were "discharged to home" with 3.9% "admitted to a ward" and 0.1% "transferred to another hospital". At other public hospitals 96% of presentations were also "discharged to home" with 2.5% "admitted to a ward" and 1.4% "transferred to another hospital" (Table 10). Of the 1,137 (3.2%) presentations that were admitted Statewide, 61% were treated at the RVEEH.

At the RVEEH the number of emergency presentations "discharged to home" decreased by 14% compared with an increase of 47% at other public hospitals between 1998-99 and 2002-03. "Admission to a ward" increased by 9% at the RVEEH compared with 40% at other public hospitals. "Transfers to another hospital" decreased by 8% at the RVEEH and increased by 76% at other public hospitals.

**Table 10: Departure status of ophthalmology emergency presentations - 2002-03 (VEMD)**

Departure status	Presentations									
	RVEEH				Other public hospitals				Total Victoria	
	98-99	02-03	%02-03	Growth	98-99	02-03	%02-03	Growth	02-03	%02-03
Discharge to home	19,258	16,471	92%	-14%	11,574	17,035	96%	47%	33,506	96%
Admission to Ward	634	692	3.9%	9%	318	445	2.5%	40%	1,137	3.2%
Admission Short Stay Obs.	-	-	0.0%	-	57	20	0.1%	-65%	20	0.1%
Transfer another Hospital	25	23	0.1%	-8%	146	257	1.4%	76%	280	0.8%
Left/treatment started	4	6	0.0%	50%	30	51	0.3%	70%	57	0.2%
Left before seen by Dr	291	-	0.0%	-100%	60	0	0.0%	-100%	-	0.0%
Dead on Arrival	1	-	0.0%	-100%	0	0	0.0%	-	-	0.0%
Mental Health residency	-	-	0.0%	-	0	1	0.0%	-	1	0.0%
Not categorised	-	-	0.0%	-	1	0	0.0%	-100%	-	0.0%
<b>Grand Total</b>	<b>20,213</b>	<b>17,192</b>	<b>97%</b>	<b>-15%</b>	<b>12,186</b>	<b>17,809</b>	<b>100%</b>	<b>46%</b>	<b>35,001</b>	<b>100%</b>

A summary of the types of diagnoses that were admitted or transferred to another hospital is presented in Table 11. Of the 1,137 patients admitted to a ward the most common diagnoses were other "disorders of the eye and adnexa" (25%), "injury of the eye and orbit" (20%) and "serous retinal detachment" (11%).

Of the 280 patients transferred to another hospital the most common diagnoses were injury of the eye and orbit (36%), other disorders of the eye and adnexa (19%) and foreign body external eye (11%).

**Table 11: Ophthalmology emergency presentations admitted or transferred by diagnosis – 2002-03 (VEMD)**

Diagnoses	Presentations			
	Admission to Ward		Transfer another hospital	
	Number	Percent	Number	Percent
Other disorders of eye and adnexa	279	25%	52	19%
Injury of eye and orbit	228	20%	101	36%
Serous retinal detachment	126	11%	12	4%
Hordeolum/other deep inflammation of eyelid	115	10%	16	6%
Keratitis, unspecified	87	8%	2	1%
Glaucoma, unspecified	50	4%	15	5%
Acute inflammation of orbit	47	4%	3	1%
Foreign body external eye	46	4%	30	11%
Other visual disturbances	23	2%	13	5%
Ocular pain	19	2%	10	4%
Other	117	10%	26	9%
<b>Total</b>	<b>1,137</b>	<b>100%</b>	<b>280</b>	<b>100%</b>

Q3. How can it be ensured that appropriate patients attend specialist ophthalmology emergency departments and that appropriate treatment is available at other emergency departments?

Q4. How can appropriate ophthalmic expertise be available in non-specialist emergency departments?

### 3.3.2 Outpatients

Outpatient services in public acute hospitals play a key role in the health system and represent a vital interface between inpatient and community care (Sharwood & O'Connell, 2001). They provide specialist medical services, pre and post hospital care, and other medical and allied health services.

Attendance at outpatient clinics represents one of the most common reasons for contact with health institutions. In Victoria between 8 and 10 million occasions of service are provided each year (Sharwood & O'Connell, 2001).

#### 3.3.2.1 Victorian Ambulatory Classification and Funding System

On 1 July 1997 the Victorian Ambulatory Classification and Funding System (VACS) was introduced for 19 major Victorian hospitals. VACS is a casemix based funding system for public outpatient services where hospitals are funded on the basis of patient encounters for medical and surgical services. Encounters are defined as the clinic visit, plus all ancillary services (pathology, radiology and pharmacy), which are provided within 30 days either side of the clinic visit. There are 47 clinical categories, all of which are weighted except for allied health and emergency services. Annual throughput targets are set for VACS services and hospitals are funded up to this target. VACS targets are not set at a specialty level. They are set for each health service and it is the health services responsibility to allocate funding across outpatient clinics. VACS cost weights are detailed in section 4.5.

Activity data is reported for each clinical specialty; no patient clinical information is reported.

Hospitals that do not receive VACS funding, receive outpatient funding through a non-admitted patient grant. Data is not reported to the department for these services provided through this grant or the MBS.

#### 3.3.2.2 VACS Outpatient activity

Twelve hospitals provided a total of 89,364 public ophthalmology outpatient VACS encounters in 2002-03 (Table 12). Ophthalmology is the third largest provider of VACS encounters accounting for 8% of all VACS categories, following obstetrics (18%) and orthopaedics (9%).

Ophthalmology outpatient services are concentrated in metropolitan areas with 70.0% of services provided at the RVEEH in 2002-03. The Royal Children's Hospital was the next largest provider with 5.9% of encounters followed by the Royal Melbourne Hospital with 5.2%. Only 5% of ophthalmology VACS encounters occurred in regional hospitals, which include Barwon Health (3.2%), Ballarat Health Services (1.0%) and the Bendigo Healthcare Group (0.8%).

VACS encounters have increased 7% since 1998-99. All the major providers of ophthalmology outpatient services experienced growth over this time period, except the ARMC which had a 36% decrease in encounters, moving from the second largest provider in 1998-99 (7.6%) to fifth in 2002-03 (4.5%). The Royal Children's Hospital experienced the largest growth of 2,628 encounters (100%) since 1998-99.

Box Hill Hospital and Frankston Hospital ceased providing publicly funded ophthalmology outpatient clinics in 1998-99 and 2000-01 respectively. St Vincent's Hospital also ceased providing ophthalmology services in 1997. There are no VACS funded outpatient facilities located in the western metropolitan areas.

**Table 12: Ophthalmology VACS Encounters 1998-99 to 2002-03**

Agency Name	98-99	99-00	00-01	01-02	02-03	% 02-03	Growth
Royal Victorian Eye & Ear Hospital	58,972	58,459	57,986	60,679	62,306	70.0%	6%
Royal Children's Hospital	2,638	1,783	2,066	7,906	5,266	5.9%	100%
Royal Melbourne Hospital	3,726	3,655	3,968	3,770	4,689	5.2%	26%
Monash Medical Centre	2,950	2,948	2,372	2,356	4,620	5.2%	57%
Austin & Repat. Medical Centre	6,336	3,528	4,091	4,258	4,063	4.5%	-36%
Alfred Hospital	3,451	3,195	2,320	2,343	3,437	3.8%	0%
Barwon Health	2,760	2,986	3,026	2,945	2,831	3.2%	3%
Ballarat Health Services	475	609	796	865	858	1.0%	81%
Bendigo Healthcare Group	594	646	543	568	685	0.8%	15%
Northern Hospital	767	168	406	455	440	0.5%	-43%
Royal Women's Hospital	99	101	90	98	92	0.1%	-7%
Peter MacCallum Cancer Institute	62	59	79	77	77	0.1%	24%
Box Hill Hospital	12	-	-	-	-	0.0%	-100%
Frankston Hospital	856	270	-	-	-	0.0%	-100%
Grand Total	83,698	78,407	77,743	86,320	89,364	100.0%	7%

### 3.3.2.3 Ratio of outpatient to inpatient services

A large proportion of eye disease is managed on an outpatient basis. This is reflected in the high ratio of ophthalmology VACS encounters to inpatient separations in comparison to other specialties. In 2002-03 there were 89,364 VACS outpatient encounters to 15,592 public inpatient separations for ophthalmology which is a ratio of 5.73:1. In 2000-01 the RVEEH had the highest ratio of both encounters to separations and encounters to WIES, with 6.41 and 9.28 respectively compared to a state average of 1.56 and 1.89 (DHS, 2002).

Possible factors related to the high ratio of outpatient attendances to inpatient occasions of service include:

- Shift from inpatient care to outpatient through use of improved technologies (laser) and improved pharmacology therapies.
- Ongoing monitoring and treatment of chronic conditions, ie. Glaucoma, diabetes, age related macula degeneration.
- High volumes of ophthalmic surgery and the associated pre/post-operative assessments undertaken ie. 3-4 outpatient visits per cataract surgery.

### 3.3.2.4 Allied health

Allied health occasions of service provided in all VACS hospitals are listed in Table 13. Allied health services linked closely with ophthalmology service are orthoptics, optometry and medical photography. Other allied health services may be involved in the care of ophthalmology patients such as social work and occupational therapy.

Orthoptics is the main provider of eye related allied health services in public hospitals with most patients presenting to ophthalmology outpatient clinics being seen by an orthoptist. Orthoptic services are provided at most hospitals that provide ophthalmology outpatient services. There is no reliable data to illustrate orthoptic activity statewide as orthoptic services along with medical photography are grouped in the category 'other allied health services'.

A sample of orthoptic data was acquired, however, from the RVEEH and the Royal Children's Hospital (RCH). The RVEEH reported 57,280 orthoptic occasions in 2002-03, which included 17,388 refractions, 4,753 visual field examinations and 1,871, A scans. The RCH reported 7,111 orthoptic occasions of services in 2002-03.

**Table 13: Allied health VACS clinics and occasions of services for 2002-03 (VACS)**

Allied health profession	2002-03
601 Audiology	9,151
602 Nutrition	34,556
603 Optometry	840
604 Occupational Therapy	65,379
605 Physiotherapy	140,207
606 Podiatry	10,566
607 Speech Pathology	20,691
608 Social Work	72,618
609 Other Allied Health Services	156,328
610 Cardiac Rehabilitation Program	6,426
611 Hydrotherapy	7,256
Total Allied Health	524,018

A small number of VACS funded optometry services are provided in Victorian public health services. Only the Northern Hospital has consistently provided public optometry services since 1998-99 and was the only provider in 2002-03 (Table 14). The Royal Melbourne Hospital provided VACS funded optometry services in 1999-00 and 2000-01 while St Vincent's Hospital provided VACS optometry services in 2000-01 only.

**Table 14: Provision of VACS funded optometry Occasions of Service 1998-99 to 2002-03**

Hospital Name	1998-99	1999-00	2000-01	2001-02	2002-03
Ballarat Health Services	-	30	-	1	-
Barwon Health	22	-	-	-	-
Northern Hospital	699	1,375	1,121	894	840
Royal Melbourne Hospital	-	49	171	-	-
Royal Victorian Eye and Ear Hospital	-	-	-	-	-
St Vincent's Hospital	-	-	307	-	-
Total	721	1,454	1,599	895	840

### **3.3.2.5 Provision of outpatient services in rural Victoria**

As shown in Table 12, VACS outpatient services are provided in three regional hospitals - Barwon Health, Ballarat Health Services and Bendigo Healthcare Group. No VACS outpatient services are provided in the Hume and Gippsland regions. Rural hospitals receive a non-admitted patient grant for the provision of public outpatient services, however, they are not required to report activity data to the department.

Q5. How can ophthalmology outpatient services be optimised?

Q6. What ophthalmology outpatient services should be provided in the following settings –

- Specialist tertiary hospital (RVEEH)
- General hospitals
- Community settings
  - Ophthalmologists
  - Optometrists
  - Other

Q7. What are the specific issues of rural Victorians in accessing ophthalmology outpatient services?

### 3.3.3 Inpatients

#### 3.3.3.1 Providers

In 2002-03 there were 49,700 ophthalmology inpatient separations reported through the VAED by 102 public hospitals and 76 private hospitals in Victoria. Of the public hospitals, 32 (31%) were located in metropolitan Melbourne and 70 (69%) were located in rural areas. Of the 76 private hospitals, 64 (84%) were metropolitan and 12 (16%) were rural.

Private hospitals treated 27,669 (56%) separations compared to 22,031 separations (44%) treated by public hospitals. Appendix 5 lists all public hospitals that provided greater than 10 separations in 2002-03 while private hospital data is aggregated.

The RVEEH is the largest provider of ophthalmology separations with 19% of the State's ophthalmology separations and 42% of public separations in 2002-03. The Cranbourne Integrated Care Centre (CICC) was the next largest public provider (8%) followed by Barwon Health (4%) (Refer Table 15).

While 102 public hospitals treated ophthalmology inpatients in 2002-03, fifty percent were treated at two hospitals, the RVEEH and the CICC.

CICC is a campus of Southern Health and provides same day ophthalmology services. Patients requiring overnight or multiday stay are treated at the Monash Medical Centre, Moorabbin campus. The CICC commenced treating ophthalmology inpatients in 2000-01 and is now the second largest public provider of ophthalmology surgical services in the State. In 2003-03, Monash Medical Centre, Moorabbin provided 126 separations (Refer Appendix 5).

Twelve public hospitals treated greater than 400 ophthalmology separations (Table 15) while fifty public hospitals provided less than ten ophthalmology separations.

