

# Eye Health Services for Aboriginal People

A Review within the Greater  
Western Region of NSW



Health

**NSW DEPARTMENT OF HEALTH**

73 Miller Street

NORTH SYDNEY NSW 2060

Tel. (02) 9391 9000

Fax. (02) 9391 9101

TTY. (02) 9391 9900

[www.health.nsw.gov.au](http://www.health.nsw.gov.au)

**Louise Maher and Anthony Brown**

**School of Rural Health, University of Sydney, November 2010**

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The Project Reference Group which monitored the review process consisted of:

- Ms Lou-Anne Blunden, Director Population Health, Planning and Performance, Greater Western AHS.
- Ms Linda Williams, Area Manager for Aboriginal Health, Greater Western AHS.
- Dr Therese Jones, Area Manager Population Health, Greater Western AHS
- Ms Sian Rudge, Acting Manager Evaluation, Monitoring and Reporting, Centre for Aboriginal Health, NSW Health
- Mr Rod Cook, Senior Policy Analyst, Centre for Aboriginal Health, NSW Health

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# Acronyms

AHS	Area Health Service
ACCCHS	Aboriginal Community Controlled Health Services
AHMRC	Aboriginal Health and Medical Research Council
AMD	Age Related Macular Degeneration
AMS	Aboriginal Medical Service
CSR	Cataract Surgery Rate
DR	Diabetic Retinopathy
GP	General Practitioner
ICEE	International Centre for Eyecare Education
LGA	Local Government Area
MSOAP	Medical Specialist Outreach Assistance Program
NIEHS	National Indigenous Eye Health Survey
POW	Prince of Wales Hospital, Sydney
OES	Outback Eye Service
QALY	Quality Adjusted Life Years
RANZCO	Royal Australian and New Zealand College of Ophthalmologists
REHC	Regional Eye Health Co-ordinator
SESIAHS	South Eastern Sydney Illawarra Area Health Service
VOS	Visiting Optometry Scheme
VMO	Visiting Medical Officer

# Executive summary

## Background

Eye problems are one of the most common health problems experienced by the Australian population, and Aboriginal people experience a higher burden of eye disease than the general population. The National Indigenous Eye Health Survey 2009 found blindness rates in Indigenous adults (1.9%) to be 6.2 times the mainstream rate and low vision rates in Indigenous adults (9.4%) to be 2.8 times the mainstream rate. The survey found the major causes of blindness in Indigenous Australians to be cataract (32%), optic atrophy (14%), refractive error (14%), diabetic eye disease (9%) and trachoma (9%). Although 94% of vision loss in Indigenous Australians is preventable or treatable, 35% of adults have never had an eye exam.

Eye health services in Australia are delivered at the primary level by primary health care providers such as general practitioners, community health nurse, and Aboriginal health workers, and involve promotion, screening, treatment of minor problems, and referral to eye health professionals as appropriate. Secondary eye health services are delivered by optometrists and ophthalmologists and include diagnosis and treatment of major eye problems, excluding major procedures requiring surgery. Tertiary eye health services are delivered by ophthalmologists and involve surgical interventions in the hospital setting.

This review was conducted in 2010 in the Greater Western Area Health Service (AHS) in NSW, which is now the Western NSW Local Health District and the Far West Local Health District. This area will be referred to as the Greater Western region throughout this report. The Greater Western region has a population of 301,999 people, of which 8.9% are Aboriginal (NSW average 2.3%). Eye health services in the Greater Western region are delivered by a number of key providers, including the Greater Western AHS, the Outback Eye Service (OES — an outreach service from Prince of Wales Hospital), Aboriginal Community Controlled Health Services (ACCHS), the International Centre for Eye Care Education (ICEE), the Royal Flying Doctor Service (RFDS) and private optometrists and ophthalmologists.

## Methods

The Objectives of the Review, as per the Terms of Reference were to:

1. Map existing eye health services/programs.
2. Collect and analyse data on existing eye health services
3. Estimate accessibility of eye health services to Aboriginal people.
4. Describe gaps in access to service.
5. Make recommendations for improving access to, and co-ordination of, services.

A mixed methods approach, combining qualitative and quantitative data, was used for this review, to capture regional service utilisation data as well as the perspectives and experiences of key stakeholders and service providers. The review used the following data collection strategies:

1. **Document Review:** Relevant published and grey literature was reviewed in relation to the epidemiology of eye health in Australia, national and state frameworks for eye health service issues, and information related to the key eye health service providers in the region.
2. **Data Review:** Each service provider was asked to provide information on the type and number of services provided, the number of people using those services, and the proportion of those who are Aboriginal. This information was collated to describe an overall picture of eye health services delivery and uptake in the GWAHS region. The data were examined for a relationship between the availability of services at a local level and the utilisation of tertiary eye care services by Aboriginal people across the region.
3. **Observational Visits:** Observational visits of the clinics implemented by key service providers were conducted in Bourke, Broken Hill, Cobar, Dubbo, Walgett, and Lightning Ridge.
4. **Stakeholder Consultation:** Key service providers and stakeholders in eye health services and the Greater Western AHS were interviewed.

## Key findings

### 1. Primary eye health care services

- Primary eye health care services are available to the Aboriginal people of Greater Western AHS through ACCHS, Health Service facilities, GPs, and RFDS.
- The degree to which eye health screening and referral occurs at the primary health care level was not comprehensively explored as part of this review.
- Retinal photography is not being used routinely to screen for diabetic retinopathy at the primary health care level.

### 2. Secondary eye health care services

- Outreach optometry services implemented by ACCHS with ICEE are delivered at present in 36 locations in the Greater Western region.
- Regional Eye Health Coordinator positions based in Wellington and Walgett are actively involved in coordinating outreach optometry services for Aboriginal people.
- The OES provides comprehensive ophthalmology services (optometry, eye health nursing, ophthalmology, and surgery) for Bourke, Brewarrina, Walgett, Lightning Ridge, and Cobar, as well as in Menindee and Wilcannia in conjunction with Maari Ma Health Aboriginal Corporation in Broken Hill (Maari Ma).
- Broken Hill Base Hospital delivers a regular public ophthalmology clinic, which delivers free ophthalmology secondary services. The clinic has a waiting list of over one year.
- Maari Ma delivers registrar only ophthalmology clinics in a number of locations in the Broken Hill region, and comprehensive clinics in Wilcannia and Menindee with the OES.
- Secondary eye health services are not consistently available to Aboriginal people in the Greater Western AHS Region. In particular, there is a lack of public ophthalmology clinics in areas with high numbers of Aboriginal people.
- There is a relationship between the availability of free public ophthalmology clinics and the rates of access to tertiary eye health services for Aboriginal people in the Greater Western AHS region.

### 3. Tertiary eye health care services

- Tertiary ophthalmology services are available in eight locations in Greater Western AHS
- Tertiary services are demand driven, and the supply of surgery by Greater Western AHS responds to

fluctuations in demand, to ensure all people access surgery within the 12 month waiting list benchmark.

- While tertiary services are available and affordable, they are underutilised by Aboriginal people in the region, which is related to the limited availability of accessible secondary services in some areas.

### 4. Co-ordination and collaboration

- There is no comprehensive service delivery plan for eye health services in the Greater Western AHS.
- The key service providers implement eye health services in the region from their organisational base.
- Some co-ordination between providers exists for collaborative service delivery, particularly between OES and Greater Western AHS, ACCHS and ICEE, and ACCHS and OES.
- There is no regional co-ordination of eye health services in the Greater Western region, or a structure which encourages comprehensive collaboration between all the service providers.

### 5. Cultural competence

- The ACCHS deliver primary eye health services and secondary eye health services in partnership with ICEE and OES, and this brings culturally competent eye health services to Aboriginal people in the Greater Western region.
- The Aboriginal health workforce of the Greater Western AHS are not routinely involved in eye health services at the primary level, or in liaising to support Aboriginal people access secondary and tertiary services as appropriate.
- The key service providers have made some achievements in improving the cultural competence of their services, particularly the Outback Eye Service, however this is not overtly the case at the private ophthalmology level.

### 6. Monitoring and evaluation

- Key eye health service providers monitor their services using different monitoring and evaluation tools, and varied reporting strategies.
- The data available cannot be combined to give an accurate picture of primary and secondary eye health services across the region, due to variations in data collated.
- There are no systems in place to monitor and evaluate eye health services delivery for primary or secondary level services across the region.
- Tertiary level data is available from Greater Western AHS, which is routinely monitored to ensure waiting list benchmarks for surgery are being met, but is not routinely analysed to ensure demand and supply is equitable.

## Recommendations

### 1. Enhance eye health screening, referral, co-ordination and promotion at the primary health care level.

- a. Deliver eye health promotion and education regarding prevention and management of eye disease to Aboriginal communities within the region.
- b. Encourage and develop strategies that enhance the inclusion of eye health screening and referral at the primary health care level
- c. Incorporate management of eye health into current chronic care management strategies where possible, particularly those for diabetes.
- d. Incorporate retinal photography screening for diabetic retinopathy into primary health care facilities

### 2. Improve and further develop secondary eye health services in the region.

- a. The ACCHS/ICEE continue to deliver outreach optometry services in current locations, and increase frequency and reliability of service where possible.
- b. Develop outreach optometry services for Aboriginal people in the Broken Hill region.
- c. The OES continues to deliver outreach ophthalmology services in the current locations, always seeking to increase accessibility for Aboriginal people to their services, and possibilities for expansion to new locations as explored.
- d. The REHC in Wellington and Walgett are continued to be supported in delivering outreach optometry services, and the positions in Bourke and Broken Hill are reviewed to ensure maximum efficiency and effectiveness.
- e. The service model and efficiency of the public ophthalmology clinic at Broken Hill Base Hospital is reviewed and strategies to improve the efficiency of the service (to decrease the waiting list) are implemented.
- f. Establish public ophthalmology clinics at Dubbo, Bathurst, Orange, and Parkes.
- g. Establish outreach secondary ophthalmology services in Coonamble, Condobolin, Cowra, Coonabarabran, and Mudgee.

### 3. Maintain availability of tertiary ophthalmology services in current locations, and plan for increased demand.

- a. Maintain the availability of tertiary eye health services in existing locations.
- b. Plan for an increased demand for tertiary eye health services should the availability of secondary eye health services be improved

### 4. Improve the co-ordination and collaboration of eye health services and eye care stakeholders in the region.

- a. Develop an eye health services strategic plan or service delivery plan for the Greater Western AHS.
- b. Establish eye health co-ordinator positions in Broken Hill and Dubbo.
- c. Establish an eye health service providers working group or partnership committee
- d. Develop partnership or working agreements between key service providers in the region.

### 5. Improve the cultural competence of eye health service delivery in the region.

- a. Engage Aboriginal staff in the delivery of eye health services where available.
- b. Provide case management to Aboriginal people to assist them in negotiating the eye health services pathway.
- c. Develop culturally appropriate environments for delivering services.
- d. Ensure all staff involved in eye health services delivery have participated in cultural competency training.
- e. Develop a strategy for engaging and informing Aboriginal communities about services available.
- f. Promote inter-sectoral collaboration.

### 6. Develop a system to monitor and evaluate eye health services in the region, at all levels.

- a. Develop a monitoring and evaluation system.
- b. Align a monitoring and evaluation system with a regional eye health services strategic plan.



## SECTION 1

# Introduction

Eye problems are one of the most common health problems experienced by the Australian population, with ten million Australians (more than half the population) reporting a long term eye problem.<sup>1</sup> It is estimated that over 50,000 people in Australia (0.2%) are blind, with a further 430,000 (2%) having low vision which impacts their ability to live independently. Refractive error, cataract, glaucoma, and macular degeneration are the most commonly reported conditions causing eye problems.<sup>1</sup>

The health costs of treating eye disease in Australia are large, estimated to be \$1.8 billion in 2004.<sup>2</sup> Eyecare has a range of proven, low risk, high success and cost effective interventions, including cataract surgery, regular retinal photographic screening for diabetic retinopathy, laser therapies and vitrectomy. Half of visual impairment is correctable, and one quarter is preventable, with prevention often being more cost effective than treatment.

Aboriginal people experience a higher burden of eye disease than the general population in Australia. The National Indigenous Eye Health Survey 2009<sup>3</sup> found blindness rates in Indigenous adults (1.9%) to be 6.2 times the mainstream rate and low vision rates in Indigenous adults (9.4%) to be 2.8 times the mainstream rate. The survey found the major causes of blindness in Indigenous Australians to be cataract (32%), optic atrophy (14%), refractive error (14%), diabetic eye disease (9%) and trachoma (9%). Although 94% of vision loss in Indigenous Australians is preventable or treatable, 35% of adults have never had an eye exam.

This review was conducted in 2010 in the Greater Western Area Health Service (AHS) in NSW. In 2011 this AHS became the Western NSW Local Health District and the Far West Local Health District. This region has a population of 301,999 people,<sup>4</sup> and geographically comprises an area of 444,586 square kilometres, which is 55% of the land mass of NSW.<sup>5</sup> 8.9% of the Greater Western region population (26,797 people) are Aboriginal, which is significantly higher than the NSW average of 2.3%.<sup>4</sup>

Eye health services in the Greater Western region are delivered by a number of key providers, including the Greater Western AHS, The Outback Eye Service (OES) — an outreach service from Prince of Wales Hospital (POW), Aboriginal Community Controlled Health Services (ACCHS) with the International Centre for Eyecare Education (ICEE), and private ophthalmologists and optometrists. While a number of eye health services are specifically designed for and delivered to Aboriginal people, the majority of eye health services in the region are mainstream services for all, including Aboriginal people.

The Close the Gap Indigenous Health Equality Summit Statement of Intent from 2008<sup>6</sup> demonstrates a commitment to ensure that health services for Aboriginal people are 'available, appropriate, accessible, affordable, and good quality', that access to mainstream services is improved for Aboriginal people, and that appropriate measuring, monitoring, and reporting occurs to ensure these objectives are achieved.

The objective for this project was to review eye health services for Aboriginal people in the Greater Western region of NSW. This review considered eye health services for Aboriginal people in the region in terms of availability, appropriateness, accessibility, affordability, and monitoring and evaluation. Recommendations for improving eye health services for Aboriginal people in the region are outlined.

In keeping with NSW Health Guidelines, 'Aboriginal people' is used to refer to all Indigenous people in NSW, in recognition that Aboriginal people are the original inhabitants of NSW. The term Indigenous is used when referencing national literature that incorporates both Aboriginal and Torres Strait Islander people.

## SECTION 2

# Objectives

The Objectives of the Review, as per the Terms of Reference are to:

1. Map existing eye health services/programs for Aboriginal people in the region
2. Collect and analyse data on existing eye health services
3. Estimate accessibility of eye health services to Aboriginal people
4. Describe gaps in access to service
5. Make recommendations for improving access to, and co-ordination of, services

More specific details for each objective as per the Terms of Reference can be viewed in the Terms of Reference Document in Appendix 1.

# Methods

A mixed methods approach, combining qualitative and quantitative data, was used for this review, to capture regional service utilisation data as well as the perspectives and experiences of key stakeholders and service providers. The review used the following data collection strategies:

## 1. Document Review

Relevant published and grey literature was reviewed in the following areas:

- Epidemiology of eye health in Australia, particularly for Aboriginal people
- Federal and state frameworks and reports for eye health service issues
- Reports, reviews, publications, and evaluations for the key eye health service providers in the Greater Western region

## 2. Data Review

Relevant data sets of service implementation data were collated where available:

- Greater Western AHS ophthalmology inpatient service data: the demographic, service utilisation and trends analysis of Greater Western AHS residents who access public ophthalmology services was prepared by Greater Western AHS using Flow Info Version 10. This is NSW Health Department supplied software which provides comparative demographic and service utilisation data from 2000, extracted from the admitted patient data set in the NSW Health Information Exchange (HIE).
- Service provision data of other service providers: all service providers were invited to provide data on eye health services delivered in the Greater Western region, including if possible demographic information on clients accessing services, quantity of services delivered, and outcome data. Data were provided by OES, ICEE, Maari Ma, and the RFDS.
- The number of cataract operations received by residents of western NSW for the period July 2007 - June 2010 were identified from the NSW Health Admitted Patient Data Collection. The International Classification of Diseases procedure code blocks 195-200 were used to identify a cataract procedure. Cataract surgery data was

disaggregated for Aboriginal and non-Aboriginal people.

## 3. Observational Visits

Observational visits to the clinics implemented by key service providers were conducted in Bourke, Broken Hill, Cobar, Dubbo, Walgett, and Lightning Ridge. The regional visits allowed in-depth analysis on the current implementation in selected regions, observation of service delivery in practice, and facilitated face-to-face survey/interviewing with key stakeholders.

## 4. Stakeholder Consultation

Stakeholder consultation was comprehensive with representatives from the following groups interviewed:

- Greater Western AHS
- Local health service staff including managers, clinical staff, and admin staff
- Outback Eye Service (OES)
- International Centre for Eyecare Education (ICEE)
- Aboriginal Community Controlled Health Services (ACCHS)
- Royal Flying Doctor Service (RFDS)
- Private ophthalmologists and optometrists working in Greater Western region.

A full list of stakeholders consulted is provided in Appendix 2. Interviews were semi-structured, and written notes taken during the interviews were later collated and sorted under relevant subject headings.

An Aboriginal Health Impact Statement was completed, and the signed declaration included in Appendix 3.

## Context setting

### 4.1 The Greater Western Region of NSW

The population of the Greater Western region is 301,999 people, 4.2% of the NSW population. This population is spread across a large geographical area of 444,586 square kilometres, an area representing 55% of the landmass of NSW. There are 28 local governments in the area, and nine of these are classified as remote or very remote.

The region's population is expected to grow by only 0.3% between 2006 and 2026 but significant shifts in the age profile and population distribution are expected. There will be an 85% increase in the number of people aged over 65 years between 2006 and 2026 and an 18% decline in the 0-44 age groups across the region. Population ageing will increase demand for health services overall, especially for chronic, complex and aged care services, including eye health services.

Life expectancy at age 65 years for men and women in Greater Western region from 1999–2003 was 81.4 years and 85.3 years respectively. This is lower than any other health area in NSW, with the life expectancy of both sexes being approximately one year less than the State average.

Men and women living in the Greater Western region have the highest age-adjusted death rates in NSW. The main reasons for premature death are neoplasms (tumours) (35%), diseases of the circulatory system (28%), injury and poisoning (11.3%) and diseases of the respiratory system (8.7%).

#### Aboriginal people in the Greater Western Region

Aboriginal people represent 8.9 per cent of the Greater Western region population compared to 2.3 per cent for the whole of NSW. In NSW approximately 20% of the total Aboriginal population live within Greater Western region. Aboriginal people are 3.6 per cent of the population in Bathurst, 6.4 per cent in Cowra, 10.9 per cent in Dubbo, 32.9 per cent in Bourke and 66.8 in Brewarrina. However, the largest numbers of Aboriginal people are in Dubbo. Approximately 54 per cent of the Aboriginal population in Greater Western region are 24 or younger.

Table 1 compares the distribution of the Greater Western region population by age group for Aboriginal and non-Aboriginal populations. Table 2 shows the Aboriginal population within the Greater Western region by Local Government Area.