**Table 15: Providers of public ophthalmology inpatient separations treating over 400 separations in 2002-03.**

Hospital	Total separations	% State (public & private)	% Public
The Royal Victorian Eye & Ear Hospital	9,322	19%	42%
Cranbourne Integrated Care Centre	1,800	4%	8%
Barwon Health [Geelong]	985	2%	4%
Royal Children's Hospital [Parkville]	731	1%	3%
Heidelberg Repatriation Hospital	542	1%	2%
Royal Melbourne Hospital	541	1%	2%
Ballarat Health Services	479	1%	2%
Sunshine Hospital	462	1%	2%
Latrobe Regional Hospital [Traralgon]	433	1%	2%
New Mildura Base Hospital	422	1%	2%
Bendigo Health Care Group	403	1%	2%
Broadmeadows Health Service	402	1%	2%
Other (less than 400 separations)	5,509	11%	25%
Total public hospital separations	22,031	44%	100%
Total private hospital separations	27,669	56%	
Total	49,700	100%	

#### 3.3.3.2 Metropolitan and rural services

Of the 49,700 ophthalmology separations in Victoria in 2002-03, 11,037 (22%) were treated in rural hospitals and 38,663 (78%) were treated in metropolitan hospitals. Appendix 5 provides details of metropolitan and rural providers.

Of separations treated in metropolitan hospitals, public hospitals treated 32% while private hospitals treated 45%. Of separations treated in rural hospitals, public hospitals treated 12% while private hospitals treated 10%.

#### 3.3.3.3 Growth

There was 26% growth in ophthalmology separations (private and public) between 1998-99 and 2002-03. Of the providers that treated over 400 separations listed in table 15 the only ones that experienced a decrease in separations were the Royal Children's Hospital (-14%) and Ballarat Health Service (-31%). (Refer Appendix 5).

The growth rate for the rural sector was 35% compared to 23% in the metropolitan sector. The proportion of the states separations provided in rural hospitals has remained between 21-23% (Table 16).

Private hospitals experienced a growth rate of 37% compared to 14% in public hospitals. The proportion of ophthalmology separations provided in the private sector increased from 51% in 1998-99 to 57% in 2000-01 and has remained at 56% for the past two years (Table 16).

**Table 16: Ophthalmology separations in metropolitan and rural Victoria and public and private hospitals 1998-99 to 2002-03 (VAED)**

Hospital	98-99	99-00	00-01	01-02	02-03	% 02-03	Growth
Metropolitan (public/private)	31,351	33,316	35,097	36,589	38,663	78%	23%
Rural (public/private)	8,149	9,137	10,228	10,363	11,037	22%	35%
Total (public/private)	39,500	42,453	45,325	46,952	49,700	100%	26%
% Rural	21%	22%	23%	22%	22%		

Private (metro/rural)	20,254	22,940	25,609	26,141	27,669	56%	37%
Public (metro/rural)	19,246	19,513	19,716	20,811	22,031	44%	14%
Total	39,500	42,453	45,325	46,952	49,700	100%	26%
% Private	51%	54%	57%	56%	56%		

### 3.3.3.4 Patient type

In 2002-03, 58% of ophthalmology separations were treated as private patients, 31% were public, 11% DVA and 1% compensable. Of the 22,031 patients treated in public hospitals 15,492 (70%) were public patients and 5,394 (24%) were private patients (Table 17).

There has been a 33% increase in private ophthalmology separations and a 16% increase in public ophthalmology separations treated between 1998-99 and 2002-03. Private patients treated in public and private hospitals increased 24% and 35%, respectively. Public patients treated in public hospitals increased 17%.

The higher growth rates in private ophthalmology separations compared with public separations has resulted in the overall proportion of private separations increasing from 54% in 1998-99 to 58% in 2002-03 while the proportion of public separations decreased from 34% to 31%.

A high proportion of ophthalmology separations provided at the RVEEH are treated as private patients. Of the 9,322 separations provided at the RVEEH in 2002-03, 5,360 (57%) were public patients and 3,487 (37%) were private patients.

**Table 17: Ophthalmology separations by hospital type and account type 1998-99 to 2002-03 (VAED)**

Hospital type	Account type	98-99	99-00	00-01	01-02	02-03	02-03 %	Growth
Private	Compensable	116	116	69	64	77	0%	-34%
	DVA	2,749	3,741	4,420	4,233	4,382	9%	59%
	Ineligible	17	5	11	7	11	0%	-35%
	Private	17,187	19,055	21,099	21,830	23,198	47%	35%
	Public	185	23	10	7	1	0%	-99%
Private Total		20,254	22,940	25,609	26,141	27,669	56%	37%
Public	Compensable	214	196	233	216	213	0%	0%
	DVA	1,445	1,344	986	965	876	2%	-39%
	Ineligible	31	34	33	29	57	0%	84%
	Private	4,334	4,338	4,501	5,261	5,394	11%	24%
	Public	13,222	13,601	13,963	14,340	15,491	31%	17%
Public Total		19,246	19,513	19,716	20,811	22,031	44%	14%
Total		39,500	42,453	45,325	46,952	49,700	100%	26%

Total private patients	21,521	23,393	25,600	27,091	28,592	58%	33%
Total public patients	13,407	13,624	13,973	14,347	15,492	31%	16%
% private patients	54%	55%	56%	58%	58%		
% public patients	34%	32%	31%	31%	31%		

### 3.3.3.5 Length of Stay

While the total number of ophthalmology separations has increased by 26% the number of bed days only increased by 15%. The growth in bed days has been greater in private hospitals (28%) than in public hospitals (3%) (Table 18).

**Table 18: Ophthalmology separations and beddays 1998-99 to 2002-03 - public and private (VAED)**

		98-99	99-00	00-01	01-02	02-03	Growth
Private	Separations	20,254	22,940	25,609	26,141	27,669	37%
	Bed days	22,618	25,163	27,380	27,209	28,873	28%
Public	Separations	19,246	19,513	19,716	20,811	22,031	14%
	Bed days	25,361	25,089	24,890	26,331	26,116	3%
Total separations		39,500	42,453	45,325	46,952	49,700	26%
Total beddays		47,979	50,252	52,270	53,540	54,989	15%

The majority of ophthalmology separations are same day. Same day ophthalmology separations have increased by 12%, from 72% in 1998-99 to 84% in 2002-03. All other stay types have decreased with 12% of separations overnight, 2% staying 2 to 3 days and 1% staying greater than 3 days in 2002-03 (Table 19). The private sector had a consistently higher same day rate than the public sector over the past 5 years which may reflect the higher concentration of cataract surgery within the sector. In 2002-03 the sameday rate was 88% in the private sector compared with 80% in the public sector.

**Table 19: Length of stay for ophthalmology separations (private and public)**

Length of Stay	98-99	99-00	00-01	01-02	02-03	% 02-03	% change
Sameday	28,496	31,988	35,985	38,411	41,902	84%	47%
Overnight	7,593	7,796	7,119	6,664	6,147	12%	-19%
Multiday 2-3 days	2,604	1,838	1,492	1,181	1,059	2%	-59%
Multiday 4-7 days	603	563	498	425	422	1%	-30%
Multiday 8+ days	204	268	231	271	170	0%	-17%
Grand Total	39,500	42,453	45,325	46,952	49,700	100%	26%
% sameday total	72%	75%	79%	82%	84%		

% public sameday	68%	71%	74%	76%	80%
% private sameday	76%	79%	84%	86%	88%

### 3.3.3.6 Elective/emergency

In 2002-03, 96% of ophthalmology separations were elective and 4% emergency. Nine percent of public hospital ophthalmology separations were emergency while 0.2% of private hospital separations were emergency (Table 20).

**Table 20: Ophthalmology separations by hospital and admission type – 2002-03 (VAED)**

Admission type	Private Hospitals		Public Hospitals		Total	
	Number	Percent	Number	Percent	Number	Percent
Elective	27,624	99.8%	20,035	90.9%	47,660	96%
Emergency	44	0.2%	1,987	9.0%	2,031	4%
Maternity	-	0.0%	2	0.0%	2	0%
Statistical	1	0.0%	7	0.0%	8	0%
Grand Total	27,669	100.0%	22,031	100%	49,701	100%

### 3.3.3.7 Medical/surgical

Ophthalmology separations are predominantly surgical. In 2002-03, 96% of ophthalmology separations were surgical and 4% medical.

The most common surgical separation was for "Major Lens Procedures" (63.1%). Combined (major and other) lens procedures constituted 70% of ophthalmology separations. "Other eye procedures" (6.2%) and "Eyelid procedures" (5.7%) were the next most common reasons for admission.

The most common medical separations were "Other Disorders of the Eye W/O CC<sup>4</sup>" (1.8% of all ophthalmology separations) followed by "Hyphema & Medically Managed Trauma to Eye" (1.5%). Infections were responsible for 0.5% of ophthalmology separations.

The majority of medical separations are treated in public hospitals (85%) while private hospitals treated a higher proportion of surgical separations (57%) (Refer Table 21).

<sup>4</sup> W = with; W/O = without; CC = complications/co-morbidities; Cat/Sev = catastrophic/severe

In 2002-03, the Diagnostic Related Groups (DRGs) with the greatest proportion treated in public hospitals were "Hyphema & Medically Managed Trauma to Eye" (96%), "Procedures for Penetrating Eye Injury" (94%) and "Acute and Major Eye Infections Age<55" (90%).

The DRGs with the greatest proportion treated in private hospitals were "Other Lens Procedures" (66%), "Eyelid Procedures" (62%) and "Major Lens Procedures" (60%).

Growth rates for ophthalmology DRGs in both the private and public sectors are listed in Appendix 6. From 1999-2000<sup>5</sup> to 2002-03 the greatest growth in ophthalmology separations was for "Major Lens Procedures" with 7,442 separations (31%). This growth was consistent across the public and private sectors with growth of 33% and 30% respectively. "Other Eye Procedures" increased by 569 separations (23%) and "Eyelid Procedures" increased by 331 separations (13%). The majority of growth for "eyelid procedures" occurred in the private sector 21%, compared to 2% in the public sector.

Statewide decreases in separations were noted for "Other Lens Procedures" (-22%), "Strabismus Procedures" (-11%), "Glaucoma procedures" (for both complex -36% and other -18%) and "Major Corneal, Scleral & Conjunctival Procedures" (-58%).

**Table 21: Ophthalmology medical and surgical separations by DRG –2002-03 (VAED)**

DRG	Separations							Total	%Total
	RVEEH	Percent RVEEH	Other public hospitals	Percent other public	Private hospital	Percent private hospital			
<b>Medical</b>									
Acute and Major Eye Infections Age>54	46	29%	76	48%	37	23%	159	0.3%	
Acute and Major Eye Infections Age<55	22	22%	66	67%	10	10%	98	0.2%	
Hyphema & Medical Man Trauma to Eye	107	15%	586	81%	29	4%	722	1.5%	
Other Disorders of the Eye W CC	12	9%	97	73%	24	18%	133	0.3%	
Other Disorders of the Eye W/O CC	111	13%	576	66%	191	22%	878	1.8%	
<b>Medical Total</b>	<b>298</b>	<b>15%</b>	<b>1,401</b>	<b>70%</b>	<b>291</b>	<b>15%</b>	<b>1,990</b>	<b>4.0%</b>	
<b>Surgical</b>									
Procedures for Penetrating Eye Injury	109	66%	47	28%	10	6%	166	0.3%	
Enucleations and Orbital Procedures	84	36%	76	33%	71	31%	231	0.5%	
Retinal Procedures	1,041	54%	352	18%	626	33%	1,919	3.9%	
Maj Corneal, Scleral & Conjunctival Procs	112	42%	13	5%	139	53%	264	0.5%	
Dacryocystorhinostomy	250	40%	119	19%	257	41%	626	1.3%	
Complex Glaucoma Procedures	94	71%	23	17%	15	11%	132	0.3%	
Other Glaucoma Procedures	285	37%	129	17%	364	47%	778	1.6%	
Major Lens Procedures	5,047	16%	7,606	24%	18,727	60%	31,380	63.1%	
Other Lens Procedures	347	10%	821	24%	2,258	66%	3,426	6.9%	
Strabismus Procedures	200	24%	333	40%	295	36%	828	1.7%	
Eyelid Procedures	427	15%	661	23%	1,768	62%	2,856	5.7%	
Oth Corneal, Scleral & Conjunctival Procs	363	25%	244	17%	855	58%	1,462	2.9%	
Lacrimal Procedures	87	16%	236	42%	236	42%	559	1.1%	
Other Eye Procedures	578	19%	748	24%	1,757	57%	3,083	6.2%	
<b>Surgical Total</b>	<b>9,024</b>	<b>19%</b>	<b>11,308</b>	<b>24%</b>	<b>27,378</b>	<b>57%</b>	<b>47,710</b>	<b>96.0%</b>	
<b>Total</b>	<b>9,322</b>	<b>19%</b>	<b>12,709</b>	<b>26%</b>	<b>27,669</b>	<b>56%</b>	<b>49,700</b>	<b>100.0%</b>	

As the Statewide tertiary referral hospital for ophthalmology services, the RVEEH activity was compared with other public hospitals and private hospitals (Table 21). The DRGs with the highest proportions of separations treated at the RVEEH in 2002-03 were "Complex Glaucoma Procedures" (71%), "Procedures for Penetrating Eye Injury" (66%) and "Retinal Procedures" (54%).

An analysis of "Complex Glaucoma Procedures" showed that while 94 separations (71%) were treated at RVEEH the other 38 (29%) were treated at public and private facilities that each treated 10 or less such cases. Similarly for "Procedures for Penetrating Eye Injury" performed in 2002-03, the RVEEH performed 109 (66%) procedures while the remaining 47 (34%) were performed at public and private hospitals that each treated less than 10 such cases.

Of the 1,919 "Retinal Procedures" separations treated in 2002-03, the RVEEH treated 1,041 (54%) separations. There were 67 (3.5%) separations treated in hospitals that each treated less than 10 procedures. Private hospitals treated 626 separations (33%).

<sup>5</sup> Growth in DRGs is recorded from 1999-2000 due to coding changes.

### **3.4 Coordination with other services**

Access to ophthalmology services is important to a range of specialities. Eye disease is common in endocrine conditions, such as diabetes and thyroid disease; neurological and neurosurgical conditions; neonatology; patients with HIV/AIDS; and trauma patients (NSW Health, 2002).

It has been demonstrated in Table 15, that public ophthalmology services are concentrated at 12 hospitals, with more providing services on a more limited basis.

Q8. To what extent should the public system treat private ophthalmology patients (insured or uninsured)?

Q9. What types of ophthalmology services (emergency, outpatient, surgical, non-surgical) should be available to patients at general hospitals?

Q10. How could ophthalmology services be coordinated more effectively with non-ophthalmology specialties such as trauma, diabetes, and immunology?

## 4.0 Current demand and access

Access refers to the extent to which a population or individual can obtain health services. The Victorian public health system should offer equitable access to health services for the population they service on the basis of need, irrespective of geography, socio-economic group, ethnicity, age or sex. This includes availability of services, waiting times for services and processes involved in accessing services and information (VQC, 2003).

Advances in surgical techniques, technology and waiting list management strategies are contributing to an increase in the accessibility of services. A retrospective study conducted at the RVEEH between 1994 and 1999 showed that despite increasing numbers of patients undergoing surgery annually there were decreasing trends in patients waiting times, overnight hospitalisation and length of hospitalisation. An increasing trend in the use of phacoemulsification cataract surgery (PKE) combined with local anaesthesia was considered a major factor in increased efficiency of cataract services (Qing et al, 2001).

Waiting list management strategies at a health service level have also contributed to reductions in long waits for cataract patients. For example substantial reductions in waiting times for long waiting patients can result by treating routine patients in turn.

### 4.1 Key elective surgery strategies

In recent years a number of strategies have been implemented by the department aimed at monitoring and improving access to elective surgery in public hospitals. As ophthalmology surgery is predominantly elective, these are of particular relevance.

#### 4.1.1 Elective Surgery Information System

Access to public hospital elective surgery is monitored through the Elective Surgery Information System (ESIS). On a monthly basis the major metropolitan and rural public hospitals provide information about people waiting or admitted for elective surgery. The information held includes demographic, morbidity, and the waiting experience. The information provided is used to monitor hospital performance and for service planning.

#### 4.1.2 Elective Surgery Access Service

The Elective Surgery Access Service (ESAS) aims to assist semi-urgent (Category 2) elective surgery patients with prolonged waiting times receive care. Long waiting patients with little prospect of receiving treatment within their own hospital in the immediate future are offered the opportunity of surgery at another hospital. Patients in the following specialty areas have been identified as priority areas for action:

- Ophthalmology
- Orthopaedics
- Plastic Surgery
- General Surgery

The main criteria for selection are the waiting time and the patient's suitability for treatment at another hospital. Patients with significant medical issues, which are under active management by the target hospital, are felt to be unsuitable for treatment at another hospital. Patients are treated at (designated) hospitals, which have indicated they have capacity to treat additional elective surgery patients. The following (designated) hospitals have received funding to treat additional patients:

- Cranbourne Integrated Care Centre – Southern Health (Ophthalmology)
- St Vincent's (Orthopaedic and Plastic Surgery)
- Western Hospital (General Surgery)
- RVEEH (ENT)

#### 4.1.3 Rural Patient Initiative

The Rural Patient Initiative (RPI) consists of a range of strategies that aim to:

- Improve access to elective surgery and selected medical services for rural and regional Victoria.
- Increase multiday capacity to treat additional elective surgery patients and accommodate patients admitted through emergency departments within appropriate time frames.

RPI strategies include grants and funding to support:

- Practice change from multiday to sameday surgery.
- Medihotel type arrangements.
- Short Stay Unit arrangements.
- Elective surgery waiting list manager or coordinator positions.

- Increased elective surgery activity that targets long waiting category 2 and 3 surgical patients and/or long waiting medical patients. Ophthalmology is one of the targeted specialty areas.

Table 22 provides additional background information related to elective surgery.

**Table 22: Elective surgery background information**

Elective Surgery is defined by the department as "surgical care that, in the opinion of the treating clinician, is necessary and admission for which can be delayed for more than 24 hours". In Victoria's public hospitals, specialists assess the clinical urgency of their patient's condition and categorise it as one of three levels.

**Category 1:** A condition that has the potential to deteriorate quickly to the point that it may become an emergency. Admission is desirable within 30 days.

**Category 2:** A condition causing some pain, dysfunction or disability but which is not likely to deteriorate quickly or become an emergency. Admission is desirable within 90 days.

**Category 3:** A condition causing minimal or no pain, dysfunction or disability, which is unlikely to deteriorate quickly and which does not have the potential to become an emergency. Admission is acceptable

## 4.2 Waiting times and equity of access

The data presented in Section 3 can be seen as a measure of supply from the health care system. Demand is more difficult to measure. An analysis of waiting list data provides one indication of demand.

### 4.2.1 Waiting times for consultations

The department does not routinely collect outpatient waiting time data. However, a survey of hospitals that provide VACS funded ophthalmology services in January 2004 showed variation in the average waiting times for routine ophthalmology appointments from 5 weeks to 42 weeks.

### 4.2.2 Waiting times for surgery

In comparison with other states and territories in Australia, Victoria is performing well in managing ophthalmology surgical waiting lists. Data reported by the Australian Institute of Health and Welfare indicates that Victoria has the one of the lowest proportions of patients waiting more than 12 months for surgery (Table 23).

**Table 23: Ophthalmology and cataract surgery waiting list statistics –Australian states and territories, 2001-02 (AIHW)**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
<b>Ophthalmology</b>									
Admissions	19,064	13,854	7,313	4,789	3,741	645	720	694	50,820
Days waited at 50th percentile	98	37	26	88	42	154	82	160	57
Days waited at 90th percentile	441	227	464	322	264	557	621	308	395
Proportion waited > 12 mths	19.0	4.3	12.9	5.8	4.3	36.3	27.1	5.5	11.9
<b>Cataract extraction</b>									
Admissions	14,345	9,232	4,567	3,503	2,431	394	615	487	35,574
Days waited at 50 <sup>th</sup> percentile	159	53	30	113	60	395	98	175	88
Days waited at 90 <sup>th</sup> percentile	471	256	544	322	303	632	638	313	430
Proportion waited > 12 mths	24.1	5.1	16.8	5.2	5.9	56.6	31.2	6.4	15.4

#### 4.2.2.1 Victorian ophthalmology waiting list data

Private hospitals do not report on waiting times for treatment at their facilities and little is known of the waiting times for surgery within the sector. The following data is reported from Victorian public hospitals that provide data to ESIS.

ESIS groups the following hospitals into "group sites:"

- Monash Medical Centre Clayton and Moorabbin.
- Dandenong Hospital and Cranbourne Integrated Care Centre.
- Austin Hospital and Heidelberg Repatriation Hospital.
- Rosebud Hospital and Frankston Hospital.

On 31 October 2003 there were 3,406 patients on Victoria's ophthalmology surgical waiting lists. The RVEEH had the largest waiting list of 1,486 patients or 44% of the waiting list, followed by Barwon Health with 308 patients (9%) and the Northern Hospital with 303 patients (9%) (Refer Table 24).

**Table 24: Number of patients on Victorian public ophthalmology waiting lists - 31 October 2003 (ESIS)**

Hospital	Category 1	Category 2	Category 3	Total	Percent	Cumulative %
The Royal Vic Eye & Ear	12	280	1,194	1,486	44%	44%
Barwon Health	-	39	269	308	9%	53%
The Northern Hospital	1	61	241	303	9%	62%
Sunshine Hospital	-	9	249	258	8%	69%
Dandenong Hospital <sup>6</sup>	1	18	163	182	5%	74%
Ballarat Health Services	0	20	159	179	5%	80%
Royal Children's Hospital	5	18	123	146	4%	84%
Latrobe Regional Hospital	-	-	127	127	4%	88%
Royal Melbourne Hospital	1	24	82	107	3%	91%
Frankston Hospital	1	84	19	104	3%	94%
Bendigo Healthcare	-	2	68	70	2%	96%
The Alfred	1	32	11	44	1%	97%
Maroondah Hospital	-	-	35	35	1%	98%
Austin Health	-	3	31	34	1%	99%
Monash Medical Centre	-	3	19	22	1%	100%
St Vincent's Hospital	1	-	-	1	0%	100%
Western Hospital	-	-	-	-	-	-
<b>Total</b>	<b>23</b>	<b>593</b>	<b>2,790</b>	<b>3,406</b>	<b>100%</b>	<b>100%</b>

Patients classified as category 3 (non-urgent) have average waiting times ranging between 39 and 409 days. Category 2 patients (semi-urgent) who require treatment within 90 days have average waiting times ranging between 17 and 120 days (Table 25).

On 30 October 2003, 114 category 2 patients and 236 category 3 patients were waiting longer than clinically recommended. This represents 19% of category 2 patients and 8% of category 3 patients.

Despite having the longest waiting list the RVEEH has one of the shortest surgical waiting times with category 3 patients having an average waiting time of 77 days and only 3% experiencing long waits.

<sup>6</sup> Dandenong data includes Cranbourne

**Table 25: Waiting times (days) for ophthalmology - 30 October 2003 (ESIS)**

Hospital	Average wait		Number of long waiters		% long waits	
	Category 2	Category 3	Category 2	Category 3	Category 2	Category 3
Ballarat Health Services	60	409	3	82	15%	52%
The Northern Hospital	85	303	24	78	39%	32%
Maroondah Hospital	-	300	-	3	-	9%
Barwon Health	30	213	1	29	3%	11%
Monash Medical Centre	85	156	1	0	33%	0%
The Alfred	62	148	5	2	16%	18%
Bendigo Healthcare	49	112	1	1	50%	1%
Frankston Hospital	120	107	47	0	56%	0%
Latrobe Regional Hospital	-	92	-	1	-	1%
Sunshine Hospital	64	87	2	1	22%	0%
The Royal Vic Eye & Ear	34	77	28	38	10%	3%
Royal Children's Hospital	18	66	0	1	0%	1%
Austin Health	17	66	0	0	0%	0%
Royal Melbourne Hospital	29	57	0	0	0%	0%
Dandenong Hospital	63	39	2	0	11%	0%
St Vincent's Hospital	-	-	-	-	-	-
Western Hospital	-	-	0	-	-	-
Statewide ave (patients)	54	132	114	236	19%	8%
Average hospital	55	149	8	16	20%	9%
Average hospital + two SDs	115	368	36	73	58%	39%

Clearance time is the number of patients waiting divided by the number of admissions in the previous month. It is a measure of how long the list would take to clear if there were no further admissions. The average hospital clearance time for category 3 patients is 6.1 months while the average for all patients on the waiting list is 3.2 months. Several hospitals experience large variations from the mean for category 3 clearance rates which range between 0.7 and 26.5 months (Table 26).

**Table 26: Clearance rates (months) for ophthalmology waiting lists- 30 October 2003 (ESIS)**

Hospital name	Category 1 (months)	Category 2 (months)	Category 3 (months)
Ballarat Health Services	0.0	2.9	26.5
The Northern Hospital	-	2.3	11.5
Barwon Health	-	1.1	9.0
Sunshine Hospital	0.0	3.0	6.9
Monash Medical Centre	0.0	0.8	6.3
Frankston Hospital	-	5.6	6.3
The Alfred	0.3	1.1	5.5
Royal Melbourne Hospital	0.5	1.7	5.5
Latrobe Regional Hospital	-	-	3.5
The Royal Vic Eye & Ear	0.2	0.6	3.2
Bendigo Healthcare	0.0	2.0	2.6
Royal Children's Hospital	0.6	1.5	1.6
Dandenong Hospital	0.1	1.6	1.1
St Vincent's Hospital	1.0	-	-
Maroondah Hospital	-	-	0.8
Austin Health	0.0	0.4	0.7
Western Hospital	-	0.0	-
State Wide	0.3	0.9	3.2
Average hospital	0.2	1.8	6.1
Average + two SDs	0.9	4.6	19.0

#### 4.2.2.1 Cataract waiting lists

Patients waiting for cataract surgery account for 74% of Victoria's ophthalmology waiting list (2,523). As the major component of ophthalmology waiting lists, cataract surgery has come under scrutiny in many jurisdictions and warrants specific attention. Table 27 demonstrates that the hospitals with the largest cataract waiting lists are the RVEEH, Barwon Health and The Northern Hospital.

Comparison of the number waiting for cataract surgery and the average number of admissions per months (clearance rate) shows that the RVEEH requires 0.7 months to clear its category 2 list and 3.5 months to clear its category 3 cataract list compared to hospital averages of 2.1 months and 8.3 months respectively.

**Table 27: Numbers of patients waiting for cataract surgery 30 October 2003 (ESIS)**

Hospital	Number patients waiting for cataract surgery				Clearance rate Cat 2 (months)	Clearance rate Cat 3 (months)
	Cat 2	Cat 3	Total Cat 1 and 2	% Total		
The Royal Vic Eye & Ear	164	839	1,003	40%	0.7	3.5
Barwon Health	30	257	287	11%	1.5	8.5
Sunshine Hospital	7	225	232	9%	2.8	7.9
The Northern Hospital	48	206	254	10%	4.2	14.5
Ballarat Health Services	13	146	159	6%	3.4	40.7
Latrobe Regional Hospital	-	125	125	5%	-	4.4
Dandenong Hospital*	5	116	121	5%	2.2	1.0
Royal Melbourne Hospital	17	78	95	4%	1.4	5.9
Bendigo Healthcare	1	54	55	2%	1.0	3.3
Maroondah Hospital	-	30	30	1%	-	3.8
Austin Health	-	23	23	1%	-	0.7
Frankston Hospital	75	18	93	4%	4.5	2.8
Monash Med Centre	1	11	12	0%	-	13.2
The Alfred	22	9	31	1%	1.1	7.7
Royal Children's Hospital	-	3	3	0%	0.0	7.2
Total waiting cataract	383	2,140	2,523	100%	Ave hosp 2.1	Ave hosp 8.3
Total waiting ophthalmology	593	2,790	3,406			
% cataract waiting	65%	77%	74%			

\* No cataract surgery was performed at Dandenong Hospital in 2002-03. All cataract operations listed under Dandenong were performed at Cranbourne.