Table 1: Aboriginal and non-Aboriginal population in Greater Western Region by age<sup>7</sup>

Age group	Aboriginal			Non-Aboriginal		
	Males	Females	Persons	Males	Females	Persons
0-4 years	1284	1296	2580	8464	9040	17504
5-14 years	3100	3339	6439	16906	18173	35079
15-24 years	2690	2752	5442	15397	16778	32176
25-44 years	3459	3329	6787	32560	32966	65525
45-64 years	2266	2128	4394	37697	38968	76665
65 years and over	641	514	1155	25812	22438	48250
<b>Total Persons</b>	<b>13,440</b>	<b>13,357</b>	<b>26,797</b>	<b>13,6835</b>	<b>13,8363</b>	<b>275,199</b>

Table 2: Aboriginal Population in Greater Western region by LGA (2006)<sup>4</sup>

LGA of Residence	Aboriginal Residents	Total Population	Proportion of population who are Aboriginal
Balranald	197	2,530	7.8
Bathurst Regional	1,418	39,122	3.6
Blayney	174	7,003	2.5
Bogan	366	2,816	13
Bourke	1,018	3,095	32.9
Brewarrina	1,287	1,926	66.8
Broken Hill	1,288	19,018	6.8
Cabonne	309	13,046	2.4
Central Darling	784	1,868	42
Cobar	565	4,934	11.5
Coonamble	1,144	4,095	27.9
Cowra	836	13,123	6.4
Dubbo	4,492	41,187	10.9
Forbes	705	9,465	7.4
Gilgandra	636	4,559	13.9
Lachlan	1,137	6,748	16.8
Mid-Western Regional	653	22,280	2.9
Narromine	1,173	6,720	17.5
Oberon	131	5,389	2.4
Orange	1,739	38,288	4.5
Parkes	1,130	14,836	7.6
Walgett	2,164	7,010	30.9
Warren	371	2,665	13.9
Warrumbungle	833	9,868	8.4
Weddin	73	3,670	2
Wellington	1,422	8,626	16.5
Wentworth	722	7,072	10.2
Unincorporated NSW	30	1,040	2.9
<b>Total Greater Western Region</b>	<b>26797</b>	<b>301999</b>	<b>8.9</b>
<b>NSW Total</b>	<b>165916</b>	<b>7207653</b>	<b>2.3</b>

Aboriginal people in NSW have poorer health status than the rest of the population, demonstrated by the following health inequalities:<sup>8</sup>

- Aboriginal people have a lower life expectancy
- Chronic disease risk factors are higher in Aboriginal people
- Aboriginal people are twice as likely as non-Aboriginal people to die as a result of diabetes or injuries
- There is a higher prevalence and earlier onset of chronic illnesses in Aboriginal people, in particular respiratory illness, diabetes and renal disease
- Hospitalisation rates for Aboriginal people in NSW (compared to non-Aboriginal people) are:
  - 210% higher for diabetes
  - 40% higher for cardiovascular disease
  - 230% higher for chronic respiratory diseases
  - 50% higher for injury and poisoning
- Aboriginal adults have double the reported smoking rates across all age groups, while reported rates of risk drinking are around 1.4 times the general population rates
- Aboriginal adults experience 10 times the level of blindness from preventable eye disease and attend eye care practitioners in lower number

## 4.2 Eye Health and Services in Australia

### 4.2.1 An Overview of Eye Health Problems in Australia

Eye health problems are commonly experienced by Australian people. It is estimated that 575,000 (5.8%) Australians over 40 years of age have vision loss, and of these 66,500 people are blind.<sup>9</sup> Refractive error, cataract, macular degeneration, glaucoma, and diabetic retinopathy are the most common causes of loss of vision in Australia. Low vision is associated with higher mortality because it is correlated with a higher risk of falls, motor vehicle accidents and depression.<sup>2</sup>

Aboriginal people experience a higher burden of eye disease than the general population in Australia. The National Indigenous Eye Health Survey 2009<sup>3</sup> found the national blindness rate in Indigenous adults to be 1.9%, which is 6.2 times the mainstream rate, and the low vision rate to be 9.4% which is 2.8 times the mainstream rate. The major causes of blindness in Indigenous Australians are cataract (32%), optic atrophy (14%), refractive error (14%), diabetic eye disease (9%) and trachoma (9%). Figure 1 shows the main causes of vision loss in Indigenous adults,

and Figure 2 shows the main causes of blindness in Indigenous adults. While 94% of vision loss in Indigenous Australians is preventable or treatable, 35% of Indigenous adults have never had an eye examination.

The health costs of treating eye disease in Australia are large, estimated to be \$2.98 billion in 2009.<sup>9</sup> Eyecare has a range of proven, low risk, high success and cost effective interventions, including cataract surgery, retinal photographic screening, laser therapies and vitrectomy.<sup>2</sup> Half of visual impairment is correctable, and one quarter is preventable, with prevention more cost effective than treatment.<sup>9</sup>

Visual impairment can be defined as a limitation of one or more functions of the eye or visual system, and most commonly includes impairment of visual acuity, visual fields, and colour vision.<sup>9</sup> Normal vision is recorded as 6/6 (able to see at 6 metres what a person with normal vision can see at 6 metres), legal blindness is recorded as less than 6/60 in the better eye with glasses or contact lenses correction (unable to see at 6m what a person with normal vision can see at 60 metres), and visual impairment is recorded as less than driving vision 6/12 (unable to see at 6 metres what a person with normal vision can see at 12 metres).<sup>9</sup>

Figure 1: Causes of vision impairment in Indigenous Australians (Source: National Indigenous Eye Health Survey, 2009)<sup>3</sup>

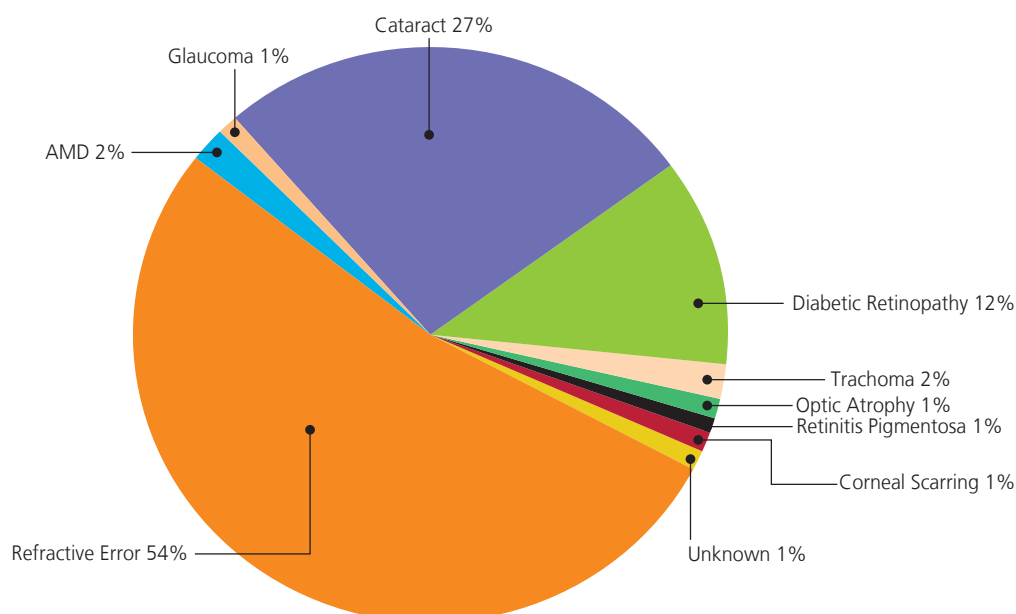
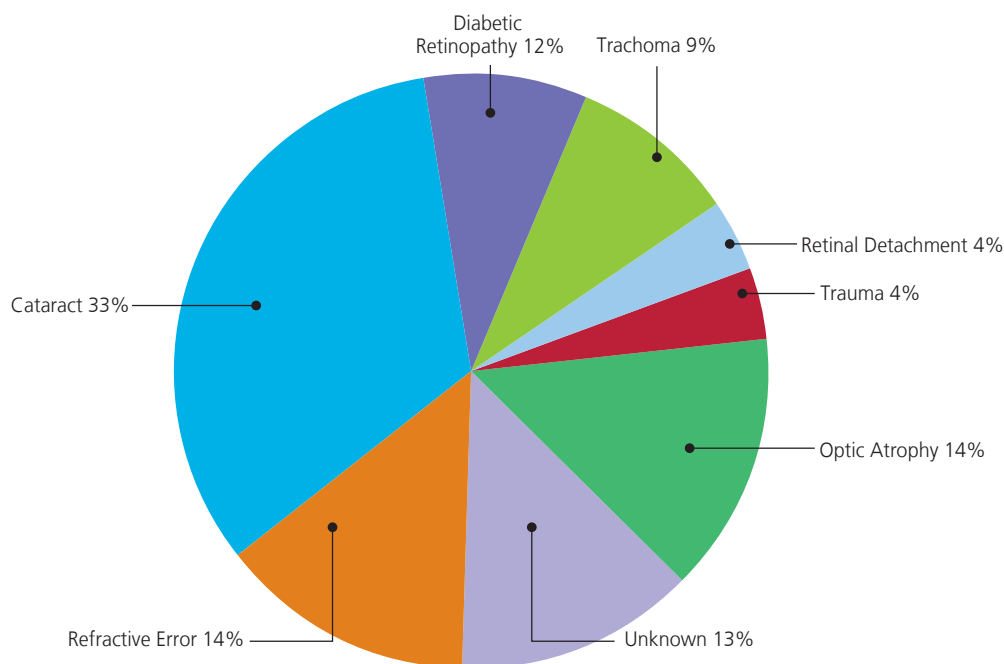


Figure 2: Causes of blindness in Indigenous Australians (Source: National Indigenous Eye Health Survey, 2009)<sup>3</sup>



The following summarises the five main causes of vision impairment in Australia, and also considers trachoma, a cause of visual impairment experienced predominantly by Aboriginal people.

### Cataract

A cataract is a clouding in the lens of the eye, which is normally clear. The most common symptoms of cataract are blurred vision, sensitivity to light and glare, faded colours, and double vision. Age, smoking, diabetes, use of corticosteroids, and ultraviolet exposure increase the risk of cataract. Detection is through a visual acuity test and examination by an eyecare professional after pupil dilation.<sup>9</sup>

**Prevalence:** Prevalence rates for vision loss and blindness due to cataract are 0.1% in the 60–69 year age group and 15% in the population aged over 90.<sup>9</sup> In 2009, 84,960 people had vision loss from cataract, of whom 7,700 were blind. In 2004, 9% of Australians aged over 55 years had had cataract surgery.<sup>10</sup> In Indigenous Australian adults, blinding cataract is 12 times more common than in the general population.<sup>3</sup> Cataract causes 32% of blindness and 27% of low vision in Indigenous adults (aged over 40 years), with only 65% of those with vision loss from cataract having received surgery.

**Interventions:** In the early stages of cataract, visual aids can improve vision. Once the condition is serious a surgical procedure becomes necessary to restore vision, in which

the cloudy lens is removed and replaced with a substitute lens.<sup>8</sup> The surgery is safe and effective, with almost all people having better vision and improved quality of life afterwards. Cataract surgery is a cost effective surgery, at less than \$3000 per Quality Adjusted Life Year (QALY).<sup>9</sup> Taylor<sup>11</sup> predicts the need for cataract surgery will double over the next twenty years, although addressing smoking and high risk behaviour would halve the need for cataract surgery. Strategic interventions to reduce visual impairment from cataract<sup>9</sup> include:

- Promote protective behaviour: stop smoking and reduce ocular UV exposure
- Detect those with unoperated cataract with simple aged-care vision tests
- Improve efficiency and capacity of cataract surgery services
- Have all Australians test their vision on a regular basis (every 4–5 years).

The National Indigenous Eye Health Survey<sup>12</sup> recommendations for further action to improve cataracts in Indigenous Australians include ensuring that cataract surgery is readily available for all Australians, providing adequate and sustainable funding for visiting specialist services, ensuring proper funding for patient travel to regional hospitals for surgery, and committing adequate resources for cataract surgery.

## Diabetic Retinopathy

Diabetic Retinopathy is a significant cause of visual impairment, and a common diabetes complication which affects the small blood vessels of the retina. Diabetic retinopathy often has no early symptoms, but regular eye examination is required, as the earlier treatment commences the more likely it is to be effective. Diabetic retinopathy can result in vision loss through proliferative retinopathy, where blocked blood vessels to the retina result in the development of new fragile blood vessels that leak blood into the centre of the eye, and through macular oedema where fluid leaks into the macula causing swelling. Everyone with diabetes is at risk of developing diabetic retinopathy, and those with diabetes for many years, poorly controlled diabetes, kidney damage, high blood pressure or high cholesterol are at most risk.<sup>13</sup> Detection of diabetic retinopathy is through a visual acuity test and retinal examination, or through a retinal photograph.

**Prevalence:** The prevalence of diabetic retinopathy is dependent on the prevalence of diabetes mellitus. There are over 500,000 Australians over 40 with diabetes mellitus, and an additional 400,000 undiagnosed. Between 25% and 44% of people with diabetes have diabetic retinopathy.<sup>9</sup> Only half the Australians with diabetes have a regular eye examination, and one third have never been checked.<sup>9</sup> It is estimated that 2.8% of Australians over 55 have diabetic retinopathy, which is 16.6% of people with diabetes.<sup>9</sup>

In the National Indigenous Eye Health Survey<sup>3</sup> 37.4% of Indigenous adults over 40 years reported diabetes, of which only 20% had had an eye exam within the last year. Diabetes was the cause of 13% of low vision and 9% of blindness in Indigenous Australians. Only 37% of those with diabetic retinopathy requiring laser treatment had received some treatment.

**Interventions:** People with diabetes can prevent the early onset of diabetic retinopathy by controlling blood sugar levels, blood pressure, and blood cholesterol. Regular eye health screening for people with diabetes can ensure early detection and intervention, which will prevent vision loss and blindness.<sup>14</sup> Regular retinal photographic screening at the primary health care level is one systematic way that more regular diabetic retinopathy screening for people at risk can be achieved, and it has been successfully used in Indigenous primary health care settings in both remote and urban settings.<sup>15</sup>

Treatment of macular oedema is with focal laser surgery, which stabilises vision, and reduces the risk of vision loss by 50%. Proliferative retinopathy is treated with scatter laser surgery, which can save vision. If bleeding is severe and persistent, a vitrectomy may be necessary, where blood and gel are removed from the centre of the eye and replaced with a salt solution. Laser treatment and vitrectomy are both very effective in reducing vision loss, reducing the risk of blindness by 98%. Laser therapies generally cost under US\$20,000 per QALY, vitrectomy at US\$2000/QALY, and regular retinal photographic screening for diabetic retinopathy costs only US \$15000/QALY.<sup>9</sup>

Suggested strategic interventions to improve vision problems caused by diabetic retinopathy<sup>13</sup> include:

- Promote awareness amongst those with diabetes of the need for regular eye examinations
- Involve all members of the diabetes management team in promoting eye examinations every two years
- Develop, evaluate, and report sustainable local and regional models of screening.

The National Indigenous Eye Health Survey<sup>12</sup> recommendations for further action to address diabetic retinopathy in Indigenous Australians include ensuring that all Indigenous people with diabetes have an annual eye exam and access to better education, ensuring the annual eye exam includes visual acuity and retinal examinations, using retinal photography as a screening tool for diabetic retinopathy, arranging prompt referral for those with diabetic eye disease, and making laser surgery available regionally.

## Refractive Error

Refractive error occurs when the image viewed is not focussed properly onto the retina. Refractive error includes myopia, hyperopia, astigmatism, and presbyopia. Symptoms include blurred vision, eye strain, tiredness, headaches, and reduced concentration. Refractive error is diagnosed through a visual acuity test, and managed through glasses, contact lenses, or laser refractive surgery. Suggested strategic interventions to improve vision problems caused by refractive error include having all Australians have an eye examination on a regular basis, having all elderly Australians vision-tested as part of aged care assessments, establishing appropriate referral pathways for those with impaired vision, and improving access to spectacle programs.



**Prevalence:** Uncorrected refractive error occurs when a person with refractive error does not have glasses, or their glasses are not appropriate. The prevalence of vision loss due to uncorrected refractive error is 4% in the 60–69 years age group, 8% in the 70–79 age group, and 13% in the 80–89 age group. In 2009 uncorrected refracted error caused vision loss in 341,200 Australians and blindness in 2200 Australians. Uncorrected refractive error causes 54% of the low vision and 14% of the blindness experienced by Indigenous adults in Australia.<sup>3</sup> 20% of Indigenous adults wore glasses for distance vision, compared to 56% in the mainstream.

The National Indigenous Eye Health Survey<sup>12</sup> recommendations for improving the correction of refractive errors in Indigenous Australians include ensuring that ready-made and prescription glasses are readily available, and providing easy access to appropriate eye examination services for Indigenous Australians.

## Age Related Macular Degeneration

Age related macular degeneration (AMD) is a progressive eye disease affecting the central part of the retina, the macula. If the disease progresses, irreversible loss of central vision occurs. The risk factors for AMD are increasing age and family history, and lifestyle risk factors of smoking, alcohol consumption and obesity.<sup>16</sup>

**Prevalence:** The prevalence rates for vision loss and blindness from AMD are 0.9% and 0.3% in the 70–79 years group respectively, and 4.6% and 2.4% in the 80–89 years group.<sup>12</sup> Approximately 60,350 Australians have vision loss from AMD, and of these 33,000 are blind.

**Interventions:** There is currently no effective treatment for AMD, so prevention is the only approach. Control of the modifiable risk factors of smoking, alcohol consumption and obesity can reduce the risk of developing AMD by half, and delay progression of the disease.<sup>17</sup> A medical therapy, Ranibizumab can slow the progression of neovascular AMD. It requires a bi-monthly injection by an ophthalmologist.<sup>8</sup>

## Glaucoma

Glaucoma is damage to the optic nerve due to an increase in intraocular pressure related to a failure in the drainage system of the eye.<sup>10</sup> Glaucoma causes vision loss or blindness. Symptoms include tunnel vision, headache, blurred vision, and light sensitivity. Risk factors include advancing age, a family history, and glaucoma, as well as hypertension and cardiovascular disease. Glaucoma is identified through an

eye examination including visual acuity, visual field, tonometry (pressure) and optic nerve examination.

**Prevalence:** Glaucoma related vision loss is age related, with a prevalence of 0.1% of people in the 60–69 years age bracket, 0.5% for those aged 70–79 years, and 1.5% for those aged 80–89 years.<sup>9</sup>

**Interventions:** There is no cure for glaucoma, however early diagnosis and treatment are important to control it and protect sight, with treatments including medication, laser surgery, and conventional surgery. Glaucoma treatments can save remaining vision, but cannot improve sight. Strategic interventions to reduce visual impairment from glaucoma include promoting community awareness about glaucoma, and promoting regular eye examinations for those with a family history of glaucoma and those aged over 50.

## Trachoma

Trachoma is an infective conjunctivitis caused by ocular infection with the bacterium *Chlamydia trachomatis*.<sup>18</sup> Repeated or persistent infection causes scarring to the upper conjunctiva, which alters the architecture of the eyelid, causing the eyelashes to rub on the eye (trichiasis), which results in corneal scarring and loss of vision. The disease is closely associated with poverty, poor environmental health, and poor personal hygiene. Trachoma is managed through the SAFE strategy- surgery for trichiasis, antibiotics for active infection, facial cleanliness, and environmental health improvements.

**Prevalence:** Trachoma only exists in remote Aboriginal communities in Australia. The National Indigenous Eye Survey found trachoma infection in 3.8% of children, and trachoma scarring in 15.7% of adults.<sup>19</sup>

The National Indigenous Eye Health Survey<sup>12</sup> recommendations for further action to improve trachoma in Indigenous Australians include clearly mapping the extent of trachoma, applying the SAFE strategy in Aboriginal communities, regularly checking all children at risk and ensuring follow-up treatment, and ensuring elderly people are checked for trichiasis as part of the healthy adult check and referred as required.