Q11. What is an acceptable waiting time for non-urgent outpatient and inpatient ophthalmology care?

Q 12. What strategies are required to ensure timely provision of ophthalmic surgical services?

## **4.3 Utilisation**

A study of utilisation rates in small areas is often used to as a measure of the allocative efficiency of a health care system, or the level by which services are equitably distributed throughout the system.

### **4.3.1 Utilisation of eye care services**

A number of studies have examined the utilisation of eye care services in Australia. Findings include:

- Geographic variability in rates of ophthalmology care despite similarity in the prevalence of eye disease in rural and urban areas.
- Utilisation of eye care services increases with age.
- Sex, private health insurance, urban residence, and the ability to converse in English are significant factors associated with eye health care services use.
- A mismatch between the proportion of the ophthalmology practice sites and the proportion of the population in various urban and rural areas.  
(Keefe et al, 2002; Madden et al, 2002)

With regard to cataract surgery it has been found that cataract surgery services are well accessed by the Victorian population and that no particular sub-group is systematically under-serviced (McCarty et al, 2000).

For this paper an analysis of ophthalmology inpatient separations has been undertaken at a Local Government Area level to document the age-standardised separation rates per 1,000 people for each ophthalmology Enhanced Service Related Group (ESRG)<sup>7</sup>. Similar to analysis undertaken in NSW, there is a large variation in utilisation rates. These data are detailed in Appendix 7.

Small area variations in practice (such as demonstrated here for ophthalmology) are not unique and have previously been described in Australia (Robertson et al, 1998; Mooney & Scotton, 1999). Causes of variation are seen to relate to a number of factors, including:

- The degree of medical practitioner uncertainty with respect to diagnosis and treatment.
- Uncertainty about the effects and value of a medical procedure.
- Inability of the patient to judge the need for medical procedures.
- The extent of overservicing that is possible.
- Where a wide range of practices are considered to be within the bounds of appropriate care.
- The degree of medical practitioner discretion in whether to hospitalise (and operate).  
(Folland et al, 1997; Mooney & Scotton, 1999).

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<sup>7</sup> See Appendix 6 for definition of ESRGs

## 4.4 Self sufficiency - Patient flows

Self sufficiency measures the degree to which people can access services close to home. This is of most relevance to rural Victorians who often have longer travel times to hospitals than metropolitan people experience. Table 28 demonstrates that 77% of rural people receive inpatient ophthalmology services within rural Victoria. This varies from 60% for Hume residents receiving care in the Grampians area to 90% for Barwon South Western residents receiving care within the Barwon South Western region.

99.7% of metropolitan people receive treatment within metropolitan Melbourne. Self sufficiency calculations in metropolitan Melbourne are more difficult to interpret because three major hospitals (The Alfred, Royal Melbourne Hospital and RVEEH) are all located in the Melbourne local government area which is allocated to the Western metropolitan region.

**Table 28: Ophthalmology self sufficiency**

Hospital region	Patient region of residence													
	Barwon SW	Gippsland	Grampians	Hume	Loddon Mallee	Rural total	Metro Eastern	Metro Northern	Metro Southern	Metro Western	Metro total	Missing	Interstate	Total
Barwon SW	90%	0%	4%	0%	0%		0%	0%	0%	0%		2%	2%	7%
Gippsland	0%	63%	0%	0%	0%		0%	0%	0%	0%		2%	0%	4%
Grampians	1%	0%	76%	0%	5%		0%	0%	0%	0%		0%	3%	4%
Hume	0%	0%	0%	60%	3%		0%	0%	0%	0%		0%	16%	3%
Loddon Mallee	0%	0%	2%	1%	71%		0%	0%	0%	0%		30%	32%	5%
Rural total	91%	63%	82%	62%	79%	77%	0%	0%	0%	0%	0.3%	33%	53%	22%
Metro Eastern	1%	13%	1%	7%	2%		62%	17%	13%	10%		6%	9%	21%
Metro Northern	1%	2%	2%	6%	6%		4%	31%	3%	9%		6%	6%	8%
Metro Southern	1%	8%	1%	2%	1%		8%	1%	58%	2%		0%	6%	16%
Metro Western	6%	15%	14%	24%	12%		26%	52%	26%	79%		56%	26%	33%
Metro total	9%	37%	18%	38%	21%	23%	100%	100%	100%	100%	99.7%	67%	47%	78%
Grand Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Total separations	3,848	2,706	2,002	1,798	3,227		10,242	7,174	11,751	6,114		54	770	49,686

## 4.5 Cost of services

The costs of ophthalmology services can be defined from two perspectives, the cost to the payer of the service (government or consumer) or the cost of delivery of service (hospital or practitioner).

### 4.5.1 Medicare consultations

The Medicare Benefits Schedule documents the fee that the Health Insurance Commission (HIC) will pay for medical services provided. The bulk billing rate for ophthalmologists is not known but 27.8% of "specialist attendances" and 96.5% of optometry consultations were bulk billed in 2002-03<sup>8</sup>.

The cost to the patient at point-of-care for non-public hospital ophthalmology consultations is not known, but is likely to be higher than the schedule fee and approximate the Australian Medical Association (AMA) recommended fee in many instances.

### 4.5.2 Hospital cost weights

Public hospitals are funded on a casemix basis. The cost-weights are developed through an indepth study of hospitals activities. The cost weights for same day ophthalmology DRGs from 2000-01 to 2003-04 are listed in Table 29<sup>9</sup>. The standard rate per Weighted Inlier Equivalent Separation (WIES) is approximately \$2,600 in 2003-04 and varies between metropolitan and rural hospitals in recognition of the higher fixed costs of running small hospitals. Public hospitals receive additional funding through a range of grants.

It is known that the cost of service provision varies between hospitals. It is likely that, through efficiencies in work practices or staffing arrangements, some hospitals achieve costs that differ markedly from the casemix payment. Some hospitals will deliver the service at a lower cost to the payment and others will deliver it at a higher cost to the payment. Salary arrangements for surgeons have been noted as a significant factor in whether a hospital is able to deliver the service within the casemix payment, with some hospitals providing sessional payments and others fee-for-service.

**Table 29: WIES11 - Victorian ophthalmology same day cost weights**

DRG Code and Name	Same Day Weight			
	2000-01	2001-02	2002-03	2003-04
C01Z Procedures for Penetrating Eye Injury	0.6175	0.6316	0.6050	1.1162
C02Z Enucleations and Orbital Procedures	0.9300	1.1506	1.0703	0.9444
C03Z Retinal Procedures	0.8436	0.8669	0.8472	0.8430
C04Z Maj Corneal, Scleral & Conjunctival Procs	0.7637	0.9147	0.9368	0.7871
C05Z Dacryocystorhinostomy	0.7287	0.7554	0.7787	0.7915
C06Z Complex Glaucoma Procedures	0.5738	0.4661	0.4538	0.4736
C07Z Other Glaucoma Procedures	0.6563	0.7070	0.5909	0.5991
C08Z Major Lens Procedures	0.6214	0.5925	0.5995	0.5845
C09Z Other Lens Procedures	0.6160	0.7208	0.7518	0.8231
C10Z Strabismus Procedures	0.4275	0.4867	0.4791	0.4275
C11Z Eyelid Procedures	0.4056	0.4282	0.4103	0.3999
C12Z Oth Corneal, Scleral & Conjunctival Procs	0.3211	0.3296	0.3256	0.4379
C13Z Lacrimal Procedures	0.3703	0.2705	0.2778	0.2687
C14Z Other Eye Procedures	0.3420	0.3429	0.3292	0.3042
C60A Acute and Major Eye Infections Age>54	0.3796	0.4313	0.4411	0.4604
C60B Acute and Major Eye Infections Age<55	0.4147	0.3060	0.3078	0.6019
C61Z Neurological & Vascular Disorders of Eye	0.5523	0.5212	0.5196	0.4226
C62Z Hyphema & Medically Man. Trauma Eye	0.1889	0.1839	0.1516	0.1575
C63A Other Disorders of the Eye W CC	0.3630	0.3080	0.2652	0.3170
C63B Other Disorders of the Eye W/O CC	0.2778	0.2245	0.1916	0.1905

<sup>8</sup> <http://www.hic.gov.au/statistics>

<sup>9</sup> The weighting is derived through annual costing studies which compare, in participating hospitals, the relative resource consumption of each DRG against all others. Intra-hospital costing systems are fundamental to casemix. While they vary between hospitals, the relativity in resource consumption for each DRG within each hospital produces a reliable weighting.

### 4.5.3 VACS cost weights

The 2003-04 VACS case payment is \$133 per weighted public encounter for medical and surgical services. This has increased from \$125 in 2002-03. Cost weights have remained the same as in 2002-03. Details of VACS funding for clinical categories related to ophthalmology services are outlined in Table 30.

Allied health funding is determined on the basis of occasions of service which in 2003-04 is \$47 regardless of type of allied health service provided.

**Table 30: Ophthalmology related VACS funding**

	Category	VACS code	Weight /cost 02-03	Weight / cost 03-04
Surgical	Ophthalmology	204	0.771	0.771
Medical	Neurology (inc. neuro-ophthalmology)	109	1.43	1.43
Allied Health	Optometry	603	\$45	\$47
	Other Allied Health (inc. orthoptics)	609	\$45	\$47

Q13. What are the cost and funding issues in ophthalmology that require action (inpatient, outpatient, emergency, Commonwealth, state)?

## 5.0 Future service demand

Planning for future hospital services requires quantification of activity based on the population needs (demand) and how these needs are met (supply). Understanding and describing current and future patterns of acute health service utilisation is a major component of health service-planning projects. In order to estimate future requirements an assessment of past trends is essential to inform strategic policy and planning.

This section will describe the base case forecasts produced by the department and outlined in the Metropolitan Health Strategy<sup>10</sup>. See Appendix 6 for description of the DRGs that are included in each of the ophthalmology Enhanced Service Related Groups (ESRGs). These will be further examined in detail and compared to other indicators of future demand.

### 5.1 Base case forecasts

The method of forecasting hospital in-patient activity in the department has changed over time. In the past, one would forecast by multiplying the activity of the current year with population projections to ascertain future activity. This type of forecasting, referred to as 'population projection', has usually been outstripped by the actual growth in the system.

The department's current method of forecasting uses linear regression methods where forecasts are generated for utilisation rates based on retrospective years of data. This approach assumes that the past relationship between variables will be the same in future years. The advantage of this approach is that a change in the intensity of activity in the past this will be projected into the future. With a population projection the activity is ONLY linked to changes in population and aging.

Graphs of total public and private forecasts for each ESRG are included in this document. These base case forecasts indicate that by 2016-17 there will be a:

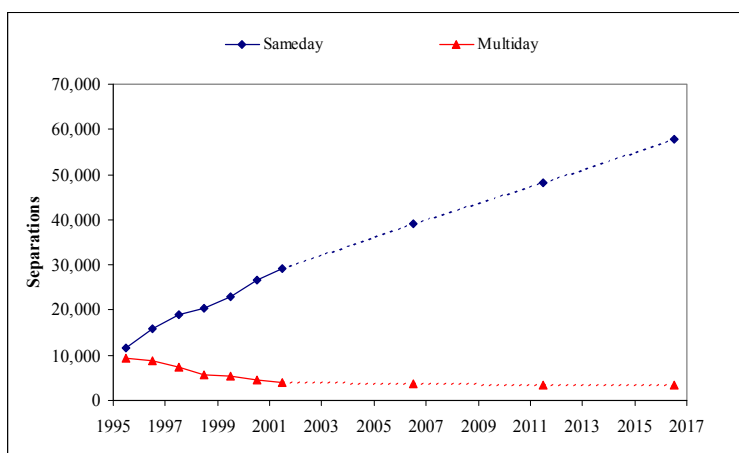
- 3.3% per annum increase in public ophthalmology inpatient separations.
- 4.3% per annum increase in same day separations.
- 1.0% per annum decrease in multiday separations.

The average length of stay (ALOS) for multiday ophthalmology separations is forecast to reduce from 2.08 in 2001-02 to 1.88 in 2016-17, a reduction of 0.7% pa.

Public "Cataract Procedures" are forecast to grow at 4.5% pa to 2016-17, with a continued shift to sameday activity and a decline in multiday ALOS from 1.28 to 1.19 days (Appendix 9, Figure 2 and 3). As this ESRG is already predominately sameday, beddays for "Cataract Procedures" will also increase at 4.3% pa.

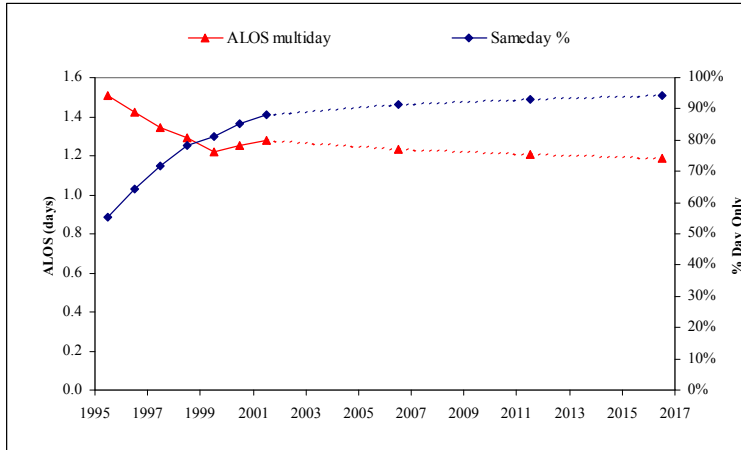
Public "Other Eye Procedures" separations are forecast to grow at 0.7% pa to 2016-17. This will occur in the setting of a shift from multiday to sameday separations with an overall decline in beddays at 0.3% pa. Multiday ALOS will decline from 1.94 days to 1.66 days (Appendix 9, Figures 4 and 5).

Public "Non-Procedural Ophthalmology" is a minor but important component of ophthalmology practice. There is expected to be a 2.0% pa growth in separations and 0.2% pa growth in beddays. Multiday ALOS will decline from 3.48 days to 3.19 days (Appendix 9, Figures 6 and 7).

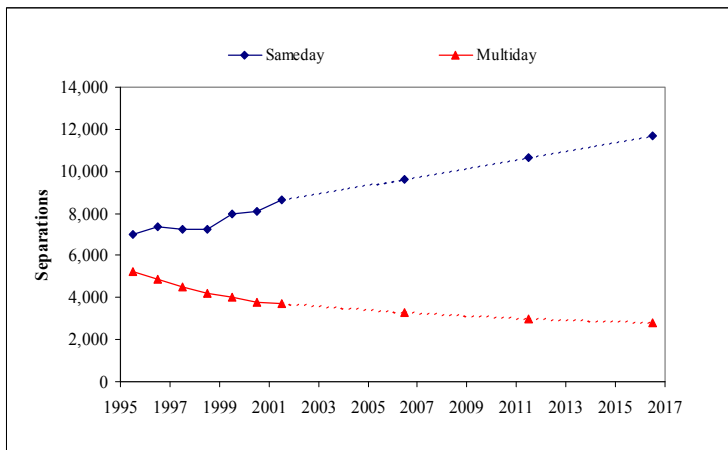


**Figure 2: Cataract Procedures forecast (separations) –Victorian public and private hospitals, 2001-02 to 2016-17**

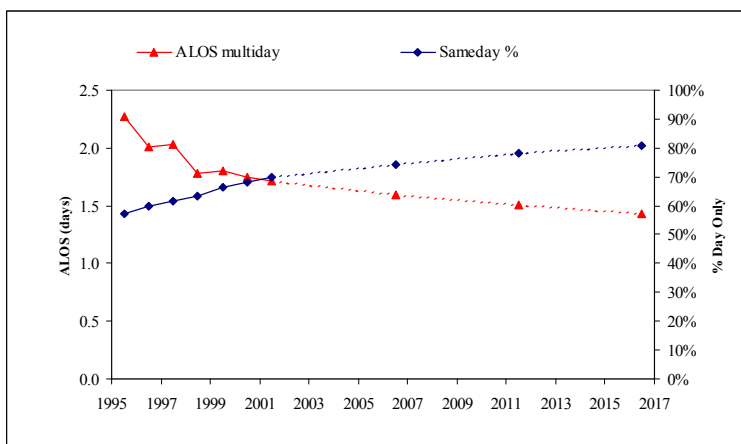
<sup>10</sup> <http://www.health.vic.gov.au/metrohealthstrategy/inpat-forecasts.pdf>



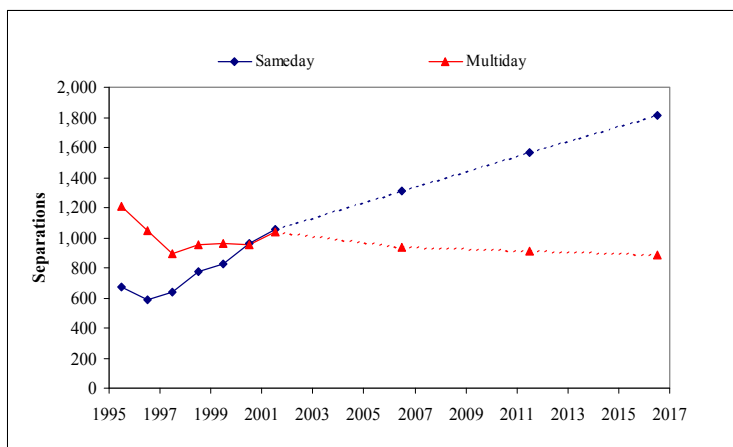
**Figure 3: Cataract Procedures forecast (ALOS and % sameday) – Victorian public and private hospitals, 2001-02 to 2016-17**



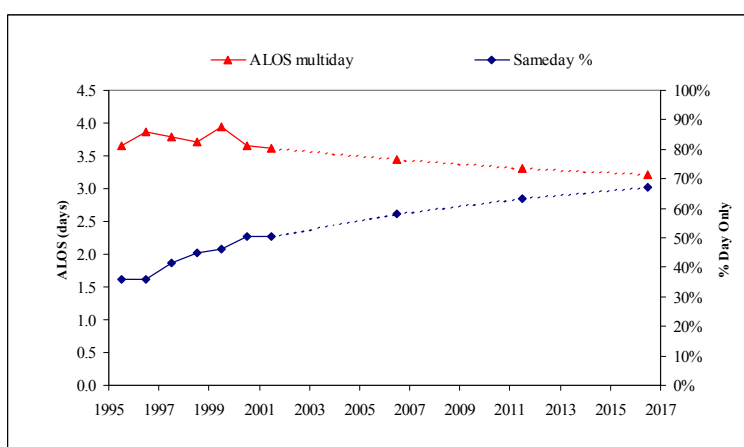
**Figure 4: Other Eye Procedures forecast (separations) – Victorian public and private hospitals, 2001-02 to 2016-17**



**Figure 5: Other Eye Procedures forecast (ALOS and % sameday) – Victorian public and private hospitals, 2001-02 to 2016-17**



**Figure 6: Non-procedural ophthalmology forecasts (separations) – Victorian public and private hospitals, 2001-02 to 2016-17**



**Figure 7: Non-procedural ophthalmology forecasts (ALOS and % sameday) – Victorian public and private hospitals, 2001-02 to 2016-17**

Forecast growth for private hospital ophthalmology separations are similar to the public sector with forecast growth of 3.5% pa to 2016-17 (Appendix 9). The ALOS for multiday ophthalmology separations are lower in private hospitals than public and is forecast to reduce from 1.32 in 2001-02 to 1.28 in 2011-12, a reduction of 3%.

As is demonstrated in the above tables and graphs, the main area that is forecast to change in volume is Cataract Procedures. As this is the major component of ophthalmology practice and is forecast to become even more dominant, specific attention will be given to the issues relating to cataract surgery growth and demand.

## 5.2 Cataract surgery

Cataract surgery is now one of the most common surgical procedures. Its effectiveness is well established with around 80 to 95% of patients having improved visual acuity and functioning after surgery. The procedure is safe, with approximately 20 percent of patients needing follow-up laser treatment within two years of surgery because of opacification of the posterior capsule (Acosta & Tuni, 2003).

Longer life expectancy and decreased surgical risks (safer, less invasive techniques) lower the threshold for surgery. In addition there is a greater social demand for surgery as a result of it being perceived as a highly cost effective intervention (Busbee, 2002).

Approximately one-third of patients receiving first eye surgery will have surgery on their second eye within the following year and 50 percent will do so within two years. The benefit of second eye surgery, however, has been questioned given the allocation of substantial resources. A Cochrane review has been established to evaluate the effects of cataract surgery in both eyes in comparison with surgery in only one eye (Acosta & Tuni, 2002).

Whilst the outcomes of the Cochrane review are not yet reported a recent study from the United States on cost-utility of cataract surgery in the second eye concluded that that second eye cataract surgery is one of the most cost-effective procedures in ophthalmology and across medical specialities. Second eye cataract surgery at \$2,727 per quality-adjusted life-years (QALY) gained, seemed nearly as valuable as initial cataract surgery at \$2023 per QALY gained (Busbee et al, 2003).

## 5.2.1 Cataract surgery growth

The main determinants of future growth in demand for cataract surgery are recognised as:

- Ageing of the population.
- Population growth.
- Change in threshold for surgery.

While ageing and population growth have been influences in the growth rate of cataract surgery, the change in threshold for surgery has been the major influence over the past 6 years. Table 31 demonstrates that while Victoria's total population has grown at 1.1% pa and the population aged over 70 years has grown at 3.0% pa, cataract procedures have grown at 8.1% pa. The age standardised growth rate of cataract procedures has been 5.5% pa, attributable to the reduction in threshold of surgery.

**Table 31: Growth in population and cataract procedures - Victoria 1995-96 to 2001-02**

	1995-96	2001-02	Growth pa- 1995-96 – 2001-02
Victorians 70+ years of age	391,194	452,604	3.0%
Total Victorian Population	4,560,155	4,822,663	1.1%
Cataract Procedures	21,152	31,259	8.1%
Age adjusted Cataract Procedures (adjusted to 2001/02 population distribution)	23,925	31,259	5.5%

This high growth in cataract surgery is not unique to Victoria and has been reported in many jurisdictions. The common unit of measure of cataract surgery is the Cataract Surgery Rate (CSR) defined as the number of procedures per million people per year. The Victorian CSR of 6,116 is among the highest reported in the literature, comparable to other Australian states and higher than international comparisons (about 5,700 for the United States, 4,000 for Sweden and 2,700 for the United Kingdom) (Taylor, 2000).

**Table 32: Cataract Surgery Rate per million people 2001-02<sup>11</sup> – Australian States and Territories –ABS and AIHW (2003)**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public hospitals	13,531	11,803	4,761	4,232	4,489	112	652	303	39,883
Private hospitals	34,284	17,774	20,733	7,989	6,782	N/A	N/A	N/A	91,257
Total	47,815	29,577	25,494	12,221	11,271	112	652	303	131,140
Total populn	6,608,792	4,836,196	3,664,284	1,913,850	1,515,748	472,116	320,275	197,617	19,531,464
CSR	7,235	6,116	6,957	6,386	7,436	237	2,036	1,533	6,714

The forecast CSR for 2016-17 is approximately 12,000 (Figure 8). This data can be used to estimate the future reduction in surgery threshold by relating it to "The Golden Triangle of Ophthalmology" (Figure 9) (Taylor, 2000).

As the threshold for surgery continues to decline, the marginal benefit from surgery will also decline, leading to less value for money for society (Hurst & Siciliani, 2003). Priority setting initiatives may be appropriate to implement to ensure that the most appropriate people are receiving surgery and that the payers (Consumers and Government) achieve best value for money.

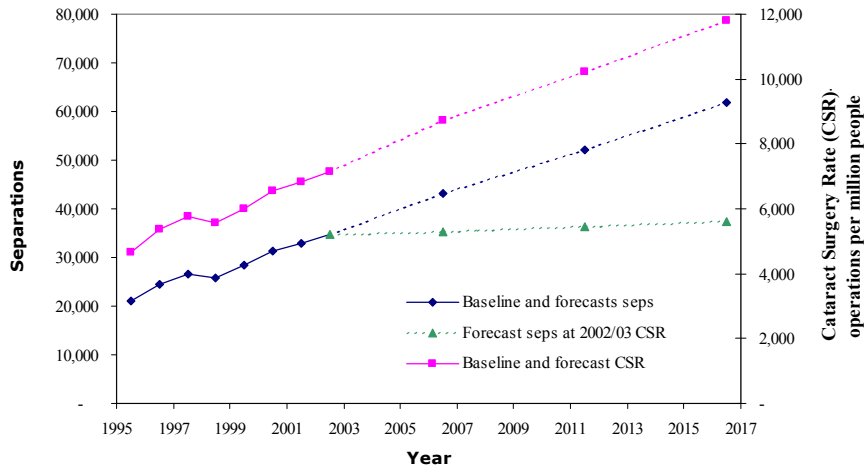
In a comment on priority setting for ophthalmology services, Mordue (1998) suggests that it would be valuable to have information on different base levels of need to assist health boards and authorities in decisions about the costs and benefits of different levels of service provision since they must compare the health improvements that would be generated by treating patients at various levels of visual acuity with those from investing resources in other ophthalmological treatments or in other specialities.

It is generally agreed worldwide that the decision to perform cataract surgery should not be based on visual acuity or the presence of a cataract alone, but should depend mainly on whether the visual function of a person limits their ability to undertake activities of daily living (Lee, 2000; Wright & Robens-Paradise, 2001).

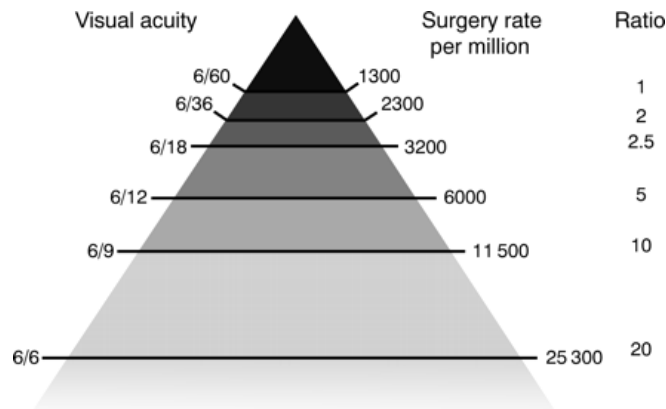
<sup>11</sup> Separations relating to ICD block 197: Extracapsular crystalline lens extraction by phacoemulsification

In Canada, however, a large project to assess the feasibility of assessing surgical indications and outcomes on a routine basis found

that many cataract operations are now carried out for patients with minor visual acuity deficit and minimal self-reported visual disability. In some cases, no significant cataract exists at all....Questions must be raised about the level of visual disability that constitutes medical necessity and whether refractive error is an acceptable indication for surgery. These questions would be of little importance if the procedure was free of risk, but this is never the case in any form of surgery and cataract operations carry a 2-4% risk of serious complications to the eye' (Wright & Robens-Paradise, 2001).



**Figure 8: Forecast Cataract Surgery Rate (CSR) and separations - Victoria 2002-03 to 2016-17**



**Figure 9: The golden triangle of ophthalmology; the relation between different thresholds of visual acuity and the cataract surgery rate.**

A number of strategies have been proposed to manage demand for cataract surgery. These include:

- Adoption of agreed indicators for cataract surgery to ensure appropriateness based on available evidence.
- Development of prioritisation systems for surgery based on measurements of disability, visual function, quality of life etc. Examples of prioritisation systems are provided in Section 8.
- Improved efficiency of cataract surgical services, including waiting list management, review of models of care, operating theatre utilisation.
- Increase the number of trained ophthalmologists to perform cataract extraction.
- Improve technology.
- Implementation of primary prevention strategies.