## 4.2.2 The Delivery of Eye Health Programs and Services in Australia

Australia has well-developed eyecare systems, with the responsibility for programs and services spread across government, private sector health care professionals, and non-government organisations. A number of programs and schemes specifically focus on improving eyecare services for Aboriginal people.

The *National Framework for Action to Promote Eye Health and Prevent Avoidable Blindness and Vision Loss*<sup>20</sup> has an overall goal to promote eye health and reduce the incidence of avoidable blindness and vision loss in Australia, and identifies five key areas for action:

1. Reducing the risk of eye disease and injury
2. Increasing early detection of eye disease
3. Improving access to eye health care workers
4. Improving the systems and quality of care for eye health services
5. Improving the underlying evidence base in eye health care

### Workforce

The specialist eye health care workforce includes ophthalmologists, optometrists, orthoptists, ophthalmic nurses, and optical dispensers.<sup>13</sup> Traditionally there is a close working relationship between ophthalmologists, orthoptists, and ophthalmic nurses, while optometrists tend to work more independently in primary care settings. Ophthalmologists are able to perform surgery, glasses can be prescribed by ophthalmologists, optometrists and orthoptists, while ophthalmologists, general practitioners and some optometrists can prescribe medications.

- Ophthalmologists are medical practitioners specialised in eye health and vision, who practise both medicine and surgery. They are the only profession able to provide eye surgery, and able to prescribe all eyecare medication.
- Optometrists examine the eye and visual system, diagnose refractive disorders and the presence of ocular disease, and prescribe and dispense corrective and preventative devices. Optometrists refer to a GP or an ophthalmologist when they identify visual conditions which may require treatment.
- Ophthalmic nurses care for patients with disorders and diseases relating to the eye, and work closely with ophthalmologists.
- Orthoptists are allied health professionals who specialise in the diagnosis and management of disorders of eye movements and associated vision problems

- Optical dispensers make spectacles as prescribed by optometrists and ophthalmologists.

General practitioners play an important role in eye health care, in early identification and appropriate referral of eye problems, in the removal of foreign bodies from the eye, and through providing co-ordinated care for patients whose conditions affect eye health, particularly diabetes. The general primary health care workforce is also involved in eyecare, particularly in referring to specialist eyecare services as appropriate. This includes nurses, Aboriginal Health Workers, ambulance workers, pharmacists, and other allied health professionals.

### Referral Pathways

GPs, optometrists and ophthalmologists do not require a referral for a consultation, however Medicare benefits are only payable for an ophthalmologist consultation with an appropriate referral. GPs, optometrists, and other specialists can refer to ophthalmologists, and all health professionals can refer to GP or optometrist. The eye health care pathway can be difficult to navigate for some patients, and co-ordinated services, liaison and support from the primary and secondary level can assist patients, particularly Aboriginal people, to ensure they access all services and negotiate their way through the pathway as required.

### Levels and Co-ordination of Eyecare Services

Eyecare services occur at three levels, as described in the *Provision of Indigenous Eye Health Services Report*:<sup>19</sup>

#### Primary Eyecare

Primary eyecare services are provided by community clinics, which may include community health centres, ACCHS, and GPs. Staffing includes GPs, nurses, and Aboriginal health workers. Eyecare at this level includes:

- Screening for eye health and vision
- Diagnosis and treatment of conjunctivitis, corneal foreign bodies, minor ocular trauma
- Diagnosis and referral of complex cases, and referral of patients with diabetes
- Eye health promotion
- Follow-up, post-operative management, and ongoing treatment

## Secondary Eyecare (Eye Clinic/Visiting Eye Team)

Secondary eye care is provided at an eye clinic or through a visiting eye team, and staff may include optometrists, ophthalmologists, and support staff. Eyecare at this level includes:

- Diagnosis and treatment of uncorrected refractive error
- Diagnosis and surgical referral for cataracts
- Diagnosis and referral or treatment of diabetic retinopathy
- Referral for more complex cases requiring investigation

## Tertiary Eyecare (Regional Hospital):

Tertiary eye care is provided at a regional hospital, and staff include ophthalmologists, theatre and clinic staff. Eyecare at this level includes:

- Delivery of cataract surgery, laser treatment and other eye surgery

## Co-ordination

Provision of comprehensive eye health care services requires significant levels of co-ordination and organisation within and across the various levels. Aspects of co-ordination required at each level include:<sup>21</sup>

- Community level: community liaison is required to provide a link between individual community members, their families, the clinic, and the services. This includes identification, transport, interpretation, and moral support.
- Primary Eyecare level: this requires staff in the clinic to be skilled in primary eyecare, appropriate referral pathways to eye clinics to be in place, and scheduling of visits for visiting eye teams.
- Secondary eyecare level: this requires co-ordination of the visit with the clinic and the community, communication and co-ordination between visiting optometrists and ophthalmologists, the development of waiting lists, ensuring appropriate equipment is available, assistance with community liaison, clerical support, and appropriate referral systems for further management and surgery.
- Tertiary Level: this requires organisation of the clinic space, theatre staff, admin support, surgical supplies and equipment, travel arrangements for the visiting team, and community liaison.

- Regional or State Level: this requires oversight of co-ordination provided at the different levels, including recruitment, training and support, and oversight of the distribution of the visiting eye teams, including the ratio of optometric and ophthalmic visits and frequency of visits.

## Costs to Patients

The Medicare Benefits Schedule provides for a comprehensive optometric consultation every two years, and review by general practitioners and ophthalmologists as required (the scheme may partially or fully fund these reviews, depending on the provider's fees). All states and territories have subsidised spectacle schemes for eligible people. In-patient surgery, medication and other services are free of charge to people treated in public hospitals in NSW. Eligible clients are therefore eligible for free eyecare services across all levels of the eyecare pathway, if these services are available.

## Specific Eye Health Programs and Initiatives

The National Aboriginal and Torres Strait Islander Eye Health Program began in 1998 through the Office of Aboriginal and Torres Strait Islander Health (OATSIH). The program aims were to address eye health problems experienced by Aboriginal and Torres Strait Islander people through regional eye health services co-ordination, access to specialised equipment, and training assistance.<sup>22</sup> The program aimed to improve access to specialist eye services, both optometry and ophthalmology. Specialised eye health clinics were established in ACCHS, including seven in NSW.

Through this program came the establishment of the Regional Eye Health Co-ordinator (REHC) positions within ACCHS. The responsibility of the REHC is to ensure access to eye services and to work towards embedding eye health into primary care practice. The stated role includes eye health awareness and education, co-ordination of eye health care providers, eye health screening, referrals to specialists, and eye health research.<sup>23</sup> There are 27 REHC positions in Australia, seven of which are based in NSW.

Each state and territory in Australia has a spectacle provision scheme. In NSW, the NSW Government Spectacle Program<sup>24</sup> provides assistance to eligible people with access to free glasses, contact lenses and low vision aids. Eligibility is means tested. The program is administered by VisionCare NSW. There are 650 participating providers' practices throughout NSW, 50 of whom specifically service more than 80 rural and remote Aboriginal communities.<sup>25</sup>

## Rural and Remote Workforce Schemes

A number of schemes have been developed to ensure attract the specialist eye health care workforce to rural and remote areas. The Medical Specialist Outreach Assistance Program (MSOAP) forms part of the Australian Government's Rural Health Strategy, aiming to improve the access of rural and remote communities to medical specialist outreach services, by providing funds that reduce the financial disincentive incurred by medical specialists in providing outreach services.<sup>26</sup> Ophthalmologists are one of the specialist medical groups that can be supported under the scheme.

The Visiting Optometrist Scheme (VOS) helps to improve the access to optometry services for people in remote communities, whereby optometrists providing outreach services can access funding support for travel, accommodation, meals, equipment, and costs related to being absent from their practice.<sup>27</sup>

## Outreach Eye Services

Specialist outreach clinics in primary care and rural hospital settings in general improve access to care, quality of care, health outcomes, patient satisfaction, and the use of hospital services, especially when delivered as part of a multi-faceted intervention.<sup>28</sup>

Eye healthcare has a number of key players who can be involved in outreach services. Primary healthcare may be provided by both GPs and optometrists, and secondary eyecare can be provided by optometrists or ophthalmologists (but optometrists cannot provide all levels of secondary eyecare services).

Service models for outreach eye health services in Australia vary significantly. Service outcomes and costs per attendance vary significantly depending on the funding model, co-ordination between eyecare professions, proportion of Indigenous patients, and continuity of leadership provided by different consultants.<sup>29</sup> Better services see more patients, perform more surgery, and have shorter waiting times for both clinical consultations and surgery.<sup>29</sup> The main drivers of good services are a funding model that provides appropriate incentives, and effective co-ordination of services. Service integration (especially good communication between optometrists and ophthalmologists) is associated with reduced waiting times, and has little bearing on overall cost.<sup>29</sup> Conducting surgery in regional hospitals in outreach locations is generally regarded as an important part of an outreach eye service, and attempts to

address the lower cataract surgery rates observed in rural and remote Australian locations.<sup>29</sup>

Significant barriers to delivery of outreach eye health services include cross cultural factors, poor patient understanding regarding preventative eyecare, high non attendance rates, and unpredictable fluxes of patient populations relating to community events or weather.<sup>29</sup>

## Access to eye health services by Aboriginal people

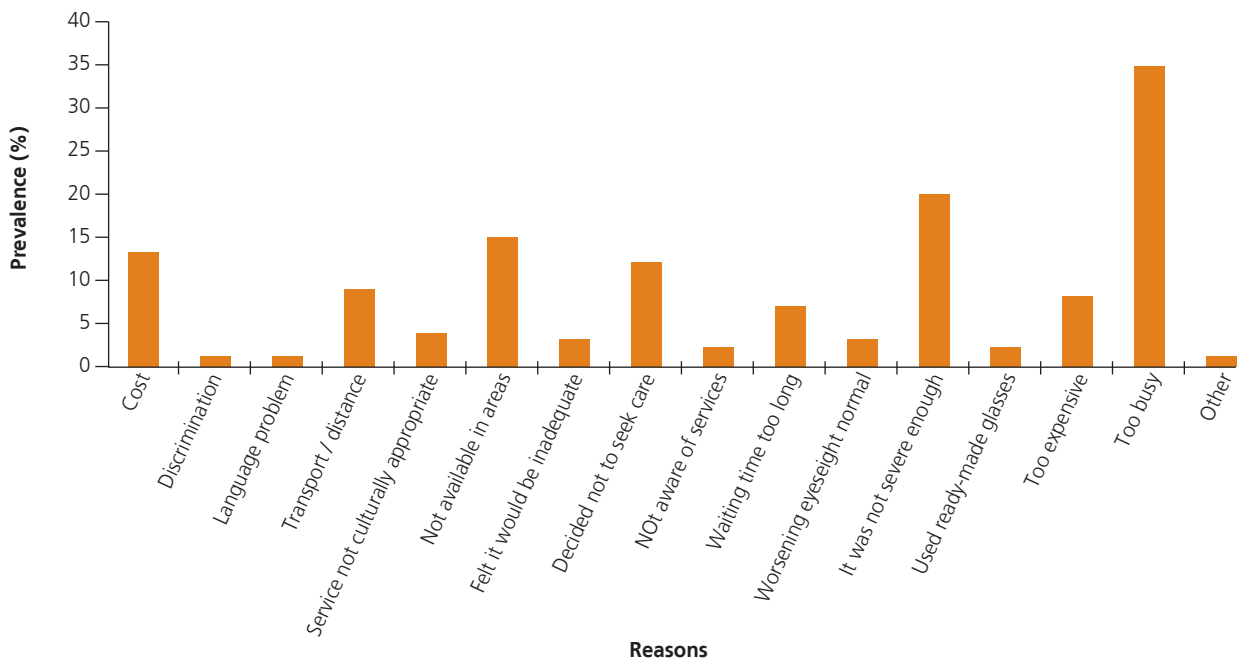
In Australia, eyecare services in general are less available in areas with more Indigenous people, with the supply of optometrists and ophthalmologists decreasing as the proportion of Indigenous people living in a community increased.<sup>30</sup> This is partially explained by remoteness and overall socioeconomic disadvantage. In general, the rates of eye exams by ophthalmologists, optometrists, and in total are significantly lower in areas with more indigenous people, as are the rates of cataract surgery.

Even in areas with sufficient availability of services, Aboriginal people are not always using the services that are available. The National Indigenous Eye Health Survey<sup>30</sup> identified some of the barriers reported that limit access to care when there was an eye problem, and these are shown in Figure 2. The main reasons stated are related to cost, availability and accessibility of services, perceptions around the severity of problems, and people having other priorities.

Services need to be available, affordable, and accessible for Aboriginal people, but also need to be appropriate. Appropriateness of service can be related to cultural competence, and culturally competent services are likely to have more uptake and access by Aboriginal people, and better impact on health. Reported barriers to uptake of services by Aboriginal people (Figure 3) include issues such as discrimination, language, and service not being culturally appropriate. A culturally competent health care system is one that 'acknowledges and incorporates the importance of culture, assessment of cross cultural relations, vigilance towards the dynamics that result from cultural differences, expansion of cultural knowledge, and adaptation of services to meet culturally unique needs'. Interventions to improve cultural competence can occur at the organisational, structural, and individual provider level, and have been shown to improve Indigenous patients' access to mainstream services at the primary health care level.<sup>31</sup>

Limited awareness of eye health problems and available treatments, a willingness to accept the problem, and competing priorities, are other reasons stated by Aboriginal people with eye health problems for not seeking care (Figure 3). Taylor et al (2010)<sup>30</sup> suggests that as well as improving availability and access to eye health services, community education around the importance of eye health and the effectiveness of treatment may improve health care seeking behaviour among Aboriginal people.

Figure 2: Reasons given by Aboriginal people for not seeking eye health care services when there was a problem (Source: National Indigenous Eye Health Survey 2009)<sup>30</sup>



# Findings

## 5.1 Key Service Providers in the Greater Western Region

### 5.1.1 Greater Western AHS

#### Eye Health Services

The (former) Greater Western AHS delivers eye care services at the primary, secondary, and tertiary level.

**Primary Services:** All primary health care facilities and community health care centres operated by Greater Western AHS have a role to play as primary health care providers in the eye health care system, in promotion, screening, and referral. Diabetes and chronic care programs have developed specific links with local secondary eye health care services. Greater Western AHS also co-ordinates the State-wide Eyesight Preschooler Screening Program (StEPS) in the region, an initiative of NSW Health to ensure all 4 year old children receive vision screening. Vision screening occurs through child care centres, community health centres, and preschools, and if problems are identified children are referred to eye health professionals.

**Secondary Services:** The Health Services within Greater Western AHS generally do not deliver specialist outpatient eye clinics at the secondary eye health care level, with two exceptions:

- a. Broken Hill Health Service implements an outpatient eye clinic in partnership with visiting ophthalmologists and POW hospital which places an ophthalmology registrar in Broken Hill on rotation. The clinic is run 3 days per week, three weeks per month, and is staffed by an ophthalmologist, ophthalmology registrar, and an allocated hospital nurse.
- b. The Health Services in Bourke, Brewarrina, Walgett, and Lightning Ridge support and co-ordinate with the OES in delivering eye health clinics at the Health Services (see 4.3.2).

**Tertiary Services:** Greater Western AHS co-ordinates and delivers public ophthalmology surgical services in Bathurst, Orange, Mudgee, Dubbo, Bourke, Broken Hill, and Forbes, and is soon to commence a service in Cowra. The service in Bourke is implemented by the OES (see 4.3.2). Ophthalmologists performing surgery generally have a Visiting Medical Officer (VMO) contract with Greater Western AHS.

#### Service Model

There is no existing eye health services strategic or service plan for the Greater Western AHS. A draft service plan was commenced in 2008 but was neither finalised nor implemented. Eye health services are not comprehensively co-ordinated by the AHS according to an identified service model.

The existing model is:

**Secondary Services:** The Broken Hill clinic is a public outpatient specialist clinic providing free ophthalmology secondary services to clients.

**Tertiary Services:** People requiring public ophthalmology surgical services in Greater Western AHS are placed on a waiting list which is managed by the AHS. The majority of ophthalmology surgery, such as cataract surgery, is given a Clinical Priority of 3 (where admission within 365 days is acceptable as the condition is unlikely to deteriorate quickly and has little potential to become an emergency). Quotas for surgery are set to ensure that the waiting list benchmark is achieved, and are adjusted during the year according to fluctuations in the number of people on the waiting list. Episode funding from NSW Health allows the AHS to respond to increased demand for elective surgery by increasing services, to ensure activity targets and waiting list benchmarks are achieved. However, a variety of factors such as availability of ophthalmologists and other surgical staff and the availability of operating theatre time can affect the flexibility of the system to respond.

## Throughput

Table 3 shows the number of ophthalmology services delivered to Greater Western AHS residents and treated within Greater Western AHS, and represents only patients admitted to hospitals (and therefore does not cover outpatient clinics or emergency department reviews).

Table 3: Hospital separations for ophthalmology services received by Greater Western AHS residents in Greater Western AHS facilities 2006–2009 (Source: FlowInfo V10)

	2006/07		2007/08		2008/09	
	Total	Aboriginal	Total	Aboriginal	Total	Aboriginal
Glaucoma and lens procedures	1,183	48 (4%)	1,130	35 (3%)	1,107	32 (3%)
Non-procedural Ophthalmology	203	46 (23%)	239	40 (22%)	196	45 (23%)
Other eye procedures	155	10 (6%)	179	6 (3%)	155	10 (7%)
<b>Total</b>	<b>1,541</b>	<b>104</b>	<b>1,548</b>	<b>81</b>	<b>1,485</b>	<b>87</b>

The majority of ophthalmology services are planned cases for glaucoma and lens (cataract) procedures, and the absolute numbers for these procedures has been decreasing slightly over the last three years. Non-procedural ophthalmology would predominantly represent services related to eye trauma and infection.

## Staffing

Ophthalmologists providing public and private surgical services through Greater Western AHS have VMO contracts with Greater Western AHS. Two ophthalmology registrar positions from POW Hospital are based in the Greater Western region on rotation, one placed at Broken Hill, and one on a rural term with the OES. There is one co-ordinator for the StEPS Program based in Greater Western AHS. Other than this there is no specific ophthalmology department or eye health services co-ordination roles within Greater Western AHS.

based in local health services. These staff help to screen, refer, and support clients in attending eye health services.

Uptake of tertiary eye health service procedures by Aboriginal people in the region is low, and has declined in the last three years (Table 3). Tertiary service delivery is demand driven, so lower uptake means less Aboriginal people are being placed on the list for tertiary services, which occurs at the secondary level. So issues at the secondary eye health service level in the region may be affecting demand for tertiary services.

## Partnerships

The Greater Western AHS has collaborative working partnerships with the key eye health service providers in the region. The AHS has formal Memoranda of Understanding with the ACCHS, though these are not specifically in relation to eye health care services. The AHS has specific employment contracts with the ophthalmologist VMOs. There is no formal agreement between the Greater Western AHS and the OES detailing the partnership between the two for eye health services delivered in Bourke, Brewarrina, Walgett, and Lightning Ridge.

### 5.1.2 Outback Eye Service

The Outback Eye Service (OES) is an outreach eye service delivered to regional areas within NSW by the Department of Ophthalmology at Prince of Wales Hospital (POW) (South Eastern Sydney Illawarra Area Health Service). The service has a long history in the region, which commenced with the work of Professor Fred Hollows in Bourke in the 1970s. The OES delivers secondary and tertiary eyecare services.