### 5.3 Projected incidence of eye disease

The forecasts provided by the department are for inpatient care. A large proportion of eye disease, however, requires little or no inpatient treatment and can be effectively managed in the community or outpatient settings. The VIP has demonstrated the demand for eye care in the most common conditions:

#### 5.3.1 Diabetic eye disease

As all people with diabetes are at risk of developing eye disease and only half of these people have regular eye examinations, a large unmet demand for services exists. Considering that early diagnosis and treatment can prevent up to 98% of severe vision loss, strategies that address the barriers to regular screening (lack of awareness and communication breakdowns) have been identified as the means of managing this condition.

#### 5.3.2 Glaucoma

As glaucoma prevalence is closely correlated with ageing, the ageing of the population over coming years will have a profound effect on the incidence of the disease (Figure 10). Current estimates extrapolated from the VIP indicates that the prevalence of glaucoma will grow from approximately 41,000 people aged over 40 years to more than 55,000 by 2016 in Victoria.

Early detection and effective treatment are likely to have a significant impact on the level of consequential visual impairment from the disease, as half of all glaucoma is undiagnosed.

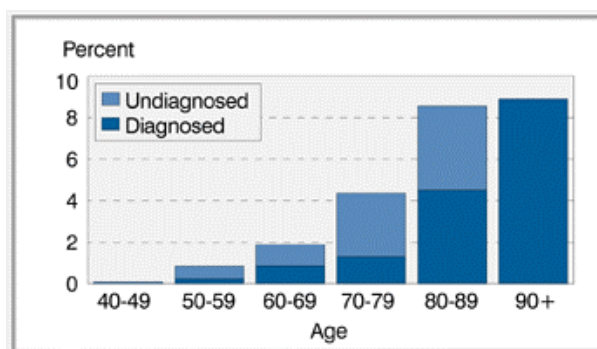


Figure 10: Age specific prevalence of glaucoma (Centre for Eye Research Australia)

#### 5.3.3 Age-Related Macular Degeneration

As with glaucoma above, prevalence of AMD is also age-related (Figure 11). The prevalence of the disease is forecast to grow from 330,000 people in 2003 to more than 430,000 people in Victoria by 2016. While the effectiveness of treatment strategies is currently limited, the development and uptake of new technologies (ie. photodynamic therapy) will be in high demand.

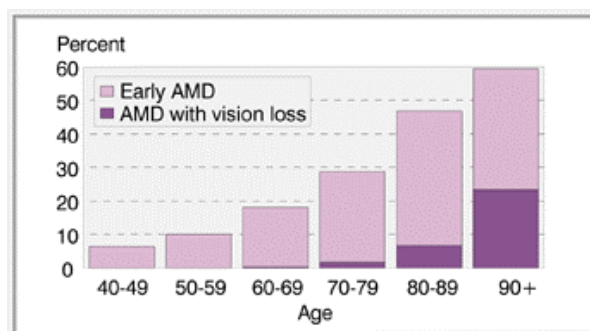


Figure 11: Age specific prevalence of AMD (Centre for Eye Research Australia)

Table 33 illustrates the primary treatment strategies and their settings for each of the five most common forms of eye conditions.

With an ageing population the prevalence of each of these eye conditions is expected to increase. Findings from the VIP suggest that the amount of visual impairment and blindness increases three fold with each decade of age and without specific intervention the amount of eye disease in Australia will double in the next 20 years (CERA, 2000). These findings have implications on the provision of ophthalmology services in the outpatient and community setting.

**Table 33: Management settings for the treatment of eye conditions**

Eye condition	Outpatient/community (non admitted)					Inpatient (admitted)
	Visual aids/ rehabilitation	Glasses/ contact lens	Monitoring	Drugs	Laser	Surgery
Refractive error	*	✓	*	*	✓	✓
AMD	✓	*	✓	*	✓	*
Cataract	*	✓	*	*	*	✓
Glaucoma	*	*	✓	✓	✓	✓
Diabetic retinopathy	*	*	✓	*	✓	*

Note: Visual aids and rehabilitation strategies may be used for all eye conditions if irreversible visual impairment results. Vision deterioration from early cataract may be corrected with glasses.

## 5.4 Service innovation

Innovations in service delivery and technology are likely to continue to occur. A recognition of future clinical changes offers insights into future models of care.

### 5.4.1 Clinical developments

Speculation on future advances in ophthalmology has been undertaken by Taylor and Keeffe (2002) and include:

- Improved glaucoma screening technologies and protocols for community use.
- New non mydriatic fundus cameras for use by non-specialised staff for the early detection of diabetic retinopathy.
- An accommodating intraocular lens that will remove the need for reading glasses after surgery (probably 5 – 15 years away).
- Photodynamic therapy to reduce or delay vision loss from AMD. Long term benefits are still unclear.
- Dietary supplements for age related eye disease.
- The identification of genes related to the presence and severity of glaucoma. It was considered unlikely that gene therapy will prevent eye disease in the short term but will identify those at risk.
- Even though the bionic ear is highly successful, a successful bionic eye is unlikely in the next 10 years.

### 5.4.2 Prevention & health promotion

There is an increasing focus on health promotion which has the potential to increase demand for eye services, as many eye disorders are undiagnosed. The Victorian State Government will provide \$1.8 million over 3 years towards the 'Vision Initiative' run by Vision 2020. This initiative is a public eye health program run in collaboration with eye health care providers, researchers, rehabilitation and support services aimed at encouraging the general public to have regular eye tests.

Q14. What strategies should be developed and implemented to manage demand for treatment of eye disease such as cataract surgery, glaucoma, diabetic retinopathy and ARM?

Q15. What innovations in clinical practice, models of care, technology and health promotion will change treatment patterns over the next decade?

## **6.0 Service configuration and models of care**

### **6.1 National**

#### **6.1.1 Victoria**

The Metropolitan Health Care Services Plan (1996) announced that a review of statewide ophthalmology services would be undertaken to determine optimal service configuration and funding arrangements for ophthalmology services across the state, with particular focus on the need to make high quality and efficient ophthalmology services more accessible to rural Victorians.

Whilst the review of ophthalmology services did not occur, a 'hub and spoke' model was implemented at the RVEEH with spoke facilities developed for ophthalmology at Maroondah Hospital and Broadmeadows Health Service. A hub and spoke model is a model of service delivery where highly specialised services are maintained at one or two locations (hubs), while high volume or lower complexity same day services will be provided by staff from the hub in distant locations, called spokes. The hub supplies the staff and pays the spoke only for the hire of facilities.

##### **6.1.1.1 RVEEH**

The Royal Victorian Eye and Ear Hospital (RVEEH) is a statewide specialist teaching, training and referral hospital in Ophthalmology and ENT. Internationally, it is one of about twenty stand-alone specialist hospitals in eye and ear medicine.

The main hub in East Melbourne provides comprehensive specialist and emergency services with spoke services for ophthalmology delivered in East Ringwood (Maroondah), Broadmeadows and spoke services for ENT delivered in Blackburn.

The RVEEH plays a key role in teaching and training for health professionals in the areas of ophthalmology and ENT and has an international reputation in medical research through its close association with the University of Melbourne Departments of Ophthalmology and Otolaryngology, its affiliation with the Centre for Eye Research Australia (CERA), the Bionic Ear Institute and the Cochlear Implant program

##### **Ophthalmology services**

As discussed in Section 3 the RVEEH performs 42% of the State's public ophthalmology admitted patient services, 70% of VACS funded ophthalmology outpatient services and treats 49% of ophthalmology emergency presentations captured through the VEMD.

The Broadmeadows and Maroondah spokes provide specialist ophthalmology outpatient and surgical services. Broadmeadows provides same day surgery, with patients requiring specialist support or overnight or multiday stay treated at the East Melbourne site.

The implementation of spoke services has improved access to basic ophthalmology services in the northern and eastern growth corridors. It has been met, however, with high infrastructure costs and the costs of transporting staff and equipment across campuses.

The RVEEH supports rural Victoria through a program of statewide registrar rotations in several rural locations and through a number of joint appointments of consultant ophthalmologists at rural hospitals.

RVEEH provides the largest ophthalmology service with 42% of all public inpatient separations in Victoria. It has a high proportion of super-specialty surgery and service delivery, including:

- 90% of the state's public major corneal, scleral and conjunctival procedures
- 75% of the state's public retinal surgery
- 71% of the state's public glaucoma procedures
- 39% of the state's public cataract surgery

As well as providing general ophthalmology outpatients services the RVEEH provides a range of sub-speciality outpatient clinics. Specialty areas include: glaucoma, vitreo-retinal, ocular motility, orbitoplastics, corneal, ocular diagnostics, medical retinal and ocular immunology.

The RVEEH undertakes the medical teaching of all ophthalmology trainees in Victoria in conjunction with the University of Melbourne and the RANZCO. It provides sub-specialty medical training in ophthalmology and accredited training in ophthalmic nursing, and orthoptics and is affiliated with the relevant university schools including the University of Melbourne, Latrobe University, RMIT, and Deakin University.

The RVEEH houses a number of academic and research groups for ophthalmology which include:

- Centre for Eye Research Australia (CERA)
- The University of Melbourne Department of Ophthalmology
- Lions Eye Bank

- W.H.O. Collaborating Centre for Prevention of Blindness
- McComas Family Laboratory (Ophthalmology)

As part of their quality improvement program the RVEEH has been involved in benchmarking its practices and performance in cataract surgery with a range of international hospitals with similar profiles. When compared to these other hospitals the RVEEH had:

- The highest number of outpatient visits for cataract patients providing three post operative reviews after cataract surgery compared to one or two.
- The lowest day surgery rate.
- The lowest number of cataracts per teaching list: RVEEH treats 8 patients on a full day operating list compared with 11 or 12 patients per list for international benchmarks.
- One of the longest waits for cataract surgery, at 32 weeks.  
(EAEH, 2000; RVEEH Quality of Care Report, 2003)

The role of teaching and training should be considered when benchmarking services as the involvement of trainee ophthalmologists and their level of experience can affect surgical productivity. Data provided by the RVEEH demonstrates the numbers of patients booked for surgical operating list and the registrar level (Table 34). Increases in surgical productivity have occurred at the RVEEH since 2001 by one patient per list for most registrar levels to make the RVEEH comparable with some national and international hospitals.

**Table 34: Number of patients booked per ophthalmology surgical list and registrar level**

RVEEH	1 <sup>st</sup> Year	2nd Year	3rd Year	4th Year
Jul-01	2	3	3	4
Sep-02	3	3	4	4 - 5
Sep-03	3	3	4	5
<b>Benchmarks</b>				
Massachusetts Eye and Ear Infirmary	3	3	3	3
Sydney Eye Hospital	3	3	4	5
Singapore National Eye Centre	3	4	5	5 - 6
Cranbourne Integrated Care Centre				5

### 6.1.1.2 Southern Health Ophthalmology

In 2002, Southern Health Ophthalmology established ophthalmology surgical services at the Cranbourne Integrated Care Centre (CICC). The CICC provides same day surgery for low risk ophthalmology patients. Patients considered high risk or requiring overnight or multiday stay are treated at Southern Health's Moorabbin campus. As discussed in Section 4, CICC is a designated ophthalmology ESAS hospital.

In 2003-03, CICC treated 1,800 (8%) public inpatient ophthalmology separations making it the second largest provider of public ophthalmology surgery. Cataract surgery constituted 82% of all separations treated at CICC.

A new model of service delivery for cataract surgery has been implemented at the CICC which is outlined below.

- First day post-operative reviews for straightforward small incision cataract cases have been discontinued and all post-operative cataract patients attend a one week post-operative review clinic. Only high-risk patients, such as those who have had complicated surgery, large incision surgery, an only eye, or at the discretion of the surgeon, are reviewed on the first post-operative day.
- Alternatives to conventional post-operative review visits are being explored. These include shared care with non-ophthalmologists, improved peri-operative patient education, and the use of both specific and general health related quality of life instruments (VF14 & SF-12).
- If required, patients receive one pre-admission visit and are given a date for surgery on that day. This model has not been independently evaluated although preliminary audit estimates indicate this to be an economic and resource-efficient model with comparatively high-volume of patients treated and short waiting times.

### 6.1.1.3 Post-operative Review for Cataracts

There is a number of viewpoints in Australia and overseas in relation to first-day and first or second-week post-operative review. As noted above, Southern Health Ophthalmology at CICC, has discontinued the first day post-operative review for straightforward small incision cataract cases.

Southern Health Ophthalmology's decision is consistent with the Royal College of Ophthalmologist's (UK) cataract surgery guidelines published in 2001. These state that patients should be seen on the first day if they have had complicated surgery, large incision surgery, have co-existing eye disease, or have an only eye. Patients not reviewed on the first day must be given clear instructions regarding expectations, post-operative management, follow-up arrangements and help.

The Royal Australian and New Zealand College of Ophthalmology (RANZCO) Preferred Practice Patterns for Intraocular Lens Surgery do not make specific reference to first day post-operative review and recommend that the minimal frequency of patient review following phacoemulsification and implant surgery should include a review within 3 days of surgery with a final visit approximately 2-3 weeks following surgery (RANZCO, 2003).

Although it is acknowledged that there is a small incidence of early post-operative complications following cataract surgery, some studies suggest that there is no additional risk for patients who do not attend for the first day review. For example, Wu and Morrell (2001) in a nationwide survey reported a considerable heterogeneity of post-operative instructions following uncomplicated cataract surgery provided by 115 cataract centres in the UK, with 35% of centres adopting a single post-operative review.