## Access for Aboriginal clients

The eye health services provided by Greater Western AHS do not specifically target Aboriginal people, although there is some involvement of the Aboriginal health workforce in the delivery of services. The Aboriginal health workforce in Greater Western AHS provides primary health care and liaison to Aboriginal clients in the Greater Western region, and are

## Service

The OES delivers regular eye clinics in seven locations, attended by an ophthalmologist, ophthalmology registrar, optometrist, and one or two ophthalmic nurses. The clinics are generally held at the local Health Service Hospital or Community Health Centre (excepting Cobar where it is held at the Allied Health Centre of the Outback Division of General Practice). The clinics provide a comprehensive optometry/ophthalmology service, and is available free of charge to clients who are bulk-billed through Medicare.

The OES delivers ophthalmology surgical services in Bourke four times a year, in partnership with the Bourke Health Service and Greater Western AHS to clients from the clinic locations (excluding Menindee and Wilcannia who attend Broken Hill Base Hospital for surgery). The OES also co-ordinates referral and Follow-up for more complex cases to the Department of Ophthalmology at POW.

The services thus provided by the OES includes: Advice and education to health service workers, clients, and communities, vision and eye health screening, prescription of relevant medications, visual field testing, retinal imaging, laser treatment, surgical intervention, post-operative care, prescription and dispensing of glasses, monitoring and follow-up.

### Locations and frequency

The OES implements secondary services in to Bourke, Brewarrina, Walgett, Lightning Ridge, Cobar, Wilcannia (in partnership with Maari Ma), and Menindee (in partnership with Maari Ma). Full clinics (ophthalmology, optometry, and ophthalmic nurse) are held with the following frequency:

- Bourke: 2 days every month
- Brewarrina: 1 day every 3 months
- Walgett: 1 day every second month (with optometry only clinics held in all other months)
- Lightning Ridge: 1 day every second month (with optometry only clinics held in all other months)
- Cobar: 2 days every 2 months (with optometry only clinics held in all other months)
- Wilcannia: 2 days once per year (with optometry only clinics held one other time per year)
- Menindee: 2 days once per year (with optometry only clinics held one other time per year)

The OES delivers tertiary ophthalmic surgery to the clients from these locations (excepting Wilcannia and Menindee) in Bourke. Surgery in Bourke is implemented 4 times a year (2 days per session), and for each of these surgery blocks pre-operative and post-operative clinics are conducted.

### Service Model

The OES provide a comprehensive ophthalmic service to their clients, which includes optometry, ophthalmology, surgery, and referral to POW Hospital for complex cases. Clinical services and case/client management is co-ordinated by the staff of OES, namely the two ophthalmic nurses.

Generally clients from one town location (excluding Wilcannia and Menindee) all receive their surgery in the same block, which enables co-ordinated pre-operative and post-operative care for the clients. The pre-operative and post-operative clinics are held in the town, transport is co-ordinated for all clients together, and the ophthalmology registrar stays in the town for the week after surgery, available to address any post-operative complications that may arise for clients.

In Bourke and Cobar ophthalmologists connected with OES and POW Hospital are recruited to deliver the clinics and surgery as required. In contrast, three ophthalmologists have been providing a long term consistent service to the towns of Walgett, Brewarrina, and Lightning Ridge respectively. Two of these (in Brewarrina and Walgett) provide surgery to their clients from that town during their surgical block.

In the OES the ophthalmologist and the optometrist work in close partnership, co-located and collaborative on patient management. The optometrist screens clients, addresses refractive error with glasses as required, and ensures that only those clients requiring ophthalmological review are seen by the ophthalmologist. This increases the efficiency of the clinic, and the convenience for the client.

### Throughput

The following table shows the throughput of the OES for the last three years for the towns of Bourke, Brewarrina, Walgett, Lightning Ridge, and Cobar. These data show the number of occasions of service in a given year. (Note an occasion of service reflects a client attending the clinic on a given day, and may include one or all of review by ophthalmologist, registrar, optometrist, or eye health nurse, or surgery). The OES performs 60 operations per year, which are also included in the data below. The number of surgeries performed by the OES is capped at 60 per year by Greater Western AHS. To date, this cap has been sufficient to enable most clients to receive surgery within the benchmark of less than 12 months on the waiting list.

Table 4: Occasions of service of the OES combined for Bourke, Brewarrina, Walgett, Lightning Ridge, and Cobar for 2007–2009. (Source: OES)

Clients	2007	2008	2009
Aboriginal Clients	359	302	339
Non-Aboriginal Clients	765	776	1243
<b>TOTAL</b>	<b>1134</b>	<b>1075</b>	<b>1582</b>
(New Clients)	152	154	198



## Funding

The OES is principally funded by the Rural Primary Health Service Program at the Department of Health and Ageing. A new contract for \$840K over three years was signed in 2010. Funding from MSOAP and VOS assists with costs associated with travel for the ophthalmologist and optometrist to some towns only. The OES also receives funding in kind from Greater Western AHS (travel) and SESIAHS (administration and consumables). Bourke surgery costs are shared between the AHS and the OES. Equipment funding has come from various sources. Most clinics are well equipped, with some items shared and transported between clinic locations.

## Staffing

The OES has two permanent positions, Manager and Clinical Co-ordinator, which are based at POW Hospital. Both these positions are filled by ophthalmic nurses, who co-ordinate clinical services, case manage clients, and attend all outreach clinics and surgeries.

The ophthalmologists working with the OES are predominantly private ophthalmologists who work with the OES on a semi-regular basis. The financial incentive for providing this outreach service is minimal for the ophthalmologists, where they receive only the Medicare item allowances for the consultation completed in clinics, and a fee for service from Greater Western AHS for surgeries completed. Despite this, the OES has a number of committed ophthalmologists who have been providing these services long term, and a steady supply of ophthalmologists available to deliver the service as required. There is a culture of altruism within some circles of ophthalmology, perhaps related to that initially developed by Fred Hollows, and the experiences in rural and Aboriginal eye health that all NSW ophthalmology registrars receive may also contribute to this willingness to participate.

The OES has a dedicated RANZCO-accredited ophthalmology registrar position placed with the service, which is funded through OES funds. This registrar attends all outreach clinics and surgeries, and after a surgery block stays in the town from which clients received surgery for a one week period to address complications.

A private optometrist works in close partnership, and attends most clinics implemented by the OES. The optometrist provides a full optometry service, and provides glasses through the VisionCare service to eligible clients, or for sale to other clients. The optometrist also conducts optometry only clinics in the locations between the full clinics. The optometrist receives VOS funding for some towns attended,

and also receives the Medicare item allowance for optometry-only clients, and income from any glasses sold.

For surgery, the ophthalmologist, registrar, and ophthalmic nurses from the OES staff attend and deliver the services in Bourke. The OES also supplies a surgical scrub nurse from POW for surgeries. A local GP acts as the anaesthetist for the surgery, and local staff in Bourke act as technician (steriliser) and surgical scout.

## Partnerships

The OES works collaboratively with the Greater Western AHS to deliver eye health services within the region including surgery to clients in Bourke. There is no formal arrangement between the OES (or SESIAHS) and the Greater Western AHS, and the partnership relies on ongoing collaboration and communication.

The OES works closely with the Bourke AMS, which provides a number of the equipment items for use at the eye clinics, and assists with co-ordination, liaison, and transport for AMS clients to the clinic. Similarly, the Walgett and Brewarrina AMS also co-ordinate with the OES to ensure their clients access the service. A new partnership between OES and Maari Ma has developed OES clinics in Wilcannia and Menindee.

The OES developed a partnership with the Outback Division of General Practice to secure funding and establish the OES in Cobar. An outreach clinic is held at the Allied Health Centre of the Division. The OES and the Division also work closely in enhancing eye health elements of primary health care within the region.

## Access for Aboriginal clients

For 2007–2009, the annual proportions of services delivered by the OES in the five main towns that were to Aboriginal people were 31%, 28% and 21% respectively. (26% of total residents in these towns are Aboriginal.) While the OES is a rural eye health service (as distinct from an Aboriginal eye health service), a number of aspects of the program do make it more accessible to Aboriginal people. The eye clinics and surgery are provided in rural towns with high Aboriginal populations. The service has close partnerships with the ACCHS, whose staff assist with ensuring their clients access the OES. The Greater Western AHS Aboriginal health workforce at the hospitals are involved in promotion and liaison for the service, which improves access. The service, both eye clinic and surgery, is available free of charge.

The decrease in proportion of Aboriginal people receiving OES services in 2009 may be due to two factors. The REHC position in Bourke AMS was not filled in 2009, and this position has been vital in promotion and case management for the OES in Bourke. It was filled in September 2010. Secondly, the Cobar service has not yet had a high uptake by Aboriginal clients, perhaps due the absence of an AMS in Cobar, or the fact that no Aboriginal specific promotion or liaison for the service has yet been undertaken.

### 5.1.3 ICEE with AMS — Outreach Optometry Clinics for Aboriginal People

The International Centre for Eyecare Education (ICEE), with AHMRC and OATSIH, in partnership with VisionCare NSW, established the Aboriginal Eye and Vision Care Program in 1999, setting up eyecare clinics in ACCHS around NSW. With OATSIH funding, seven eye clinics and seven REHC positions were established in ACCHS in NSW, with four of each located within the Greater Western region (Wellington, Walgett, Bourke, and Broken Hill). The Aboriginal Eye and Vision Care program is actively implemented through two of these locations in the Greater Western region- Wellington and Walgett. From these locations clinic and outreach optometry services are delivered to Aboriginal communities in the region, within ACCHS facilities.

#### Service

The Aboriginal Eye and Vision Care Program is essentially an optometry service, primarily focussed on addressing uncorrected refractive error and examining for the presence of other ocular disease. The program offers Medicare-funded optometry eye examinations and spectacles under the NSW Government spectacle program. Clinics are held at the eye clinics established in Walgett and Wellington AMS, and outreach optometry clinics are held in 36 locations presently. All clinics are co-ordinated by the REHC and are conducted within ACCHS or at a Land Council facility. The program targets Aboriginal people, but will also service non-Aboriginal people. Clients to the service can self refer, or be referred by primary health care practitioners. Referrals also come from vision screening conducted by the REHC in schools and other community locations.

#### Locations, frequency, and throughput

The ICEE estimates that 1264 clients were seen in the Greater Western region in 2009-10. The number of clinic days in a certain location depends on the observed need in the community and the availability of an optometrist, and is co-ordinated by the REHC and ICEE. The number of clinic

days and number of spectacles issued are outlined in Table 5 (on the next page). The number of spectacles delivered was the only throughput data provided, and is an indicator of the number of clients seen.

#### Funding

Funding for the set up of the eye clinics and the ongoing funding for the REHC positions and the costs to the AMS for implementing the program comes from OATSIH. ICEE is a not for profit NGO and funding from the program comes from the Brien Holden Vision Institute, organisational fund raising, and specific grants for training and resources. Many optometrists associated with the program receive funding through VOS.

Greater Western AHS provides air travel for the program staff through flights contracted to the RFDS.

The eye clinics in Walgett and Wellington are well equipped, and both have a slit lamp (enabling a more thorough eye health exam) and a digital retinal camera. Walgett has a portable slit lamp for outreach clinics, but Wellington does not, although most optometrists are able to provide one.

#### Staffing

There are two dedicated REHC positions working on the program, based in Wellington and Walgett. One AHW in Walgett AMS is also working full-time on the eye program with the REHC. The REHC positions in Broken Hill and Bourke are not involved in this program (see Section 5.3.2).

Optometrists working on the program mostly come from relatively close towns (within 2-3 hours) and generally provide continuity of care. If local optometrists are not available, ICEE recruits Sydney-based optometrists to work on a locum basis. In the past ICEE had a full-time optometrist position placed with the program, which avoided the challenge of accessing private optometrists, however there are currently no funds for this position. Clinics are sometimes cancelled due to no available optometrist.

#### Partnerships

The program is implemented through the successful partnership between ICEE, AHMRC, Walgett and Wellington AMS, the REHC, and VisionCare NSW. Each REHC maintains strong links with all AMS and land councils within their region, and establishes links with local primary health care providers to receive referrals, and ophthalmologists for ongoing referrals. There is no obvious collaboration between this program and Greater Western AHS or the

Table 5: Locations of ACCHS outreach optometry clinics, frequency and throughput. (Source: ICEE)

Location	Number of Clinic days 1 July 09 – 30 June 10	Spectacles Issued 1 July 09 – 30 June 10
Balranald	2	32
Baradine	1	8
Bathurst	4	61
Billow Downs	1	14
Brewarrina	3	30
Cobar	3	18
Collarenebri	2	18
Condobolin	4	20
Coonabarabran	3	25
Coonamble	4	66
Cowra	2	16
Dubbo	8	32
Forbes	8	61
Gilgandra	2	16
Goodooga	4	16
Ivanhoe	2	13
Lightning Ridge	3	34
Murrin Bridge	4	26
Narromine	6	55
Orange	6	47
Parkes	7	59
Peak Hill	3	32
Tibooburra	1	10
Toolybuc	1	9
Walgett	16	172
Wanaaring	1	21
Warren	4	13
Wellington	39	214
<b>TOTAL</b>	<b>144</b>	<b>1138</b>

OES. The ICEE provides ongoing training, professional development, and support to the REHC, and also to any other ACCHS staff (such as Aboriginal Health Workers) interested in eye health training.

### Access for Aboriginal Clients

This service is targeted for Aboriginal people, is delivered through ACCHS, and is co-ordinated by the REHCs (who are both Aboriginal women). The ACCHS or Land Council are generally responsible for client liaison and arranging appointments and transport for the clinics, while the REHC co-ordinates the clinic, and arranges delivery of glasses and ongoing follow-up for any clients from the clinic as required.

### 5.1.4 ACCHS

#### 5.1.4a MAARI MA

Maari Ma Health Aboriginal Corporation is an ACCHS based in Broken Hill that manages the health services in the Far Western Region, in close partnership with the Greater Western AHS. Maari Ma delivers primary health care services, and specialist eye health services in some locations. POW has one ophthalmology registrar position placed full time in Broken Hill (on 6 month rotations), and this registrar is available one day per week for working with Maari Ma. In addition, Maari Ma has entered into partnership with the OES to deliver comprehensive ophthalmology clinics in Wilcannia and Menindee annually. Maari Ma also helps to co-ordinate the local arrangements for the annual RFDS ophthalmology fly around clinic (see 4.3.5). Maari Ma services are specifically designed and delivered for Aboriginal people in the region.

## Service, locations and frequency

Maari Ma runs eye clinics with the ophthalmology registrar, which provide a screening and diagnostic service. These clinics are run as follows: Broken Hill (1x/fortnight), Wilcannia (6x/year), Menindee 4x/year, Ivanhoe (1x/year), Tibooburra (1x/year), and White Cliffs (1x/year).

The clinics delivered in partnership with the OES provide a comprehensive ophthalmology and optometry service. These are held annually in Wilcannia and Menindee (2 days each per year). OES optometry only clinics are held in these locations one other time per year. This service commenced in 2009.

## Throughput

Table 6 shows the throughput is for the registrar clinics and OES clinics combined. The increased numbers in 2009 are due to the commencement of the OES/Maari Ma ophthalmology clinic days. This does not include the RFDS which are seen as separate clinics and described below.

## Funding

Maari Ma receives OATSIH funding for the REHC positions and the implementation of the chronic care and eye health services. OES receives funding through MSOAP and VOS specifically for the Wilcannia and Menindee locations.

## Staffing

POW has one RANZCO accredited registrar position placed full time in Broken Hill (on 6 month rotations), and this Registrar is available one day per week for working with Maari Ma. Maari Ma has funding for one of the seven REHC positions in NSW, however they have incorporated this position into their chronic disease strategy team, so that all team members are involved in eye health promotion, vision screening, and referral.

## 5.1.4b THUBBO

A General Practitioner in Dubbo who specialises in ophthalmology delivers an outreach public eye health clinic at Thubbo, the ACCHS in Dubbo, for one half day per month. Referrals are then made to ophthalmologists for tertiary services as required. This service is provided free of charge to Aboriginal people, as services are bulk billed to Medicare.

## 5.1.5 Royal Flying Doctor Service

The RFDS in Broken Hill operates a one week ophthalmology outreach service to remote areas in the Broken Hill region once per year. This has been a long standing service of the RFDS, which was previously run three times per year, but has become an annual service only for the last five years.

## Service

The service is a fly-around clinic, and includes an ophthalmologist and optical dispenser. It is essentially a screening service for eye disease, and provides an optical service.

## Locations

The locations selected for the clinics each year depends on logistical issues including plane schedule. The (NSW) locations for the last three years were:

2008: Menindee, Tibooburra, White Cliffs, Ivanhoe,  
2009: Menindee, Tibooburra, White Cliffs, Ivanhoe, Maripina and Monolon (Properties)  
2010: Wanaaring, Tibooburra, White Cliffs, Monolon.

Clinics are held in a Greater Western AHS Health service facility, or in a community location such as a property or local pub.

Table 6: Number of clients seen at outreach ophthalmology clinics conducted by Maari Ma (Source: Maari Ma).

	Jan – Jun 08	Jul – Dec 08	Jan – Jun 09	Jul – Dec 09
	Total Aboriginal	Total Aboriginal	Data not available	Total Aboriginal
Broken Hill	36 (36)	35 (35)		44 (42)
Wilcannia	25 (23)	22 (16)		115 (71)
Menindee	15 (3)	36 (18)		88 (40)
Ivanhoe	0	8 (4)		8 (4)
Tibooburra	0	4 (0)		11 (1)
White Cliffs	0	14 (0)		15 (0)
<b>TOTAL</b>	<b>76 (62)</b>	<b>119 (73)</b>		<b>281 (158)</b>

## Service Model

The RFDS runs three specialty clinics annually — in ophthalmology, ear/nose/throat, and dermatology. More routinely they run regular outreach clinics to these regions, which are predominantly general practice and primary health care, and clients identified through these clinics are referred internally to the annual ophthalmology fly around clinic. The RFDS advertises its services to the remote locations, and people are also able to self-refer to the service. Clients requiring tertiary eye health services would be referred to Broken Hill.

## Throughput

In 2010 eighty-six clients were seen by the ophthalmologist in the fly around ophthalmology clinic. There are no data available for the previous years. There is no information available on what proportion of those clients seen were Aboriginal.

## Funding

The RFDS funds the service, funding all running costs and paying for the specialist and optical dispenser. RFDS receives DOHA and private funding for service implementation.

## Staffing

A Sydney ophthalmologist and optical dispenser are recruited by the RFDS to implement the service annually. An RFDS doctor also attends the clinic.

### 5.1.6 Private Optometry and Ophthalmology Services

## Service

Private ophthalmology and optometry services are available through private practice, stores, and clinics, throughout the Greater Western region, but particularly in the south eastern area of the region.

## Locations

Private ophthalmology practices or services are available in the following towns: Bathurst, Orange, Mudgee, Parkes, Forbes, Cowra, and Dubbo. These are either staffed by full-time resident ophthalmologists, ophthalmologists visiting from Sydney, or a combination of these. Those ophthalmologists working in clinics within the Greater Western region perform surgery on public and private clients in Greater Western AHS facilities.

Private optometry practices and services are available in Bathurst, Orange, Mudgee, Wellington, Dubbo, Forbes, Parkes, Cowra, Coonabarabran, Coonamble, Nyngan, Cobar, Lightning Ridge, Gilgandra, Condobolin, Gulgong, Goodooga, Brewarrina, Walgett, and Broken Hill.

## Funding

Ophthalmology practices run as small businesses generally owned by one ophthalmologist. The set up for a private ophthalmology clinic in terms of equipment required is estimated to be approximately \$300–500K. Other costs in running the clinics include staff (receptionist, orthoptists, eye nurse), equipment maintenance, and overheads (such as rent and utilities).

## Access for Aboriginal clients

All people are able to attend private clinics. The cost for optometry consultation is generally fully covered by Medicare (98% of optometry consultations are bulk billed and as a result there is no gap payment) and glasses must be paid for unless clients are eligible for the NSW Government Spectacle Program. Consultations with an ophthalmologist privately will generally not be fully covered by Medicare, unless an ophthalmologist agrees to bulk-bill. Many ophthalmologists in the Greater Western region will agree to bulk bill on a case by case basis, and some have a standing policy to bulk bill all Aboriginal clients.

Besides funding arrangements, no private optometrists or ophthalmologists in the region appear to be actively modifying their services to improve accessibility for Aboriginal clients. The private ophthalmologists interviewed were not able to provide data on the uptake of their services by Aboriginal people, but in general they felt that uptake was quite low.

The REHCs reported a number of occasions where negotiating affordable services for Aboriginal clients in private practices was quite challenging, and had encountered some negative cultural attitudes. As a result they organised referrals to practices in the region they know to be more welcoming and affordable for Aboriginal people. This results in some clients from Bathurst often attending a private practice in Dubbo for review.

## 5.1.7 Eye health service provider summary

Table 7 gives a summary overview of the key services providers in Greater Western region, and the services they provide.

Table 7: Summary table of the key eye health service providers in Greater Western region.

Who	What	Locations
<b>PRIMARY EYECARE</b>		
ACCCHS, GPs, Community Clinics, RFDS	Primary Health Care	All
<b>SECONDARY EYECARE</b>		
<b>ACCCHS with ICEE</b>	ICEE Optometry Clinics (outreach) held at AMS or other locations, co-ordinated by Regional Eye Health Co-ordinators, and staffed by visiting optometrists.	REHC in Wellington and Walgett co-ordinate outreach clinics to 36 locations in Greater Western region. (4-12 x/year per location)
<b>Greater Western AHS</b> (Broken Hill Hospital)	Public Ophthalmology Clinic (nurse, registrar, Ophthalmologist)	Broken Hill Base Hospital (6 days/month)
<b>Outback Eye Service</b>	Public Ophthalmology Clinics (Eye Nurse, Optometrist, Optical Dispenser, Registrar, Ophthalmologist).	Bourke, Brewarrina, Walgett, Lightning Ridge, Cobar, (every 1-3 months) Wilcannia and Menindee (2 x/ year with Maari Ma).
<b>Maari Ma</b>	Eye Clinics with Registrar	Maari Ma PHC Clinic (BH), Wilcannia, Menindee, Ivanhoe, Tibooburra, White Cliffs. (1-6 x/year).
	Public Clinics (optometry, ophthalmology, eye nurse)- with OES.	Wilcannia and Menindee 1x/year
<b>RFDS</b>	Ophthalmology Outreach Clinics (ophthalmologist and optical dispenser).	Menindee, Tibooburra, White Cliffs, Ivanhoe. (1 x/year).
<b>Private Optometrists</b>	Located in optometry practices (most have access to NSW Government Spectacle Program).	Bathurst, Dubbo, Orange, Forbes, Mudgee, Parkes, Broken Hill, Cowra, Coonabarabran, Coonamble, Nyngan, Cobar, lightning Ridge, Gilgandra, Condobolin, Gulgong, Goodooga, Brewarrina, Walgett.
<b>Private Ophthalmologists</b>	Private Ophthalmologists in Rooms (some may provide bulk billing services).	Bathurst, Dubbo, Orange, Forbes, Mudgee, Gulgong, Parkes, Cowra.
<b>TERTIARY EYECARE</b>		
<b>Greater Western AHS</b>	Surgery	Bathurst, Forbes, Broken Hill, Dubbo, Orange, Cowra, Mudgee, Broken Hill.
<b>Greater Western AHS with OES</b>	Surgery	Bourke

## 5.2 Ophthalmology service mapping

### 5.2.1 Service availability by local government area

Primary health care services are available in all LGAs through public health services, primary health care centres, GPs, ACCHS, and RFDS. The degree to which each of these includes eye health services into their service delivery was not reviewed.

Table 8 shows an overview of the availability of secondary and tertiary eye health services by local government area, in

relation to the population of Aboriginal residents by LGA (where the LGA with the largest number of Aboriginal residents listed first). For secondary services the optometry clinics run through ICEE/ ACCHS or OES are available in most of the LGAs with larger Aboriginal populations, with the exception of Broken Hill, Wentworth, and Mid-Western regional (Mudgee). Public ophthalmology is available in 6 LGA areas, and not always in those with considerably larger Aboriginal resident populations. Private ophthalmology is available in seven LGAs, some of those with a larger number of Aboriginal residents. Tertiary ophthalmology services including surgery are available in seven locations in Greater Western region.

Table 8: Availability of secondary and tertiary eye health services by local government area in Greater Western region, in relation to the proportion of Aboriginal residents in each LGA.

LGA of Residence	Aboriginal Residents	Total Pop'n	% Pop'n who are Aboriginal	Optometry (Clinics / ACCHS)	Public Ophthalmology	Private Ophthalmology	Public Surgery
Dubbo	4,492	41,187	10.9	Yes		Yes	Yes
Walgett	2,164	7,010	30.9	Yes	Yes		
Orange	1,739	38,288	4.5	Yes		Yes	Yes
Wellington	1,422	8,626	16.5	Yes			
Bathurst	1,418	39,122	3.6	Yes		Yes	Yes
Broken Hill	1,288	19,018	6.8		Yes		Yes
Brewarrina	1,287	1,926	66.8	Yes	Yes		
Narromine	1,173	6,720	17.5	Yes			
Coonamble	1,144	4,095	27.9	Yes			
Lachlan	1,137	6,748	16.8	Yes			
Parkes	1,130	14,836	7.6	Yes		Yes	
Bourke	1,018	3,095	32.9	Yes	Yes		Yes
Cowra	836	13,123	6.4	Yes		Yes	Yes
Warrumbungle	833	9,868	8.4	Yes			
Central Darling	784	1,868	42	Yes	Yes		
Wentworth	722	7,072	10.2	Yes		Yes	Yes
Forbes	705	9,465	7.4				
Mid-Western Regional	653	22,280	2.9			Yes	
Gilgandra	636	4,559	13.9	Yes			
Cobar	565	4,934	11.5	Yes	Yes		
Warren	371	2,665	13.9	Yes			
Bogan	366	2,816	13	Yes			
Cabonne	309	13,046	2.4	Yes			
Balranald	197	2,530	7.8				
Blayney	174	7,003	2.5				
Oberon	131	5,389	2.4				
Weddin	73	3,670	2				
Unincorporated NSW	30	1,040	2.9				
<b>Total Greater Western Region</b>	<b>26,797</b>	<b>301,999</b>	<b>8.9</b>				
<b>NSW Total</b>	<b>165,916</b>	<b>7,207,653</b>	<b>2.3</b>				

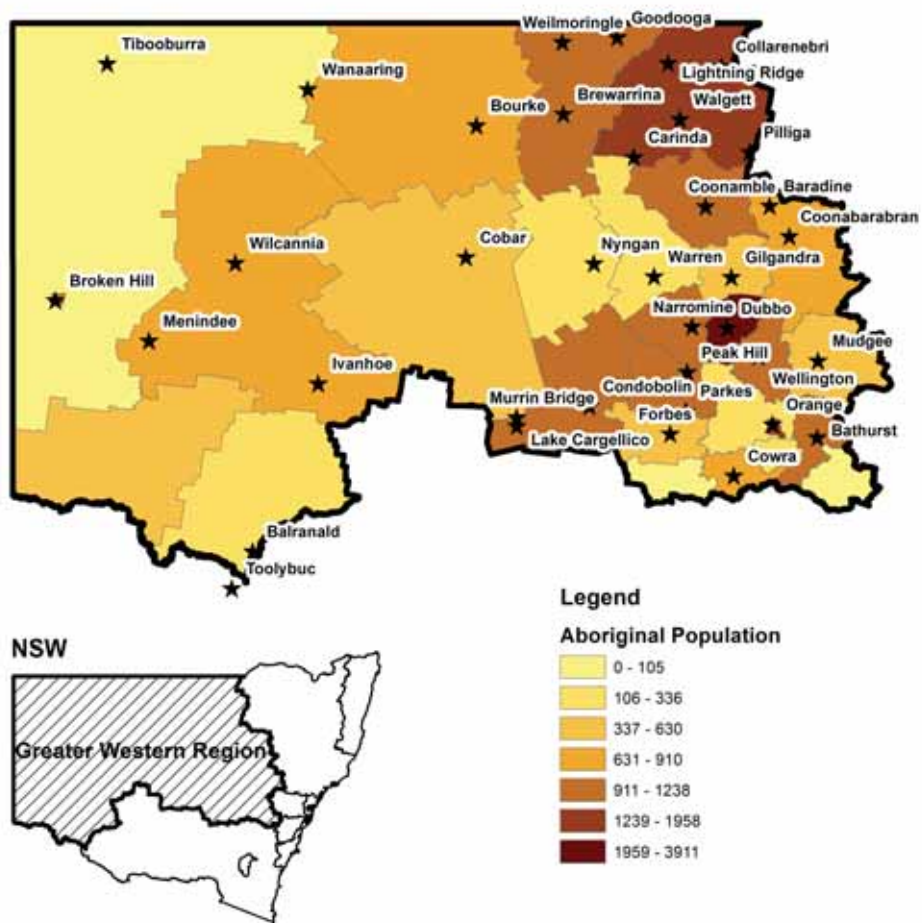
## Primary services

Primary health services are available in all Greater Western AHS Health Service facilities, and through ACCHS and GPs. The degree to which each of these includes eye health services into their service delivery was not reviewed.

## Secondary services

Outreach optometry clinics are held in a larger number of locations, as demonstrated on a map of the Greater Western region in Figure 4.

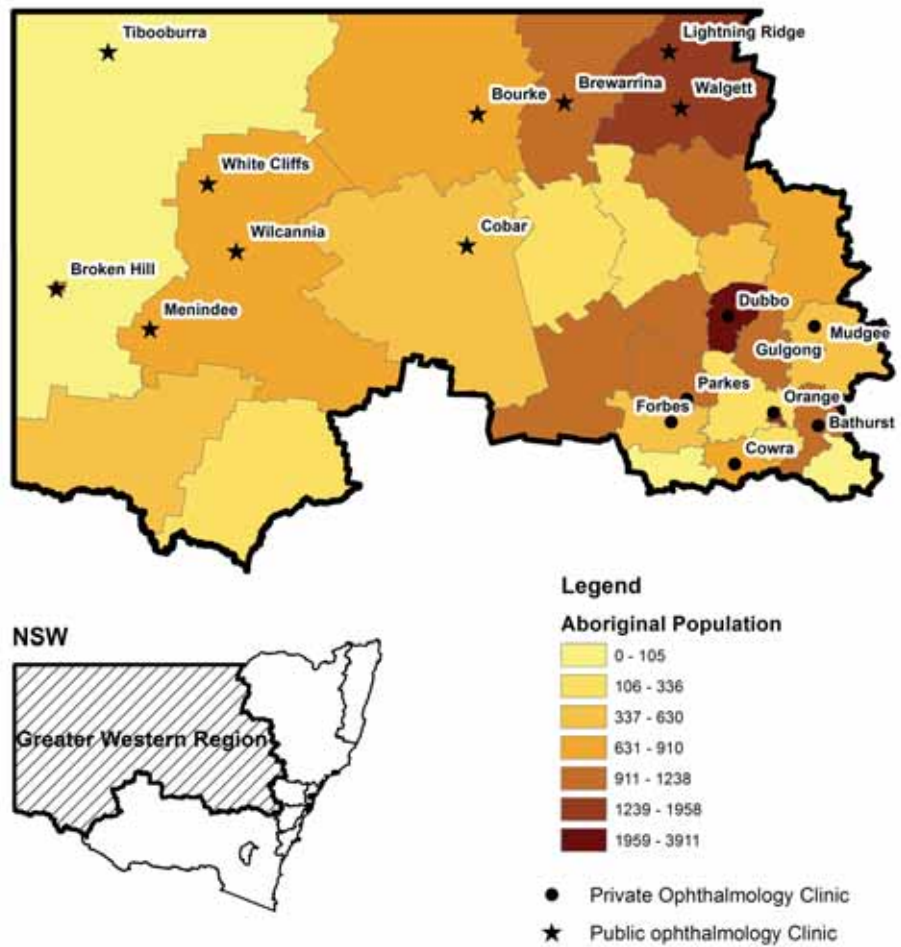
Figure 4: Locations in the Greater Western region where outreach optometry clinics are conducted, through ICEE/ ACCHS or OES. (Source: ICEE)





Public ophthalmology clinics are available in Bourke, Brewarrina, Walgett, Lightning Ridge, Broken Hill, Wilcannia, and Menindee. Private ophthalmology clinics are available in Bathurst, Orange, Mudgee, Parkes, Forbes, Cowra, and Dubbo. Figure 5 shows these locations on a map of Greater Western region.

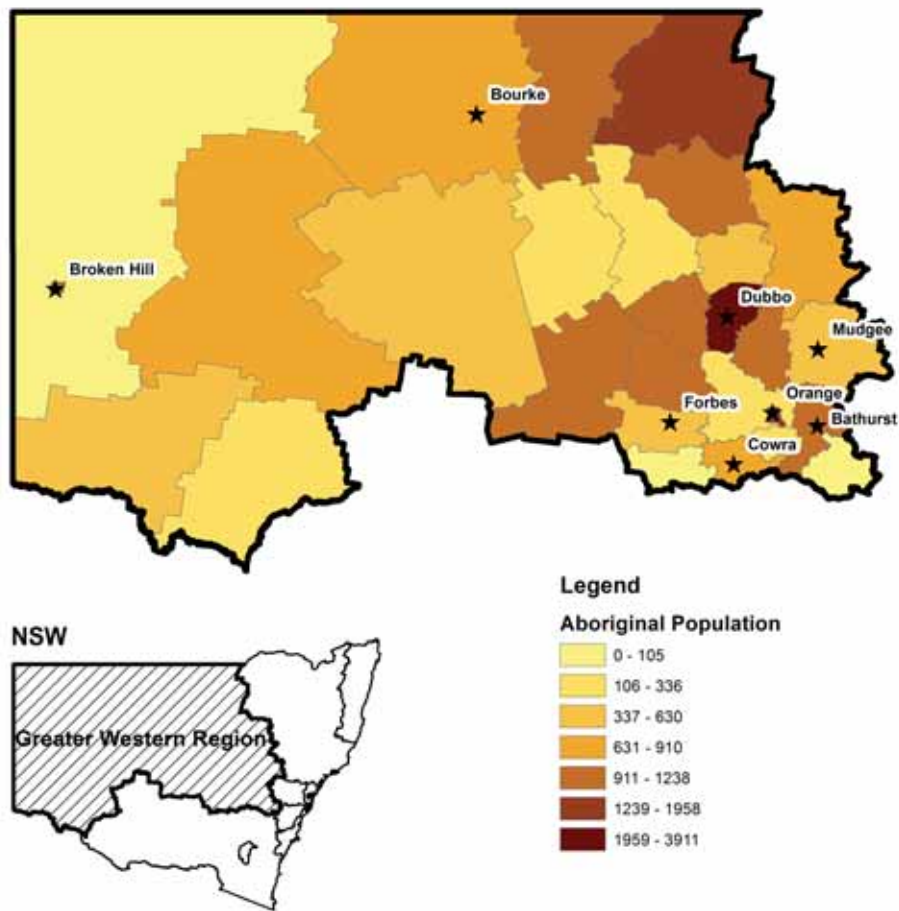
Figure 5: Locations in Greater Western region where ophthalmology services are available.



## Tertiary services

Public surgery is available in the Greater Western region in Bathurst, Orange, Mudgee, Dubbo, Bourke, Broken Hill, and Forbes, and is soon to commence a service in Cowra, and these locations are shown on a map of the Greater Western region in Figure 6.

Figure 6: Locations in Greater Western region where tertiary (surgical) ophthalmology services are available.



## 5.2.2 Access to tertiary ophthalmology services

There are only limited and incomplete data on the uptake of secondary eye health services by Greater Western region residents in general and Aboriginal people in specific. Secondary eye health services are provided by a number of eye health service providers, who use different and incomplete systems for data gathering. The information available on service delivery to Aboriginal people by each service providers is included in Section 5.1. However, uptake of tertiary ophthalmology services is available.

This information provides demographic, service utilisation and trends data for Greater Western region Aboriginal residents who access ophthalmology services. The information was prepared by Greater Western AHS, using Flow Info Version 10, a NSW Health Department supplied software which extracts information from the admitted patient data set in the NSW Health Information Exchange. The information relates only to patients admitted to hospitals, and not those treated in an outpatient setting. Ophthalmology services are defined as patients who have been categorised with a service related group (SRG) of 50 ophthalmology services assigned at the time of clinical coding to the patient's record. All ophthalmology services may include planned cases such as all eye procedures, and unplanned cases such as trauma and injury.

Table 8 shows the demographic data of Greater Western AHS patients accessing ophthalmology services in 2006/7 and 2008/9. Of all people using ophthalmology services, the proportion of Aboriginal people using services has decreased slightly. While 44% of Greater Western region residents accessing ophthalmology services accessed public services as private patients, only 6% of Aboriginal Greater Western region residents using ophthalmology services were private (in 2008/9).

Table 8: Demographic profile of Greater Western region residents accessing ophthalmology services (Source: Greater Western AHS using FlowInfo V10).

Demographic	2006/07	2008/09
Male	47%	48%
Female	53%	52%
Average Age	75 Years	75-79 Years
Aboriginal	7%	6%
Non-Aboriginal	93%	94%
Public patient	44%	44%
Private/Other patient	55%	56%

Table 9 shows the number of hospital separations of Greater Western region residents treated in Greater Western AHS facilities. This demonstrates an overall decrease in the total number of separations for Aboriginal residents over the last three years, particularly for glaucoma and lens procedures. Table 10 shows total hospital separations for ophthalmology services for Aboriginal and non-Aboriginal residents of Greater Western region treated within Greater Western AHS facilities.

Table 9: Hospital separations for ophthalmology services delivered to Greater Western region residents treated in Greater Western AHS 2006–2009. (Source: Greater Western AHS using FlowInfo V10).

	2006/07		2007/08		2008/09	
	Total	Aboriginal	Total	Aboriginal	Total	Aboriginal
Glaucoma and lens procedures	1,183	48 (4%)	1,130	35 (3%)	1,107	32 (3%)
Non-procedural Ophthalmology	203	46 (23%)	239	40 (22%)	196	45 (23%)
Other eye procedures	155	10 (6%)	179	6 (3%)	155	10 (7%)
<b>Total</b>	<b>1,541</b>	<b>104 (7%)</b>	<b>1,548</b>	<b>81 (5%)</b>	<b>1,485</b>	<b>87(6%)</b>

Table 10: LGA of residence of Greater Western region residents accessing Greater Western AHS ophthalmology services  
(Source: Greater Western AHS using FlowInfo V10).