In a prospective study of uncomplicated phacoemulsification cataract surgery, Tan et al (2000) reported first day review complications of corneal oedema (4.4%), raised intraocular pressure  $\geq 30$ mm Hg (1.3%), hyphaema (0.9%), corneal abrasion (0.4%), and anterior uveitis (0.4%). These findings led to the standard postoperative management being altered for 2.2% of patients. They concluded that routine first day post-operative review following uncomplicated cataract surgery could be safely withdrawn with a post-operative review required at 1-2 weeks supplemented by patient initiated post-operative review in the interim. The need for explicit post-operative instructions regarding warning symptoms and easy access to advice and review if needed was emphasised.

A recent randomised trial in the United Kingdom examined the safety implications of omitting first day clinical review following phacoemulsification cataract surgery by comparing "same day discharge" with a planned post-operative review at two weeks to "next day review" (Tinley et al, 2003). It was reported that the "same day discharge" group was associated with a low frequency of ocular complications and differences in the proportions achieving good visual outcomes, were not significant. In addition it was reported that within the first month of surgery there was 1.0 outpatient visit saved for every patient managed as a "same day discharge".

### 6.1.2 NSW

The Statewide Services Development Branch of the NSW Health Department commissioned a review and report on Ophthalmology activity in NSW. This report was released in 2003 and identifies key issues and provides a service plan for the provision of ophthalmological services in NSW. The review highlighted:

- A substantial shift of ophthalmology inpatient services to the private sector.
- Loss of ophthalmology wards from most general hospitals and therefore a much reduced presence of ophthalmologists in these hospitals.
- Promotion of efficient same day surgical models for cataract surgery.
- Eye outpatient activity has greatly reduced since the introductions of medicare and now retained at only those hospitals with accredited registrar training positions.
- Provision of public outpatient services in some centres has been negotiated with private practices.
- A number of models of care involving private funding models.
- Fee for service arrangements in rural areas where registrar support is not available.

Key issues identified were:

- Inequitable access to ophthalmology services across NSW resulting from variances in:
  - The availability of the specialised workforce.
  - The ability of the community to pay for private services.
  - Resource availability within the public sector.
  - The relative weighting given to ophthalmology within those resources.
- 27% of public ophthalmology separations involve residents having treatment outside their area.
- Long waiting times for surgery with 22% of patients waiting greater than 12 months.
- Substantial area variation in utilisation of services. Most rural areas have high utilisation rates.
- Projections of demand forecast a 52% increases in ophthalmology separations from 2000 to 2011. The main driver is cataract surgery with projected increase of 66% by 2011.

Key recommendations include:

- Statewide: Establishment of a 'Statewide Ophthalmology Service' (SOS), with responsibilities related to models of care, ensuring best practice, promoting cooperation between public and private providers, co-ordinating and promoting statewide initiatives related to visual impairment, its prevention and other community and public health eye care services, workforce, training and fostering research across networks. An interim SOS has been established along with working groups formed for the following areas:
  - Public hospital cataract services
  - Provision of hospital services
  - Nursing issues
  - Orthoptic issues
  - Rural issues

- Local Networks should ensure:
  - Local delivery for non-complex ophthalmology with cross-area networking for complex procedures.
  - Links with general practice.
  - All emergency departments have facilities for basic eye examinations and treatment. Designated trauma centres have specialist ophthalmologist on-call rosters.
  - No tight controls on sites performing complex ophthalmology.
  - Closer networking arrangement of outer metropolitan areas with other areas.
  - Sydney Eye Hospital (currently co-located with Sydney Hospital) should remain the State referral centre for the most complex tertiary conditions, continue to have substantial volumes of local patient activity, clarify its role as a major supplier of routine services to adjacent areas, become the major provider of outreach services and support for ophthalmologists in rural areas.
  - Recognise logical relationships of border areas to services in other states to ensure appropriate access to their networks for complex services as required.

## **6.2 International**

### **6.2.1 United Kingdom**

In 2000 the United Kingdom National Health Service (NHS) provided approximately \$130m (Aus) funding for the purpose of reducing cataract waiting lists to less than three months with the average waiting time falling to six weeks (The NHS Plan: A Plan For Investment A Plan For Reform, 2000a).

It is envisaged that these goals would be achieved by means of:

- An expansion of service capacity.
- An increase in staff numbers and the recruitment of specialists, consultant surgeons, outpatient nurses and technical support staff from overseas.
- The establishment of Diagnostic and Treatment Centres (DTCs) to increase the number of elective operations which can be treated in a single day or with a short stay. These Centres aim to separate routine hospital surgery from hospital emergency.

The Department of Health (2003) has developed a draft strategic plan for national eye care services for the delivery of modernised services and improved pathways. This plan acknowledges that the NHS needs to develop primary care ophthalmic services in order to meet increased need, particularly from demographic change.

The main areas of change in the pathways concern the interface between primary and secondary care, with recommendations for a greater community-based role for optometrists. This would comprise appropriate training, audit and clinical governance.

The proposed care pathways are considerably streamlined and designed to achieve:

- Support for the development of integrated eye care services across primary and secondary care and social services.
- Better use of the skills available in primary care.
- An increased role for professional groups, such as optometrists and Dispensing Opticians, working in primary care.

Proposed pathways for a range of eye conditions are outlined in Appendix 10.

The NHS 'Action On Cataract' program is aimed at improving access to treatment for people who need cataract surgery. A Good Practice Guide (2000b) was developed drawing on experience and on best practice identified in cataract surgery. Recommendations were developed relating to the following themes:

- Streamline the pathway of diagnosis and treatment.
- High volume high quality surgery.
- High quality patient information.
- Audit outcomes.

Best practice was described as:

- Population access rates of more than 3000 cases per 100,000 people aged 65 and over.
- One-stop diagnosis and pre-operative assessment clinics.
- Waiting times for outpatient appointments of 4 weeks or less.
- Booked admission dates, and waiting times for surgery of 2-3 months.
- Day case rates of 85%-95%.
- Day of surgery: patients spend not more than 90 minutes at the hospital.
- Post-operative review: one visit only for uncomplicated patients.

### **6.3 Role delineation**

Role delineation is a process that determines what support services, staff skills and minimum safety standards are required to ensure that clinical services are provided safely and appropriately (QLD Health, 1994). Several jurisdictions in Australia, including Victoria, NSW and Queensland have developed, or are in the process of developing service framework guidelines to enable hospital boards and executive staff determine their ability to provide safe, appropriate clinical services.

Q16. What service configuration and models of care for ophthalmology services in Victoria would best meet the needs of stakeholders (consumers, providers, teaching and research), including:

- Primary care (screening and prevention)
- Community care
- Hospital based services (emergency, outpatient and inpatient)
- Public and private collaboration

Q17. What are the barriers to achieving optimal service configuration?

Q18. What support services, staff skills, minimum safety standards and other requirements are needed to ensure that ophthalmology services are provided safely and appropriately across a variety of settings?

## 7.0 Workforce and training

### 7.1 Workforce

Since the mid-1990s, various studies have been undertaken into the nature and supply of eye health care professions in Australia. These studies examined issues relating to the adequacy of the existing workforce, projected workforce requirements as well as supply affecting service capacity in relation to the demand for services.

This section provides an overview of these studies and possible implications for the provision of statewide ophthalmology services in Victoria. Table 35 provides a summary of the workforce profiles for each eye professional group. While the data are not provided for the same year for each group this table shows that there are just over 1,000 eye care professionals working in Victoria (excluding general practitioners).

**Table 35: Workforce profiles of eye care professionals**

	Ophthalmologists		Orthoptists	Optometrists	Ophthalmic nurses
	1996 AMWAC	2003 RANZCO	2001	1998-99	2003
<b>No. practising</b>					
Nationally	675	-	434	2,786	-
Victoria	173	168	165	684	54
<b>Gender/Age</b>					
Male	148 (87%)	142 (85%)	5 (3%)	400 (58%)	0%
Female	19 (13%)	26 (15%)	160 (97%)	284 (42%)	100%
Average age (years)	48% < 50 yrs	92% < 70 yrs	60% < 35 yrs	46% < 35 yrs	Ave yrs 45
<b>Sector</b>					
Public	70% have appointments	-	27 (16%)	-	29 (54%)
Private	-	-	140 (84%)	-	25 (46%)
Rural	11.6%	18 (11%)*	12 (7%)*	128 (18%)	6 (11%)
Metropolitan	88.5%	150 (89%)	153 (93%)	567 (82%)	48 (89%)
Number: population	3.6: 100,000	3.4: 100,000	3.4: 100,000	14.9: 100,000	1.1: 100,000

\* Figures do not include the number of metropolitan ophthalmologists and orthoptists who provide services to rural areas.

#### 7.1.1 Ophthalmologist Workforce

In 1996 the Australian Medical Workforce Advisory Committee (AMWAC) undertook a comprehensive study of the ophthalmology workforce. The main objective of this study was to "...promote an optimal supply and appropriate distribution of ophthalmologists, including projections for future requirements to the year 2006."

The findings of this study are as follows:

- The practising workforce was estimated to be 675 in 1996, with Victoria having 173 ophthalmologists or 25.6% of all ophthalmologists nationwide.
- The ophthalmology workforce had grown by 25.6% nationally and by 29.1% in Victoria in the ten years to 1994-1995.
- The number of ophthalmologist per head of population in Victoria had increased from 1:30,747 to 1:26,016 in the ten years to 1994-1995.
- In Victoria 85% of ophthalmologists had their primary practice in a capital city, 3.5% in major urban areas and the remaining 11.6% in rural and remote areas.
- A 1994 study by the then RACO (now RANZCO) found that 70% of ophthalmologist had one or more public hospitals appointments, 8% were seeking public hospital appointments, 27% of those with appointments were willing to do more work, and nine vacant positions were identified in public hospitals.
- No evidence was found to suggest that laser treatments and other technology will be a major factor in determining future requirements in the ophthalmology workforce.

Although undertaken eight years ago, the AMWAC study concluded that the ophthalmology workforce is "...probably adequate in total, but that there appears to be some misdistribution of the workforce between the States." Further, the report concluded that "...the current projected level of graduate output will not be sufficient to meet expected future requirements, which is estimated to grow by 1.6% per annum."

Among the key recommendations of the AMWAC study were:

- An increase in the number of funded ophthalmology training positions and trainees. For Victoria training posts were recommended to be increased from 22 in 1995 to 23 by 2002 and 25 by 2006.
- That State/Territory health departments undertake negotiations with the then RACO for the establishment of additional training positions.
- Options to meet localised shortfalls include use of appropriately qualified and skilled overseas trained ophthalmologists; and increased skilling and use of general practitioners, particularly in rural areas.

More recent ophthalmology workforce details were provided by the RANZCO for 2003. These are as follows:

- Victoria has 168 practising ophthalmologists (150 metropolitan and 18 rural). Details were not available on the number of metropolitan ophthalmologists who provide regular services to non-metropolitan areas.
- Of the 168 ophthalmologists 156 (93%) were under the age of 70 years.
- 142 were male and 26 female.
- The number of ophthalmology trainees in Australia is 92, 33 of whom are based in Victoria. Four of the trainees are overseas trained specialists. The commencement of a five year post graduate training course for specialist ophthalmologists in 2004 will reduce the number of graduates in Victoria from 8 to 6 per year (a reduction of 25% per annum).
- RANZCO is commencing a workforce study and needs analysis in February 2004, due for completion in June 2004.

### **7.1.2 Optometrist Workforce**

In 1999, the Australian Institute of Health and Welfare (AIHW) undertook a study of trends in the optometrist labour force for the period 1991 to 1999. Among some of the findings of this study were the following:

- In 1998-99 there were 2,786 optometrists employed in Australia, with 684 in Victoria (24.6%).
- Over the period from 1986 to 1996, the number of persons working as optometrists per 100,000 population increased from 9.2 to 12.3.
- The number of optometrists per 100,000 population increased from 13.4 to 14.8.
- The optometry workforce is relatively young. Almost half (46%) of the workforce was aged less than 35 years
- Considerable variation in the distribution of optometrists among the States and Territories. Nationally, there were 14.9 optometrists per 100,000 population in 1998-1999. New South Wales, Tasmania and Queensland had higher ratios while the Northern Territory, South Australia and the ACT had lower ratios. In Victorian the figure was 14.9 per 100,000.
- Optometrists were also unevenly distributed by geographic region. In 1998-1999 in Victoria there were more per 100,000 population in large rural centres (18.7), capital cities (16.8), and small rural centres (16.1), compared with other metropolitan areas (13.2), remote centres (11.6), other rural areas (6.2) and other remote areas (0.9).

Based on an extrapolation of current trends, the AIHW study found that there appears to be no evidence of a projected shortage of optometrists to 2009, nor of significant excess supply.

### **7.1.3 Orthoptist Workforce**

A draft report of the orthoptist workforce by the National Rural and Remote Allied Health Advisory Service (2003), found:

- 434 respondents to the 2001 census recorded their occupation as orthoptist, with 165 (38%) residing in Victoria.
- Nearly 90% are located on the eastern seaboard.
- 12% of orthoptists were in rural and remote regions of Australia.
- In Victoria, 93% were employed in capital cities, 8% were employed in inner regional areas
- The split between private and public was 84% and 16% respectively.
- Sixty per cent of orthoptists were aged less than 35 years.
- The orthoptic workforce has grown by 19% over the past 5 years.
- The numbers of orthoptists per population is on average 1:100,000, rising to 4:100,000 in capital cities and none for residents in remote regions. In Victoria the average is also 1:100,000, rising to 4:100,000 in capital cities and 1:100,000 in inner regional areas.
- 86% were female

The report concluded that employment prospects for orthoptists to 2007-2008 were rated as strong.

### **7.1.4 Ophthalmic Nursing Workforce**

Data relating to ophthalmic nurses were acquired from the Department of Human Services, Nurse Policy Branch. In 2003, there were a total of 54 ophthalmic nurses employed in Victoria, at an average age of 45 years compared with 43.8 years for all nurses.