LGA	2006/07			2007/08			2008/09		
	Non-Aboriginal	Aboriginal	Total	Non-Aboriginal	Aboriginal	Total	Non-Aboriginal	Aboriginal	Total
Balranald	0	1	1	2	0	2	1	0	1
Bathurst Regional	175	2	177	206	3	209	176	5	181
Blayney	27	1	28	40	1	41	39	0	39
Bogan	16	3	19	19	4	23	14	3	17
Bourke	10	17	27	21	5	26	20	8	28
Brewarrina	5	8	13	2	7	9	3	5	8
Broken Hill	204	2	206	231	5	236	169	3	172
Cabonne	54	0	54	44	1	45	49	0	49
Central Darling	11	3	14	6	5	11	4	13	17
Cobar	13	4	17	10	1	11	9	1	10
Coonamble	19	4	23	9	5	14	24	8	32
Cowra	71	4	75	63	0	63	53	4	57
Dubbo	132	11	143	131	13	144	111	5	116
Forbes	67	1	68	63	2	65	75	6	81
Gilgandra	16	5	21	20	1	21	18	0	18
Lachlan	26	7	33	22	5	27	25	5	30
Mid-Western Regional	178	1	179	177	0	177	150	1	151
Narromine	17	5	22	19	2	21	19	3	22
Oberon	25	0	25	21	2	23	25	0	25
Orange	146	3	149	159	3	162	147	2	149
Parkes	79	4	83	61	2	63	74	1	75
Unincorp. Far West	1	0	1	2	0	2	1	0	1
Walgett	27	10	37	27	8	35	36	12	48
Warren	6	0	6	6	2	8	9	1	10
Warrumbungle Shire	45	0	45	44	2	46	61	1	62
Weddin	26	0	26	24	0	24	24	0	24
Wellington	31	8	39	25	2	27	28	0	28
Wentworth	0	0	0	0	0	0	2	0	2
<b>Total</b>	<b>1,427</b>	<b>104</b>	<b>1531</b>	<b>1,454</b>	<b>81</b>	<b>1535</b>	<b>1,366</b>	<b>87</b>	<b>1453</b>

In 2008/09 thirty-six (36) Greater Western region Aboriginal residents accessed ophthalmology tertiary services outside Greater Western AHS facilities (20 for 2006/7). The locations where these separations occurred is shown in Table 11.

Table 11: Hospital locations where Greater Western region Aboriginal residents accessed ophthalmology tertiary services outside Greater Western AHS facilities for 2008/9. (Source: Greater Western AHS using FlowInfo V10).

Hospital	Separations
Sydney Eye Hospital	10
Prince of Wales Hospital	10
Children's Hospital Westmead	5
Sydney Children's Hospital	3
Moree Hospital	3
Royal Prince Alfred Hospital	1
Springwood Hospital	1
Westmead Hospital	1
Private hospitals	2

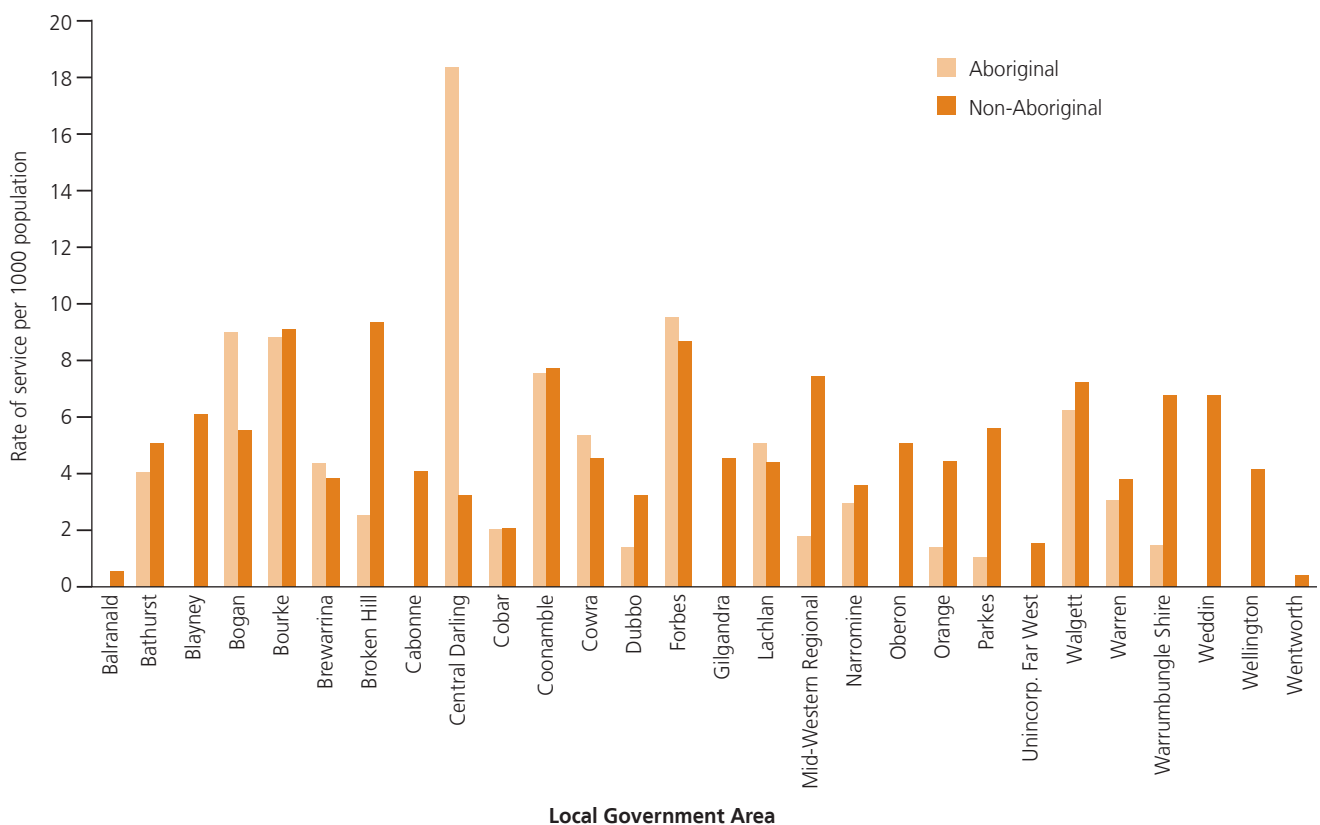
### 5.2.3 Rates of access to ophthalmology services

#### Rate of service uptake by LGA

In 2008/9 in Greater Western AHS there was an average of 5.1 ophthalmological inpatient separations in Greater Western AHS per 1,000 population. This rate is 3.6 for Aboriginal people. (Note this is a crude rate not adjusted for age). This rate was only for those accessing services in

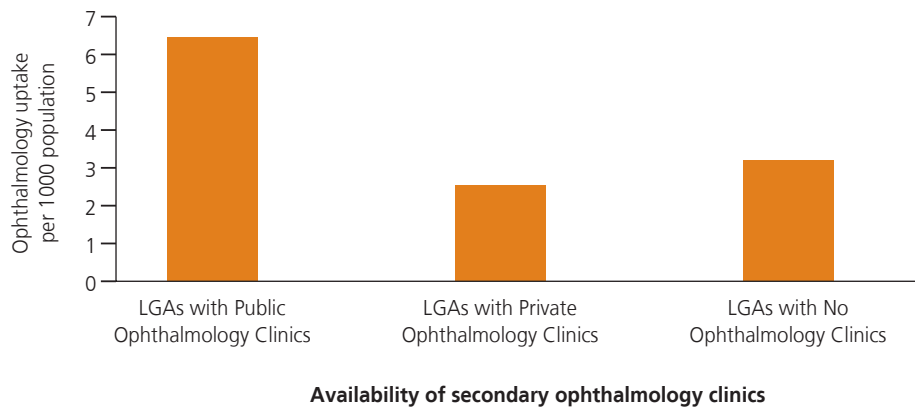
Greater Western AHS. As more non-Aboriginal people than Aboriginal people are utilising private ophthalmology services, the difference between the overall ophthalmology (public and private) uptake rate between Aboriginal and non-Aboriginal people in the Greater Western region would be significantly greater. Interestingly, these rates vary across LGAs. Figure 7 shows the rate of public tertiary ophthalmology separations per 1000 population for Aboriginal and non-Aboriginal people in the Greater Western region at the LGA level.

Figure 7: Crude ophthalmology service uptake rate for Greater Western region residents 2008/9.



For Aboriginal residents of Greater Western region, there is a relationship between the availability of a public ophthalmology clinic in their LGA of residence and the uptake of tertiary ophthalmology services in the eight available locations in Greater Western AHS (Figure 8). There is a significant difference in the proportional uptake of tertiary ophthalmology services for Aboriginal people from LGAs with public ophthalmology clinics, LGAs with private ophthalmology clinics, and LGAs with no ophthalmology clinics ( $\chi^2$  test,  $p < 0.001$ ).

Figure 8: Crude ophthalmology service uptake rate for Aboriginal Greater Western AHS residents for LGA groupings dependent on availability of public, private or no ophthalmology clinics.



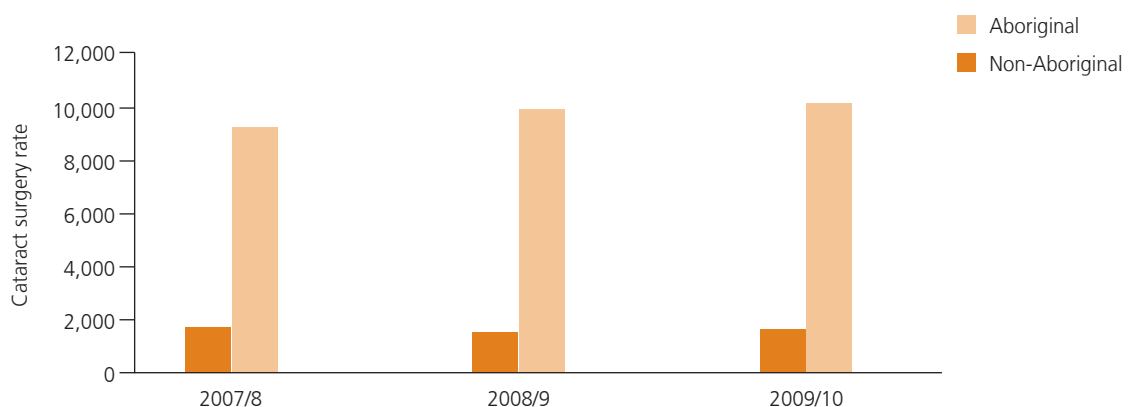
### Cataract surgery rate

Cataract surgery rate (CSR) is a standard measure for the number of cataract operations performed / million population / year. For 2007/08, the national average CSR for all Australians was 9453, and for Indigenous Australians was 2239. The average CSR for NSW for 2007-2010 was 9136, and for Aboriginal people in NSW the rate was 1885.

For 2007 -2010, an average of 46 Aboriginal people received cataract surgery annually in the Greater Western region of NSW. An additional 202 cataract operations for Aboriginal people would have been required annually on average in this period for the Aboriginal CSR in this LHD to equal the Australian CSR (9500).

The cataract surgery rate in the Greater Western region for 2007-2010 was 1750 for Aboriginal people and 9702 for non-Aboriginal people. Figure 9 shows the CSR for Aboriginal and non-Aboriginal people in the Greater Western region of NSW.

Figure 9: Cataract surgery rate (number of cataract operations performed / million population/ year) for residents of Greater Western NSW



## 5.3 Service delivery and co-ordination in Greater Western region

### 5.3.1 Primary Eyecare

Eye health services at the primary level were not the major focus of this review, with only a small number of primary health care professionals consulted (Appendix 2), however the following issues were noted.

#### Community education and eye health promotion

There are no specific eye health care promotion campaigns or programs implemented within the region through the key providers. Some primary health care providers report including eye health promotion elements into other community health education and promotion programs.

#### Screening at the primary health care level

Eye health screening should be incorporated into diabetes and chronic care management at the primary health care level, by GPs, Greater Western AHS primary health care providers, and in ACCHS. The degree to which this actually occurs and the resultant referrals to eye health care professionals was not able to be comprehensively covered in this review.

#### Retinal photography

At least four ACCHS have digital retinal cameras (Dubbo, Walgett, Wellington, and Broken Hill) as does Bourke Hospital, however none report using retinal photography for screening at the primary health care level. According to the stakeholders interviewed, there are a number of barriers to using retinal photography as a screening tool. There are no clear procedures developed in relation to retinal photography, and it is not clear which primary health care workers would be involved in retinal photography. Staff are unclear how to use the cameras, and would like additional training. They feel it may be difficult to establish regionally as the type of camera is not uniform. Finally, there is no system established whereby photographs would be screened by an eye health specialist to determine if a retinopathy requiring follow-up was present.

A number of stakeholders were interested in further developing the use of retinal photography at the primary health care level in the region. The REHC interviewed feel this should be the role of primary health care practitioners involved in regular management of people with chronic care, but that as REHC they would be able to ensure the photos

were reviewed by an appropriately trained person, and clients followed up as appropriate. ICEE stated they would be able to provide training to staff as required. The Centre for Eye Health (at University of New South Wales) and the OES stated they could screen the photographic images.

There were no reports of primary health care centres within Greater Western AHS or GPs owning or using retinal cameras for screening.

#### Referral pathways

The eye health care pathways for referral to secondary and tertiary eye health services are different in each location, and mostly appear to function well at the local level where secondary and tertiary eye health services are available. Not all primary health care providers were aware which ophthalmologists would bulk bill in locations where no public clinics were available. The referral choice between optometry and ophthalmology where both are available appears to be based on availability and cultural specificity of services rather than any clinic delineation.

### 5.3.2 Secondary Eyecare

#### Regional Eye Health Care Co-ordinators

There are 4 Regional Eye Health Co-ordinator (REHC) positions in the Greater Western region, funded by OATSIH, and based at the ACCHS in Walgett, Wellington, Bourke, and Broken Hill. In Walgett and Wellington the REHC co-ordinate and implement outreach optometry services and facilitate spectacle delivery, in partnership with ICEE, as well as facilitating referrals to ophthalmology. In Bourke the REHC works with the OES to ensure increased accessibility to the OES clinics for Aboriginal people in Bourke. In Broken Hill this position has been incorporated into a number of Chronic Care Health Worker positions, so that all health care workers are involved in eye health screening and co-ordination. The REHC positions are co-ordinating eye health services for Aboriginal people in their region. OATSIH provides funding and regular training to the REHC positions.

#### Optometry Outreach Services

For the purpose of this review, only outreach and Aboriginal-specific optometry clinics have been considered, assuming that only a small proportion of Aboriginal people access private optometry practices.

The outreach optometry clinics co-ordinated through the ACCHS in Walgett and Wellington are servicing many locations, and seeing significant numbers of Aboriginal

people. The REHC in these locations work tirelessly in the delivery of these services, and are very appreciative of the supportive partnership with ICEE. The frequency of these clinics, and the reliability that they will occur when planned, is somewhat limited by the availability of optometrists, VOS criteria, and the capacity of the REHC position to expand services (they are working at full capacity). The outreach optometrists refer clients for ophthalmology review when required. These follow-up appointments are usually arranged by the REHC. There are no figures available on the number for referrals generated from optometry clinics, however the number may be affected by:

- Some outreach optometry clinics (from Wellington ACCHS) do not have access to a portable slit lamp, which may make the screening for eye disease difficult.
- Some referrals to ophthalmology from Walgett and the north east corner of Greater Western AHS go to the Eye Clinic based at Moree ACCHS.
- From Wellington, there are no public ophthalmology clinics available in the south eastern corner of Greater Western AHS. The REHC refers most clients (including those in Bathurst) to a private ophthalmologist in Dubbo who is known to bulk bill Aboriginal clients.

The OES model integrates optometry and ophthalmology services, where the services are delivered on the same day or sequenced. This appears to increase the efficiency of the service, ensures the ophthalmologist receives only referrals requiring ophthalmology review (rather than screening), enables the patient to have all eyecare needs managed simultaneously, and prevents patients being lost to ophthalmology follow-up.

There is a notable lack of outreach optometry services available to Aboriginal people in Broken Hill. ICEE is negotiating with Maari Ma with the view to establish a 6-weekly service to Broken Hill in 2011.

### Public ophthalmology clinics

There are three main models of public ophthalmology clinics occurring in the Greater Western region- those of the OES, Broken Hill Health Service, and Maari Ma with OES.

The OES provides a comprehensive eye health service, and supports clients across the eye health care pathway including tertiary services. The OES has strong links with the ACCHS, Health Service, and Outback Division GPs in the towns where they work, and works closely with Aboriginal Health Workers and Aboriginal Liaison Officers to increase uptake for

Aboriginal people. Proportional uptake of their services by Aboriginal people has decreased over the last three years. Waiting list data on the outpatient clinics were not available, but reports at the local level suggest that an increased frequency of the clinics would be indicated in some locations.

The Broken Hill Health Service outpatient specialist clinic provides free ophthalmology services, and is held on a regular basis. Details on patient throughput and the proportional uptake by Aboriginal people were not provided for the review. The clinic has an extremely long waiting list, with clients referred to the ophthalmologist waiting over 12 months for an appointment. (This effectively doubles the waiting list time for surgery, where a person referred to an ophthalmologist for a condition requiring surgery first waits for 12 months to see the ophthalmologist, and then waits for up to a further 12 months for surgery). Maari Ma arrange transport and liaison to Aboriginal people to attend the clinic at Broken Hill, however in general the Aboriginal Liaison Officers in Broken Hill are not overly involved in the ophthalmology clinics.

The Maari Ma clinics implemented in conjunction with the OES are comprehensive eye health clinics, and have significantly increased the number of people seen in Maari Ma clinics in 2010. Maari Ma report they are hoping to run these clinics two times per year from 2011. The registrar only clinics appear to have somewhat less uptake, and are limited by what the registrar is able to do independently.

### Private ophthalmology clinics

Private ophthalmology clinics are available within Greater Western AHS as described in 4.4.1. These are generally held in the rooms of the ophthalmologist, and have no specific links with the ACCHS or Greater Western AHS. While some of the private ophthalmologists will bulk-bill all referrals from an ACCHS or some referrals on a case by case basis, this information is not widely advertised or known. Data on the proportion of Aboriginal people seen in these clinics is not available, but general reports are that it is quite low, and not equal to the proportion of Aboriginal residents in those locations. Other than some clinics bulk billing, there does not appear to be any other specific strategies used by the private clinics to increase the cultural competence of their services for Aboriginal people.

### 5.3.3 Tertiary Eyecare

Tertiary (surgical) ophthalmology services are available in seven locations in Greater Western region, as described in Section 5.2.1. Surgical services are demand driven, and the



supply of surgery responds to fluctuations in demand.

The uptake of surgery for Aboriginal people is low, as demonstrated in Section 5.2.3, reflecting that demand is low. The demand observed for Aboriginal people may be masked by issues at the secondary eyecare level highlighted above (long waiting lists at public clinics, or lack of public clinics in some areas).

For ophthalmology surgery, supply by Greater Western AHS is meeting current demand within waiting list objectives. Improved access to secondary ophthalmology services in Wilcannia, Menindee, and Cobar in the last 12 months is likely to cause increased demand for surgical services, which will require increased surgery numbers to meet demand within waiting list criteria.

While the system of surgical planning allows for flexibility in response to demand, a number of ophthalmologists who provide surgery within Greater Western AHS facilities report that they encounter significant challenges in responding to requests at short notice to cancel or increase surgical sessions.

The OES implements the surgical service in Bourke, in partnership with the Greater Western AHS. There is no formal agreement between OES and the Greater Western AHS in terms of the implementation of this service, and it is implemented through co-operation between OES, Bourke Health Service, and Greater Western AHS.

In relation to strategies employed specifically to address uptake for Aboriginal people, the OES provides significant case management and support to clients, as well as working closely with both the AMS and Greater Western AHS Aboriginal Liaison Officers in supporting Aboriginal people to access surgery in Bourke. There are no other co-ordinated case management and support systems for Aboriginal people accessing surgery in the other Greater Western AHS locations.

#### 5.3.4 General

##### Co-ordination

Eye health services in Greater Western AHS do not have a central focus point for co-ordination, collaboration, and oversight of eye health care services at all levels. There are no ophthalmology departments in the region, and no ophthalmology or eye health service plans for the region.

At the local level, there are varied experiences of

co-ordination between key services providers in the Greater Western region locations. There are some examples of effective co-ordination between Greater Western AHS, OES, ACCHS, ICEE, GP Divisions, and private ophthalmologists and optometrists that appear to deliver more appropriate services for Aboriginal people. In other locations limited communication and co-ordination between key eye health providers seems to be limit potential partnerships and developments.

##### Formal collaboration

There are few formally developed arrangements between the key eye health providers in the Greater Western region. Notably, there is no formal agreement between the OES (SESIAHS) and Greater Western AHS regarding the delivery of public eye clinics and ophthalmology surgery in Bourke, all held in Greater Western AHS facilities. The following formal collaborations/working agreements are in place:

- Between Greater Western AHS and individual ACCHS in the region
- Between Greater Western AHS and private ophthalmologists working as VMOs
- Between the OES and Bourke AMS
- Between ICEE and AHMRC in relation to outreach optometry services
- Between ACCHS and OATSIH in relation to REHC positions and outreach eye services.

##### Data management

There are limited data available on secondary eyecare services delivered in the Greater Western region. There are a number of key providers all using different data systems, and independently monitoring their services. There is no system whereby this information can be combined to provide an overall picture of access to secondary ophthalmology services in the region. Likewise, there are no clear indicators or objectives developed for secondary ophthalmology services in the region. Greater Western AHS inpatient data for inpatient tertiary ophthalmology services is more readily available.

Similarly, management of information regarding individual clients is not always well shared between the different eye health service providers. Files are held by the individual providers, and there is varied level of reporting and feedback across the providers, which could be improved in some cases.

## **Cultural competence**

The ACCHS are actively involved in delivering primary eye health services and secondary eye health services in partnership with ICEE and OES, and this brings culturally competent eye health services to Aboriginal people in the Greater Western region. ICEE conducts cultural competence training for ICEE optometrists and other staff.

The Aboriginal health workforce of the Greater Western AHS are not routinely involved in eye health services at the primary level, or in liaising to support Aboriginal people access secondary and tertiary services as appropriate. There are notable exceptions in some locations which greatly enhances the cultural competence of eye health services delivered. The key service providers have made some achievements in improving the cultural competence of their services, particularly the OES and ICEE, however this is not the case at the private ophthalmology level.

## Discussion

Through this Review of Eye Health Services for Aboriginal People in the GWAHS Region, six main areas of issue have been identified, which will be discussed in turn, and form the basis for the recommendations. These are:

1. Primary eye health service delivery
2. Secondary eye health service delivery
3. Tertiary eye health service delivery
4. Co-ordination and collaboration of eye health services in the region
5. Cultural competence of eye health services in the region
6. Monitoring and evaluation of eye health services in the region

A significant number of key stakeholders were consulted for this review, however the list is not exhaustive, and as such this review only provides a snap shot of available data and information. In particular, service delivery at the primary health care level was not thoroughly reviewed, and more investigation at this level is recommended. Similarly, observational visits were not conducted to all locations in Greater Western AHS (particularly locations in the southern area), and therefore information from these locations may be lacking. Pragmatic issues and time constraints prevented further consultation than that reported.

### 6.1 Primary eye health services

#### Summary of findings

- Primary eye health care services are available to the Aboriginal people of Greater Western AHS through ACCHS, Health Service facilities, GPs, and RFDS.
- The degree to which eye health screening and referral occurs at the primary health care level was not comprehensively explored as part of this review.
- In some regions eye health care is well integrated into primary health care and chronic care management for Aboriginal people, and regular eye health screening for Aboriginal people with diabetes with subsequent referral is occurring. This is not consistent across the region.

- In some cases, primary health care professionals are liaising with their clients to assist in navigating through the eye health care pathway, and ensure access to secondary and tertiary services.
- Although some ACCHS have digital retinal cameras, there are no instances where retinal photography is being used to routinely screen for diabetic retinopathy at the primary health care level.

#### Arising issues

Ninety-four percent of vision loss in Australian Indigenous people is preventable or treatable,<sup>11</sup> and primary health care services have a significant role in the promotion, prevention, screening, and referral of eye disease, to address this issue. The NIEHS found that some of the barriers for Aboriginal seeking eyecare for an existing problem were related to Aboriginal people accepting the problem, not being aware of services, or deciding not to access services.<sup>28</sup> Routinely incorporating screening and referral for eye disease at the primary health care level, and supporting clients to access secondary and tertiary level care as appropriate, will assist in addressing some of these barriers.

The eye health care pathway has a number of key players, and negotiating the pathway can be challenging. Improving liaison, support, and co-ordination for clients from the primary health care level would ensure clients navigate through the pathway appropriately, and access secondary and tertiary services as required.

Diabetic retinopathy screening using retinal photography at the primary health care level can improve access to screening for Aboriginal clients, and reduce the burden on other services, such as outpatient departments<sup>41</sup> (and presumably secondary eye health services). Taylor (2010)<sup>21</sup> suggests that sustainable funding sources are required for successfully introducing retinal photography systems.

## Recommendations

### 1. Enhance eye health screening, referral, co-ordination and promotion at the primary health care level.

#### a. Deliver eye health promotion and education regarding prevention and management of eye disease to Aboriginal communities within the region.

Education regarding prevention and management of eye diseases (including when and how to seek care) could improve eye health care in Aboriginal populations, and it is recommended that eye health promotion is delivered to Aboriginal communities where appropriate.

#### b. Encourage and develop strategies that enhance the inclusion of eye health screening and referral at the primary health care level

Primary health care is the frontline for eye health services, and all strategies that increase the degree to which eye health screening is incorporated into the primary health care model, and that ensures appropriate referral and follow-up to secondary and tertiary eye health services, will improve eye health services delivery to Aboriginal people in the region.

#### c. Incorporate management of eye health into current chronic care management strategies where possible, particularly those for diabetes.

Further investigation of the degree to which this is currently occurring is recommended, as this was the not the major focus of this review. This would help to identify ways in which eye health care can be better incorporated into chronic care management strategies at the primary health care level.

#### d. Incorporate retinal photography screening for diabetic retinopathy into primary health care facilities.

There are no examples of retinal photography being used for diabetic retinopathy screening in the Greater Western region, and it is recommended that opportunities to incorporate retinal photography into primary health care practices are explored. This could occur through ACCHS and community health centres where diabetic programs are implemented. Issues to

consider in the development of retinal photography are:

- The availability and locations of cameras and the need for additional cameras
- Workforce training will be required, and ICEE has stated they would be available to provide this training. (This would also be an opportunity to increase awareness of eye health issues in general for the primary health care workforce).
- There would need to be a co-ordinated approach to gathering photos for review and ensuring appropriate follow-up is provided to clients. The REHC, or other identified staff within the primary health care clinic, could co-ordinate this aspect.
- The photos would need to be reviewed by an appropriately trained person. The OES or the Centre for Eye Health could be available to review photographs for diabetic retinopathy, and advise on the follow-up required, and that this process could be conducted via email.

## 6.2 Secondary eye health services

### Summary of findings

- Outreach optometry services implemented by ACCHS with ICEE are delivered in 36 locations in the Greater Western region.
- REHC positions based in Wellington and Walgett are actively involved in coordinating outreach optometry services for Aboriginal people. The REHC position in Bourke co-ordinates services with the OES, while in Broken Hill the position has been incorporated into chronic care positions.
- The OES provides comprehensive ophthalmology services (optometry, eye health nursing, ophthalmology, and surgery) for Bourke, Brewarrina, Walgett, Lightning Ridge, and Cobar, as well as in Menindee and Wilcannia in conjunction with Maari Ma Broken Hill.
- Broken Hill Base Hospital delivers a regular public ophthalmology clinic, which delivers free ophthalmology secondary services. The clinic has a waiting list of over one year.
- Maari Ma delivers registrar only ophthalmology clinics in a number of locations in the Broken Hill region, and comprehensive clinics in Wilcannia and Menindee in conjunction with the OES.
- Secondary eye health services are not consistently available to Aboriginal people in the Greater Western AHS Region. In particular, there is a lack of public ophthalmology clinics in areas with high numbers of Aboriginal people.

- There is a relationship between the availability of free public ophthalmology clinics and the rates of access to tertiary eye health services for Aboriginal people in the Greater Western AHS region.

## Arising issues

Outreach specialist services appear to be an appropriate way to deliver optometry and ophthalmology services to rural and remote Aboriginal residents in the Greater Western region. In general, outreach services overcome some of the barriers related to distance, communication, and cultural appropriateness of services and enables an increase in the number of consultations<sup>28</sup>. This appears to be the case with both the optometry outreach services by ACCHS/ICEE, and also the outreach services of the OES. The comprehensive approach of the OES, which brings optometry, ophthalmology, and access to surgery together under the one service, appears to improve efficiency and effectiveness of the service. Expansion of outreach services in the region, with a strategic approach to identifying appropriate locations, could improve uptake of eye health services by Aboriginal people in the Greater Western region.

The NIEHS showed that the main reasons stated by Aboriginal people for not attending eye services when they had an eye problem were related to cost, availability and accessibility of services, perceptions around the severity of the problem, and having other priorities.<sup>30</sup> Twenty-four percent of respondents reported that lack of availability of the service, or transport and distance to the services, were the reasons they had not sought care, and a further 7% reported the long waiting list as the barrier to attending services. Improving availability and frequency of free services at a local level should greatly improve accessibility to services by Aboriginal people in Greater Western region.

In the NIEHS 21% of Aboriginal people who had not sought care for an existing eye problem reported cost of the service as the barrier to attending care.<sup>30</sup> Providing eye health services at the primary, secondary, and tertiary level to Aboriginal people free of charge will improve uptake of services by Aboriginal people. The current gap in affordable eye health services in Greater Western AHS is at the secondary level, where free public ophthalmology clinics are not available in many locations within Greater Western AHS.

Secondary services are available in many locations through private ophthalmology clinics, and while data is not available, ophthalmologists anecdotally report limited uptake by Aboriginal people. The reasons for this may

include cost, as information regarding which practices will bulk bill is not widely advertised or always consistent, and also cultural appropriateness of the service, where Aboriginal people may not feel comfortable in the private clinic environment. A number of reports indicate that some Aboriginal people have experienced racist attitudes in negotiating appointments in some private clinics.

Secondary eye health services are not consistently available to Aboriginal people in Greater Western region. Optometry clinics are widely available throughout the region, but are notably absent in Broken Hill (although there are plans to address this in 2011 between Maari Ma and ICEE). Of significant note is the absence of public ophthalmology clinics and services in a number of areas within the Greater Western region with high numbers of Aboriginal people. Public ophthalmology clinics have generally been well established in locations with a high proportion of Aboriginal people — four of the five LGAs in Greater Western region with a proportion of Aboriginal residents greater than 25% have public ophthalmology services (Brewarrina, Central Darling, Bourke, Walgett, but not Coonamble). However, LGAs with larger absolute numbers of Aboriginal residents do not have public ophthalmology clinics available — of the ten LGAs in Greater Western region with greater than 1000 Aboriginal residents, only 3 have public ophthalmology clinics established (Walgett, Broken Hill, and Brewarrina — see Table 8). The limited availability of public ophthalmology services at a local level impacts the access to tertiary eye health services by Aboriginal residents of Greater Western region (as demonstrated in Section 5.2.3).

The specific areas lacking access to public ophthalmology services can be grouped into three categories:

- Regional Centres, which have greater than 1000 Aboriginal residents, have public ophthalmology surgery available at the regional hospital, and have private ophthalmologists running clinics within the towns. These towns are Dubbo, Bathurst, Orange, and Parkes (in the case of Parkes, surgery is available close by in Forbes). To address availability in these areas, public clinics could be established through the hospital, ACCHS, or through private –public partnerships with local ophthalmologists. Dubbo is a main priority in improving availability to public clinics- with the feeder populations of Narromine, Gilgandra, and Wellington, the total Aboriginal populations that could access this service is 6750 (30% of the total Aboriginal population in Greater Western AHS region).

- (ii) Towns without outreach ophthalmology services that are considerable distances (> 100 km) from existing or potential services and have considerable Aboriginal populations (> 500 people). These towns are Coonamble, Condobolin, Cowra, Coonabarabran, and Mudgee. To address availability in these towns outreach clinics could be developed.
- (iii) Towns that are less than 100km from existing/potential services but have considerable Aboriginal populations are Wellington, Narromine, Gilgandra and Wentworth. Aboriginal residents from these first three towns could access services in Dubbo if they were developed, while residents in Wentworth can access services in Mildura Victoria.

## Recommendations

### 2. Improve and further develop secondary eye health services in the region:

#### a. The ACCHS/ICEE continue to deliver outreach optometry services in current locations, and increase frequency and reliability of service where possible.

The outreach optometry clinics through ACCHS in partnership with ICEE should be commended for implementing an effective optometry outreach service which is culturally specific for Aboriginal people. The regularity and reliability of this service could be improved by:

- Providing additional support to the REHC in Wellington, as has occurred in Walgett, as the number of clinics co-ordinated from Wellington is at maximum capacity for a single position.
- Increased availability of optometry personnel to staff the clinics. The options here would be:
- ICEE are funded to employ one full time optometrist available for outreach clinic
- Increase co-ordination with regional optometrists for staffing outreach clinics, and using VOS funding where available.
- Review equipment needs of the ACCHS. In particular, Wellington ACHS could benefit from a portable slit lamp.

#### b. Develop outreach optometry services for Aboriginal people in the Broken Hill region.

Outreach optometry clinics in Broken Hill are not currently available. It is recommended that optometry

clinics for Aboriginal people are established in Broken Hill, either through Maari Ma, or through an integrated service at the Broken Hill Base Hospital ophthalmology clinic.

#### c. The OES continues to deliver outreach ophthalmology services in the current locations, always seeking to increase accessibility for Aboriginal people to their services, and possibilities for expansion to new locations is explored.

The OES should be commended for a high level of service delivery, and continued to be supported for implementing secondary eye health services in the current locations (Bourke, Brewarrina, Walgett, Lightning Ridge, Cobar, Wilcannia and Menindee). The frequency of OES clinics, and the strategies employed to increase uptake by Aboriginal people, should be frequently reviewed to ensure appropriate availability and accessibility of the service for Aboriginal people.

#### d. The REHC in Wellington and Walgett are continued to be supported in delivering outreach optometry services, and the positions in Bourke and Broken Hill are reviewed to ensure maximum efficiency and effectiveness.

The REHC positions in Walgett and Wellington should be commended for working extremely effectively in co-ordinating outreach optometry clinics, and linking these services with primary health care, and secondary and tertiary ophthalmology services. The Bourke REHC position has been recently re-filled with a revised job description. It is recommended that Maari Ma in Broken Hill reconsider the incorporation of the REHC position into their general chronic care program, in order to maintain an active and visible focus and co-ordination for eye health services in their region. The REHC positions should be viewed as Aboriginal Eye Health Co-ordinators, in recognising the need for a broader regional eye health services co-ordination in the region.

#### e. The service model and efficiency of the public ophthalmology clinic at Broken Hill Base Hospital is reviewed and strategies to improve the efficiency of the service (to decrease the waiting list) are implemented.

The availability of a public eye clinic at Broken Hill Base Hospital is extremely important, and those involved in

the maintenance and delivery of this service should be commended. Unfortunately the clinic has an extremely long waiting list. Suggestions on improving the efficiency of the clinic included:

- Create a dedicated eye health services co-ordinator for the Broken Hill region, whose role includes co-ordinating the clinic, outreach, tertiary services liaison, and management of equipment.
- Increasing the frequency of the clinic.
- Integrating the clinic with optometry services, to increase screening, and address refractive error.
- Ensuring a dedicated eye health nurse is attached to the clinic. Since this year the clinic has had a nurse working on the clinic; however she is not always fully available for the eye clinic. (The co-ordinator position could also fill this eye health nursing role).

#### **f. Establish public ophthalmology clinics at Dubbo, Bathurst, Orange, and Parkes.**

To address availability in these areas, public clinics could be established through the hospital, ACCHS, or through private — public partnerships with local ophthalmologists. Of these options, the public-private partnerships are likely to be the most cost-efficient, as these towns already have established and equipped private ophthalmology clinics. In Dubbo, a number of key stakeholders are open to exploring opportunities related to establishing a public eye clinic for Aboriginal people, and have considered the following issues:

- As a newly established clinic for Aboriginal people, the clinic may be eligible for MSOAP funding, which would cover costs of visiting ophthalmologists and other staff.
- An existing private ophthalmology clinic could be available for the service, however additional equipment may be required, and negotiations to ensure that the costs of the clinic were cost neutral for the practice would have to be considered.
- The clinic could possibly be established as an integrated service with optometry and ophthalmology services, however all optometrists in Dubbo would need to have equal opportunity to be involved.
- The OES could assist in the co-ordination of the clinic, and provide an eye health nurse or orthoptist for assisting at the clinic. The OES also can provide links to available ophthalmologists to staff the clinic.
- The REHC from Wellington could assist in the

co-ordination, liaison, and implementation of the clinic, to ensure the clinic is appropriate, available, and accessible for Aboriginal people.

- The Aboriginal health workforce of Greater Western AHS could also be involved in running the clinic, to assist in liaison and co-ordination for Aboriginal people.
- Strong links with primary health care services in Narromine, Wellington, and Gilgandra should be established to ensure the clinic was equally accessible to Aboriginal residents from these locations who would feed into the clinic.

#### **g. Establish outreach secondary ophthalmology services in Coonamble, Condobolin, Cowra, Coonabarabran, and Mudgee.**

Establish outreach ophthalmology clinics for the towns of Coonamble, Condobolin, Cowra, Coonabarabran, and Mudgee. Establishing clinics in the model of the OES, or considering alternative solution such as an eye health services outreach bus, could be considered as possible options, both of which would require considerable funds in establishing and maintaining the services.

## **6.3 Tertiary eye health services**

### **Summary of findings**

- Tertiary ophthalmology services are available in eight locations in Greater Western AHS
- Tertiary services are demand driven, and the supply of surgery by Greater Western AHS responds to fluctuations in demand, to ensure all people access surgery within the 12 month waiting list benchmark.
- While tertiary services are available and affordable, they are underutilised by Aboriginal people in the region, which is related to the limited availability of accessible secondary services in some areas.

### **Arising issues**

Transport, distance, and cost are significant barriers to Aboriginal people in accessing eye health services,<sup>28</sup> so it is important to maintain affordable tertiary services closer to where Aboriginal people live. Transferring to large towns or cities for surgical services can be challenging and overwhelming for Aboriginal people.<sup>33</sup> The current geographical distribution and availability of tertiary services appears to be appropriate, and do not appear to require expansion. It is important to maintain the availability of ophthalmology surgical services in the current locations, and most particularly the services in Bourke and Broken Hill, which

enhance the accessibility of surgical services for more remote Aboriginal people in those areas.