Over half of ophthalmic nurses were employed in the public sector (53.7%) compared with 65.8% for all nurses. Three-quarters were employed on a permanent basis (74.1%). Almost half of ophthalmic nurses are employed as registered Grade 1 or Grade 2 nurses as opposed to a third for all nurses. There were 11.1% classified as Clinical Nurse Specialists compared with 8.7% for all nurses. Almost all (88.9%) ophthalmic nurses are employed in the metropolitan Melbourne compared with 63.0% for all nurses.

### **7.1.5 Anaesthetist Workforce**

An AMWAC review of the anaesthetic workforce was conducted in 1996. In acknowledgement of the changing nature of the medical workforce, this review was updated in 2001. The findings of the 2001 review are as follows:

- In 2001 the Australian and New Zealand College of Anaesthetists (ANZCA) reported there were 2,103 anaesthetists in Australia with 538 in Victoria.
- The number of anaesthetists per one hundred thousand of population was estimated as 11.3.
- The number of public hospital vacancies was estimated at 21 for Victoria.
- Nationally, 85.2% of anaesthetists were located in metropolitan areas (77.9% in a capital city and 7.3% in a major urban centre) and 14.8% were located in rural areas (9.9% in large rural centres and 4.9% in other rural areas).
- To meet projected anaesthesia service requirements for the period 2001 to 2011 of 2.2% per year, the average number of anaesthesia graduates should increase to 128 per year requiring the number of training positions to be increased to a minimum to 512 by 2003. It was recommended that by 2003 Victoria have a minimum number of training positions of 123, however, it was noted that in 2001 they already exceeded this figure with 130 training positions.
- While some technological advances are increasing demand for anaesthetists other advances reduce demand. For example the use of ophthalmological lasers has increased 295% since 1985-86 and is expected to increase. Overall it was concluded that there was no evidence that technology would dramatically increase or decrease the current trend in demand for anaesthesia.
- It was recommended a further update of the anaesthesia workforce be undertaken in 2006-07.

## **7.2 Training**

### **7.2.1 Education providers**

#### **7.2.1.1 Universities and educational facilities**

Providers of education for eye health care professions include:

- Department of Ophthalmology, University of Melbourne
- Department of Optometry & Vision Sciences, University of Melbourne
- School of Orthoptics, Latrobe University
- Deakin University (Ophthalmic nursing)
- Royal Melbourne Institute of Technology (medical photography)

The RVEEH coordinates the medical teaching of ophthalmology trainees in Victoria in conjunction with the University of Melbourne and the Royal Australian and New Zealand College of Ophthalmologists (RANZCO). Fellows of the RANZCO provide registrar training across twenty-four registrar training positions, 14 at the RVEEH and 11 in other general public hospitals. Rural training posts are located in Geelong, Ballarat and Albury-Wodonga.

The RVEEH provides accredited training in ophthalmic nursing and orthoptics. Orthoptic clinical training occurs in the public and private sectors with the RVEEH being the largest provider of clinical placements.

The RVEEH provides training in ophthalmology for medical students and post graduate training in ocular therapeutics for optometrists.

#### **7.2.1.2 Rural Training Programs**

A number of training programs have been developed to encourage healthcare professionals to practice in rural areas (Madden, 2002). A rural ophthalmic registrar, for example, has been established in Albury-Wodonga. An evaluation of this program found that six of 30 registrars who had undertaken the program established a practice in a rural area, and a further six registrars who were still training at the time intended to work in the country.

Madden (2002) reports that the then RACO has developed a curriculum for training a variety of rural health workers in basic ophthalmological assessment and care, as a means of redressing the lack of ophthalmological services in some rural and remote areas.

### **7.2.2 Trainee intake**

#### **7.2.2.1 Ophthalmology**

The RANZCO has announced that its postgraduate program for the training of specialist ophthalmologists, currently four years, will become a five-year program with the intake of trainees for commencement in the year 2004. The rationale is to incorporate the ophthalmic basic sciences within the training program, rather than require them as a pre-requisite for entry. As a result of this initiative the number of graduates in Victoria will reduce from 8 to 6 (25%) per year as the number of training positions has not changed.

Trainee intake figures for 2004 are 20, with a total of six to commence training in Victoria.

Q19. Does Victoria have an adequate eye care workforce across metropolitan and rural settings?

Q20. Is current training adequate to meet future demand for services in Victoria?

Q21. What service configurations are required to support training requirements in order to meet future demand for health care professionals in the delivery of ophthalmology services in metropolitan and rural settings?

Q22. Can other health professionals be integrated into the delivery of ophthalmology services (ie. Optometrists are having a greater role in chronic disease management)? What enablers are required to implement these changes?

Q23. What is the role of the private health care sector in providing training opportunities?

## 8.0 Monitoring performance and outcomes

Few statewide performance and outcome indicators for ophthalmology services are used in Victoria. Data collected at a state level mostly relates to access and efficiency, which includes waiting times for services and services costs. These are discussed in Section 4.

The Australian Council on Healthcare Standards (ACHS) collects a range of clinical indicators for ophthalmology services at a national level for benchmarking purposes as part of the EQuIP accreditation program. These have been developed by the ACHS in collaboration with the RANCZO as measures of the clinical management and outcome of care. Indicators have been developed for cataract surgery, glaucoma surgery, retinal detachment surgery and excimer laser. Indicator details are provided in Appendix 11.

Many Victorian hospitals involved in EQuIP accreditation report clinical indicator data to the ACHS. However, ACHS indicator data is not routinely reported to state Governments.

### 8.1 Appropriateness

Appropriateness of health care is about using evidence to do the right thing to the right patient, at the right time, avoiding under and over utilisation (VQC, 2003). There is debate about the appropriateness of some ophthalmology procedures, prioritising non-urgent eye surgery and the usefulness of cataract surgery in some patients.

#### 8.1.1 Prioritisation of services

There have been attempts internationally to develop prioritisation systems for managing elective surgical and medical waiting lists, including waiting lists for cataract surgery.

The Western Canada Waiting List Project (WCWL) was established to improve the fairness of the healthcare system to ensure that access to appropriate and effective medical services is prioritised on the basis of need and potential to benefit from surgery. The project focused on the development of valid, reliable, practical, and clinically transparent tools to assist in the management of waiting lists for selected diagnostic, procedural, and consultative procedures (WCWL, 2001).

Among the main findings of the WCWL were the following:

- Priority criteria tools had significant face validity and potential to be useful in clinical settings.
- General support from regional health authorities as a transparent and consistent method for assigning priority to patients on waiting lists.
- The public believed that the prioritization tools represent potential improvement of the health care system.
- Interest in expanding the existing scoring systems (eg. from cataract surgery to a broader range of ophthalmologic procedures) and to develop a prioritisation system for referrals.

An outline of the cataract surgery priority criteria used in the WCWL Project is provided in Appendix 12.

The New Zealand National Advisory Committee on Health and Disability developed the Clinical Priority Assessment Criteria (CPAC) criteria<sup>12</sup> that incorporate the factors used by experienced clinicians to arrive at judgements of severity of illness and expected benefit from treatment. It includes a range of clinical, patient-experienced and social measures.

An assessment of this method found that the priority criteria score faithfully reflects clinical judgement concerning the degree of benefit expected from cataract extraction. It was found that the CPAC scores prioritised moderately well according to a patient's experienced measure of need. However, most CPAC dimensions were not at all, or only weakly, correlated with a measure of ability to benefit: the extent of change in patient-experienced condition-specific health status for those receiving surgery (Derret et al, 2003).

#### Visual Function Assessment and the VF-14

Greater attention is now paid to the functional impact of lens opacities and the requirements of the patient as an individual in considering cataract surgery. This had led to additional weight being given to the patient's perceived difficulties in their daily life and their visual needs (Taylor, 2000).

The VF-14 is a widely adopted instrument used in the assessment of visual function. The VF-14 is a brief questionnaire designed to measure functional impairment for people with a cataract consisting of 18 questions covering 14 aspects of visual function. The VF-14 has a high internal consistency and is a reliable valid instrument providing information not conveyed by visual acuity or general health status measures. Further details and questions contained in the VF-14 assessment are provided in Appendix 13.

The VF-14 is more often used in surgical audit or research activities than in routine clinical management.

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<sup>12</sup> <http://bmj.bmjournals.com/cgi/content/full/314/7074/131>

### 8.1.2 Utilisation

Utilisation can be used as a measure of appropriateness of care. Utilisation of ophthalmology services is discussed in Section 4.

### 8.1.3 Complexity

The relationship between the volume of procedures that a hospital or practitioner performs and the better outcomes for the patient have been documented for certain types of surgery and procedures (NHS Centre for Reviews and Dissemination, 1995; Institute of Medicine, 2000).

As highlighted in Section 3 ophthalmology services are distributed over a range of service settings with a concentration of some patient types at the RVEEH. There is however no consistent definition of complex ophthalmology and where complex ophthalmic conditions should be treated.

In the review of ophthalmology services in NSW, casemix definitions were used for categorising ophthalmology procedures considered 'high cost complex' (NSW Health, 2002). Such procedures included:

- Orbital procedures
- Retinal procedures
- Glaucoma procedures
- Multiple eye procedures

It was found that 42% of high cost complex procedures performed in NSW were delivered in the private sector across a variety of facilities indicating that not all high cost complex procedures require teaching hospital infrastructure. Review of these procedures with the RANZCO advisory committee concluded that those considered requiring tertiary care included:

- Orbital procedures and infections
- Complex oculo-plastics
- Complex retinal
- Complex glaucoma
- Complex squint procedures

It was concluded that the most important consideration in providing some types of surgery (ie. vitreoretinal, ocular plastics and orbital oncology) was seen as having sufficient referred volume to support teams of sub-specialists to promote safe, high quality services and undertake peer review.

While this was done at a broad level no detail is available to differentiate complex from other glaucoma procedures for instance.

Q24. Would prioritisation systems for ophthalmology surgery improve eye care services in Victoria?

Q25. Is there a volume-outcome relationship for components of ophthalmology practice? - Is there a minimum volume of some procedures that should be performed by a health service or practitioner to ensure optimal outcomes for patients?





































































# Victorian Ophthalmology Service Planning Framework

## Discussion Paper: Response Submission Form

This response form is available in electronic format at <http://www.health.vic.gov.au/ophthalmology/>

Name:

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What is your interest in the project? (please tick the appropriate box)

Professional

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Other (please specify) .....

If you do not want your details to be published in the Framework document please indicate this by ticking the following box.

I do not agree to my name and organisation being published in the Framework document, as participating in the consultation?

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Q1. What are the barriers to people obtaining correction to refractive error?

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Q2. How can these barriers be addressed?

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Privacy declaration:

Your information is being sought for the sole purpose of developing a framework for the delivery of ophthalmology services in Victoria. Information gathered will be stored securely by the Department of Human Services and will not be disclosed to anyone outside of the Project without your consent. Contact details will only be used to inform you of information pertinent to the Project.

Q3. How can it be ensured that appropriate patients attend specialist ophthalmology emergency departments and that appropriate treatment is available at other emergency departments?

Q4. How can appropriate ophthalmic expertise be available in non-specialist emergency departments?

Q5. How can ophthalmology outpatient services be optimised?

Q6. What ophthalmology outpatient services should be provided in the following settings –

- Specialist tertiary hospital (RVEEH)
- General hospitals
- Community settings
  - Ophthalmologists
  - Optometrists
  - Other

Q7. What are the specific issues of rural Victorians in accessing ophthalmology outpatient services?

Q8. To what extent should the public system treat private ophthalmology patients (insured or uninsured)?

Q9. What types of ophthalmology services (emergency, outpatient, surgical, non-surgical) should be available to patients at general hospitals?

Q10. How could ophthalmology services be coordinated more effectively with non-ophthalmology specialties such as trauma, diabetes, and immunology?

Q11. What is an acceptable waiting time for non-urgent outpatient and inpatient ophthalmology care?

Q 12. What strategies are required to ensure timely provision of ophthalmic surgical services?

Q13. What are the cost and funding issues in ophthalmology that require action (inpatient, outpatient, emergency, Commonwealth, state)?

Q14. What strategies should be developed and implemented to manage demand for treatment of eye disease such as cataract surgery, glaucoma, diabetic retinopathy and ARM?

Q15. What innovations in clinical practice, models of care, technology and health promotion will change treatment patterns over the next decade?

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Q16. What service configuration and models of care for ophthalmology services in Victoria would best meet the needs of stakeholders (consumers, providers, teaching and research), including:

- Primary care (screening and prevention)
- Community care
- Hospital based services (emergency, outpatient and inpatient)
- Public and private collaboration

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Q17. What are the barriers to achieving optimal service configuration?

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Q18. What support services, staff skills, minimum safety standards and other requirements are needed to ensure that ophthalmology services are provided safely and appropriately across a variety of settings?

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Q19. Does Victoria have an adequate eye care workforce across metropolitan and rural settings?

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Q20. Is current training adequate to meet future demand for services in Victoria?

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Q21. What service configurations are required to support training requirements in order to meet future demand for health care professionals in the delivery of ophthalmology services in metropolitan and rural settings?

Q22. Can other health professionals be integrated into the delivery of ophthalmology services (ie. Optometrists are having a greater role in chronic disease management)? What enablers are required to implement these changes?

Q23. What is the role of the private health care sector in providing training opportunities?

Q24. Would prioritisation systems for ophthalmology surgery improve eye care services in Victoria?

Q25. Is there a volume-outcome relationship for components of ophthalmology practice? - Is there a minimum volume of some procedures that should be performed by a health service or practitioner to ensure optimal outcomes for patients?

Q26. What key performance and outcome measures for ophthalmology services should be collected and reported by hospitals? Who should they be reported to?

Q27. What mechanisms are required to be implemented to enable the collection and utilisation of these measures?

Q28. What is the role of the public and private hospitals in providing research opportunities? (ie. infrastructure, access to patients)?

Q29. What are the advantages and disadvantages of collocation of research institutions with specialty hospitals (RVEEH)?

Return this document to:

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