## Recommendations

### 3. Maintain availability of tertiary ophthalmology services in current locations, and plan for increased demand.

#### a. Maintain the availability of tertiary eye health services in existing locations.

Tertiary eye health services are available in appropriate locations in the GWAHS region, and are supplied according to demand within waiting list benchmarks. It is recommended to maintain the availability of surgery in all these locations.

#### b. Plan for an increased demand for tertiary eye health services should the availability of secondary eye health services be improved

If the availability of secondary eye health services is improved, then an increased demand for tertiary ophthalmology services should be expected and planned for. This has been demonstrated by the development of outreach services in Cobar by the OES, which has resulted in an increased demand for surgery at Bourke.

## 6.4 Co-ordination and collaboration

### Summary of findings

- There is no comprehensive service delivery plan for eye health services in the Greater Western AHS.
- The key service providers implement eye health services in the region from their organisational base.
- Some co-ordination between providers exists for collaborative service delivery, particularly between OES and Greater Western AHS, ACCHS and ICEE, and ACCHS and OES.
- There is no regional co-ordination of eye health services in the Greater Western region, or a structure which encourages comprehensive collaboration between all the service providers.

### Arising issues

A strategic vision or plan for eye health services in the region is lacking, and eye health services co-ordination across the pathway is not planned for. Components of the pathway are delivered by various service providers, but

planning and co-ordination of all eye health services and their providers does not occur.

Co-ordination and collaboration between key service providers is important in the delivery of eye health services, especially those for Aboriginal people.<sup>19</sup> Effective eye health service co-ordination requires co-ordination between optometrists and ophthalmologists, primary health care providers and visiting teams, and between secondary and tertiary service providers. There is currently limited co-ordination between eye health service providers in the Greater Western region.

Although the REHC have the title of regional eye health co-ordinators, in practice they function as Aboriginal Eye Health Co-ordinators, co-ordinating services for Aboriginal clients from the ACCHS base, focussing on delivering and linking primary and secondary eye health services, and referring to ophthalmology secondary and tertiary services as required. The issues related to limited co-ordination of eye health services at a regional level could be addressed by developing regional eye health service co-ordinator positions, which take a broad overview of eye health services development, co-ordination and implementation.

Through speaking with key service providers, it became evident that a number of opportunities exist that could be realised through improved collaboration. Firstly, collaboration between key service providers (GWAHS, ACCHS, OES, and ICEE) could result in the implementation of retinal photography screening in the region. Secondly, a similar collaboration (between GWAHS, ACCHS, OES, and private ophthalmologists) could see the development of public-private partnerships in key locations (Dubbo in particular) to establish public ophthalmology clinics for Aboriginal people. Key stakeholders are willing to co-ordinate and are committed to improving eye health services, but structured opportunities for co-ordination and collaboration are currently limited. An eye health services partnership or working group committee could create a forum whereby such opportunities could be explored and developed.

The lack of formal agreements between some key service providers can create ambiguity in relation to the working relationship and partnership. This is particularly the case between the OES and the Greater Western AHS, and it is recommended that a formal working agreement is developed.



## Recommendations

### 4. Improve the co-ordination and collaboration of eye health services and eye care stakeholders in the region

#### a. Develop an eye health services strategic plan or service delivery plan for the Greater Western AHS.

An eye health services strategic plan or service delivery plan is required for the region, and should be developed for eye health services in general, while maintaining a specific focus on ensuring the services are available, accessible and appropriate for Aboriginal people. Recruiting a consultant who specialises in eye health services to develop this strategy could ensure that it is developed in a timely fashion, as it is not immediately clear who within Greater Western AHS has the expertise or time available to develop such a strategy.

#### b. Establish eye health co-ordinator positions in Broken Hill and Dubbo.

These positions would be responsible for:

- Establishing links with all primary health care providers in the Greater Western region to improve promotion, screening, and referral of eye health disease at the primary health care level.
- Facilitating the development of outreach or regional based secondary eye clinics in key locations, or maintaining current clinics, to ensure efficient and effective services
- Case managing ophthalmology surgery in the region, particularly for Aboriginal people.
- Focus on improving access to eye health services for Aboriginal people in the region.
- Facilitate an Eye Health Services Co-ordination Group

The appropriate placement of these positions within the health reform restructuring would need to be considered.

#### c. Establish an eye health service providers working group or partnership committee

Establish an eye health service providers working group or committee where key players (public, private, NGO) gather to discuss and address key issues, with the aim to improve eye health service delivery in the region, particularly for Aboriginal people.

#### d. Develop partnership or working agreements between key service providers in the region.

In particular, a working agreement between Greater Western AHS and the OES would clarify the nature of their working partnership. Furthermore, an agreement between all key service providers in developing a strategy to improve eye health services for Aboriginal people in the region could improve collaboration through the process of developing and implementing the strategy.

## 6.5 Cultural competence

### Summary of findings

- The ACCHS are actively involved in delivering primary eye health services and secondary eye health services in partnership with ICEE and OES, and this brings culturally competent eye health services to Aboriginal people in the Greater Western region.
- The Aboriginal health workforce of the Greater Western AHS are not routinely involved in eye health services at the primary level, or in liaising to support Aboriginal people access secondary and tertiary services as appropriate. There are notable exceptions in some locations which greatly enhances the cultural competence of eye health services delivered.
- The key service providers have made some achievements in improving the cultural competence of their services, particularly the OES, however this is not overtly the case at the private ophthalmology level.

### Arising issues

Services need to be available for Aboriginal people but also need to be appropriate, and culturally competent services are likely to have more uptake and access by Aboriginal people, and better impact on health. A culturally competent health care system is one that 'acknowledges and incorporates the importance of culture, assessment of cross-cultural relations, vigilance towards the dynamics that result from cultural differences, expansion of cultural knowledge, and adaptation of services to meet culturally unique needs'.<sup>31</sup>

In relation to eye health services available in the Greater Western region, the services delivered through the ACCHS, or in partnership with the ACCHS, are likely to be the most culturally competent services delivered. The OES works in close partnership with both the ACCHS and the Greater Western AHS Aboriginal workforce in delivering outreach

eye clinics and surgery, which enhances the cultural competence of this service, and increases uptake of service, however the figures for the OES show a decreasing uptake by Aboriginal people proportionally, and the OES should consider why this pattern is emerging.

Eye health services delivered through Greater Western AHS have not particularly addressed the cultural competence to any greater degree than other Greater Western AHS mainstream services, and the Greater Western AHS Aboriginal workforce do not appear to be overly involved in supporting Aboriginal people through the eye health pathway. Private ophthalmology clinics do not appear to have actively addressed cultural competence issues within their services, other than the few clinics who have agreed to bulk bill referrals from the ACCHS. Actively considering and improving the cultural competence of eye health services within the Greater Western region could increase the uptake for Aboriginal people in the region.

## Recommendation

### 5. Improve the cultural competence of eye health service delivery in the region

A number of strategies could improve cultural competence of services, as recommended by Hayman et al (2009)<sup>34</sup> are:

#### a. Engage Aboriginal staff in the delivery of eye health services where available.

This would include liaising with and engaging the Greater Western AHS Aboriginal health workforce, and working closely with the REHC and the ACCHS in delivery of services.

#### b. Provide case management to Aboriginal people to assist them in negotiating the eye health services pathway.

This would include case managing access, particularly at the secondary and tertiary level, and addressing identified barriers to uptake of service for individual clients which may include transport, accommodation, associated costs, and fear.

#### c. Develop culturally appropriate environments for delivering services.

This is particularly an issue for outreach clinics and the potential private — public partnership clinics that could be held in private ophthalmology clinics. Ideas include having culturally appropriate health posters or artefacts at the clinic, or streaming Aboriginal radio stations through the waiting room.

#### d. Ensure all staff involved in eye health services delivery have completed cultural competency training. This includes ophthalmologists and optometrists, eye health nurses and orthoptists, and administration staff including private practice receptionists.

#### e. Develop a strategy for engaging and informing Aboriginal communities about services available.

This strategy through ACCHS, community groups, Aboriginal health workforce, land councils, local media, and any other appropriate forums.

#### f. Promote inter-sectoral collaboration

Improved co-ordination between ACCHS, Greater Western AHS, OES, ICEE and private practitioners would enable them to work together to improve accessibility to eye health services for Aboriginal people.

## 6.6 Monitoring and evaluation

### Summary of findings

- Key eye health service providers monitor their services using different monitoring and evaluation tools, and varied reporting strategies.
- The data available cannot be combined to give an accurate picture of primary and secondary eye health services across the region, due to variations in data collated.
- There are no systems in place to monitor and evaluate eye health services delivery for primary or secondary level services across the region.
- Tertiary level data is available from Greater Western AHS, which is routinely monitored to ensure waiting list benchmarks for surgery are being met, but is not routinely analysed to ensure demand and supply is equitable.

## Arising issues

The lack of a routine data collection system for primary and secondary eye health services in the region renders it difficult to 'measure, monitor, and report on our joint efforts, in accordance with benchmarks and targets, to ensure that we are progressively realising our shared ambitions',<sup>6</sup> in keeping with the Close the Gap commitment. It is not possible to develop a clear picture of eye health service delivery to ensure that demand and supply is equitable under the current system.

## Recommendation

### **6. Develop a system to monitor and evaluate eye health services in the region, at all levels.**

#### **a. Develop a monitoring and evaluation system for eye health services.**

It is recommended that a system be developed whereby eye health services at the primary, secondary and tertiary level can be monitored and evaluated collaboratively by key service providers, to achieve a regional perspective of eye health service delivery and gaps in accessibility and uptake. The establishment of an eye health services co-ordinating group, and the development of eye health service co-ordinator roles in Dubbo and Broken Hill, could assist in the collaboration required to develop a shared eye health services minimum data set, and monitoring and evaluation system.

#### **b. Align a monitoring and evaluation system with a regional eye health services strategic plan.**

The strategic plan for eye health services (Recommendation 4a) should include how to develop the monitoring and evaluation system, and consider what elements should be included in the system, how monitoring will occur, and who is responsible for managing the system.

## 6.7 Further investigation

A number of aspects of eye health services in the Greater Western AHS region require further attention and investigation following this review, in order to develop an appropriate plan for eye health service delivery in the region. These are:

### 1. Primary health care

A full review of eye health services at the primary health care level would be recommended to inform the development of a regional strategic plan for eye health service delivery and co-ordination. In particular, the degree to which eye health is incorporated into chronic care management plans, particularly for diabetes, should be reviewed.

### 2. Trachoma

This review did not focus specifically on issues related to trachoma. The National Indigenous Eye Health Survey<sup>3</sup> identified active trachoma in NSW, however the current prevalence of trachoma in NSW is unclear.<sup>35</sup> Further work is required to determine the best surveillance methods for detecting and managing this disease, in keeping with a global commitment to the elimination of trachoma by 2020.

## Recommendations: Summary

### 1. Enhance eye health screening, referral, co-ordination and promotion at the primary health care level.

- a. Deliver eye health promotion and education regarding prevention and management of eye disease to Aboriginal communities within the region.
- b. Encourage and develop strategies that enhance the inclusion of eye health screening and referral at the primary health care level
- c. Incorporate management of eye health into current chronic care management strategies where possible, particularly those for diabetes.
- d. Incorporate retinal photography screening for diabetic retinopathy into primary health care facilities

### 2. Improve and further develop secondary eye health services in the region.

- a. The ACCHS/ICEE continue to deliver outreach optometry services in current locations, and increase frequency and reliability of service where possible.
- b. Develop outreach optometry services for Aboriginal people in the Broken Hill region.
- c. The OES continues to deliver outreach ophthalmology services in the current locations, always seeking to increase accessibility for Aboriginal people to their services, and possibilities for expansion to new locations as explored.
- d. The REHC in Wellington and Walgett are continued to be supported in delivering outreach optometry services, and the positions in Bourke and Broken Hill are reviewed to ensure maximum efficiency and effectiveness.
- e. The service model and efficiency of the public ophthalmology clinic at Broken Hill Base Hospital is

reviewed and strategies to improve the efficiency of the service (to decrease the waiting list) are implemented.

- f. Establish public ophthalmology clinics at Dubbo, Bathurst, Orange, and Parkes.
- g. Establish outreach secondary ophthalmology services in Coonamble, Condobolin, Cowra, Coonabarabran, and Mudgee.

### 3. Maintain availability of tertiary ophthalmology services in current locations, and plan for increased demand.

- a. Maintain the availability of tertiary eye health services in existing locations.
- b. Plan for an increased demand for tertiary eye health services should the availability of secondary eye health services be improved

### 4. Improve the co-ordination and collaboration of eye health services and eye care stakeholders in the region.

- a. Develop an eye health services strategic plan or service delivery plan for the Greater Western AHS.
- b. Establish eye health co-ordinator positions in Broken Hill and Dubbo.
- c. Establish an eye health service providers working group or partnership committee
- d. Develop partnership or working agreements between key service providers in the region.

## **5. Improve the cultural competence of eye health service delivery in the region.**

- a. Engage Aboriginal staff in the delivery of eye health services where available.
- b. Provide case management to Aboriginal people to assist them in negotiating the eye health services pathway.
- c. Develop culturally appropriate environments for delivering services.
- d. Ensure all staff involved in eye health services delivery have participated in cultural competency training.
- e. Develop a strategy for engaging and informing Aboriginal communities about services available.
- f. Promote inter-sectoral collaboration.

## **6. Develop a system to monitor and evaluate eye health services in the region, at all levels.**

- a. Develop a monitoring and evaluation system.
- b. Align a monitoring and evaluation system with a regional eye health services strategic plan.

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# Terms of Reference

## **Terms of Reference: The Review of Eye Health Services for Aboriginal people within the Greater Western Area Health Service Region**

### **Project description and background**

The Review of Eye Health Services within the Greater Western Area Health Service Region (the Review) has been instigated by the NSW Department of Health after consideration of the National Indigenous Eye Health Survey 2009 and the Evaluation of the Outback Eye Service (final report 15 May 2007) to describe existing availability and accessibility of eye health services for Aboriginal people within the Greater Western Area Health Service region (Greater Western region).

The Review is intended to inform policy and services for Aboriginal eye health in the Greater Western region. Access to, and utilisation of, screening and treatment services will be addressed in the Review. A limited review of epidemiology will also be conducted. Determination of prevalence of eye disease beyond this is not part of this Review.

The Review for which these Terms of Reference have been developed is anticipated to be carried out over a seven month period, and may form the basis for further investigation of the issues identified.

### **Review team and governance structure**

The *Sydney University School of Rural Health* (the School) has been engaged by the NSW Department of Health to undertake the Review. Associate Professor Tony Brown will lead the Review and be assisted by a NSW Health Public Health Officer Trainee (PHOT). Associate Professor Brown, the PHOT and other members of the School appointed by Associate Professor Tony Brown in consultation with the Manager, *Evaluation Monitoring and Reporting* (EMR), *Centre for Aboriginal Health* (CAH) constitute the Review Team and will be responsible for the day-to-day running of the project. The Review Team will develop a project plan which will include a project timeline, key deliverables/schedule of short-term action items, details of personnel to be used, resource commitments/needs and stakeholder identification, and evaluation methodology.

The Review Team will also be required to report to the Manager, EMR, against milestones, short-term action items and key deliverables.

A Project Reference Group (PRG) will be established to guide the review process and act as an advisory committee to the School. The PRG will also be responsible for making any necessary amendments to the project terms of reference in consultation with Associate Professor Tony Brown. The PRG is anticipated to include two representatives from the CAH and one representative from Greater Western AHS. The meetings should be chaired by a senior representative from the CAH and should occur every two months.

Reports will be circulated to the PRG by the Manager, EMR. Reporting should be identified in the planning process.



## Project objectives

Objective	Details
Map existing eye health services/ programs	This may include description of: <ul style="list-style-type: none"> <li>all eye health service providers servicing the area including private practitioners/services, Area Health Services, outreach programs, Aboriginal Community Controlled Health Services</li> <li>services provided by each organisation including preventative, screening, and treatment services.</li> </ul>
Collect and analyse data on existing eye health services	This may include the collection and analysis of the following: <ul style="list-style-type: none"> <li>quantitative data on the amount of preventative, screening and treatment service provision to Aboriginal people or in general where more specific data is unavailable</li> <li>catchment areas for services</li> <li>waiting times</li> <li>nearest referral for necessary services not provided by the service, who do they refer to, travel distances/times, availability of assisted transport</li> <li>qualitative data as to why certain services are not provided by particular services</li> <li>qualitative data as to whether supply is adequate to satisfy demand</li> <li>any additional value-added qualitative information</li> </ul>
Estimate accessibility of eye health services to Aboriginal communities	This may include the collection and analysis of the following: <ul style="list-style-type: none"> <li>data on eye health workforce/ Aboriginal eye health workforce including local optometrists, ophthalmologists, nurses and support staff able to assist in eye-health procedures</li> <li>opportunities for local staff development in the area of eye health</li> <li>data on service utilisation by Aboriginal people and cultural appropriateness (community consultation is not appropriate for this Review)</li> </ul>
Describe gaps in access to services	This may include the collection and analysis of the following: <ul style="list-style-type: none"> <li>data from stakeholders on gaps in access and anomalies in service provision</li> <li>collation and analysis of information collected</li> </ul>
Make recommendations for improving access to, and co-ordination of, services	This may include the identification of: <ul style="list-style-type: none"> <li>opportunities to improve services and outcomes</li> <li>areas of good service delivery and factors contributing to success</li> <li>areas of service delivery requiring improvement</li> <li>means to reduce or eliminate gaps in access</li> <li>barriers to performance improvement</li> <li>recommendations in relation to service provision</li> <li>recommendations for further review and evaluation of services</li> </ul>

## Key deliverables

Key deliverables are:

- a detailed project plan, including proposed methodology and timelines for action
- regular reporting to the PRG
- completed Aboriginal Health Impact Statement
- final report and presentation of recommendations from final report

## APPENDIX 2

# List of people consulted

### Greater Western AHS

Ms Lynne Weir, Director of Clinical Services  
Ms Lou-Anne Blunden, Director Population Health, Policy and Planning  
Ms Linda Williams, Manager Aboriginal Health  
Ms Anne Lea, Population Health, Planning and Performance  
Ms Michelle Davies, Population Health, Planning and Performance  
Dr Therese Jones, Manager Population Health  
Ms Deborah Davis, Manager StEPS Program  
Aboriginal Management Team

### Local Health Services

Ms Sally Torr, Bourke HSM  
Matthew Crawford, Diabetes Education Co-ordinator  
Andrew Carroll, Aboriginal Health Worker, Walgett  
Beth Mills, HSM Lightning Ridge  
Zoe Rose, Manager Community health, Lightning Ridge  
Maryanne Webb, Admin Co-ordinator, Lightning Ridge.  
Mr Rod Wyber Hughes, GM Western Cluster  
Dr Louis Christie, Director Medical Services, Orange.  
Mr Alby Ryan, Aboriginal Health Worker, Orange  
Outback Eye Service Ms Joanna Barton, Manager  
Ms Elyssa Brennan, Clinical Co-ordinator  
Mr Kyriacos Mavrolefteros, Optometrist  
Ms Lee Kennedy, Orthoptist

### ACCHS/AMS

Ms Judy Johnson, CEO, Bourke AMS  
Ms Christine Corby, CEO, Walgett AMS  
Ms Cathy Dyer, Manager Primary Health Programs, Maari Ma Broken Hill.  
Ms Margaret Ann Cook, Health Service Manager, Maari Ma, Broken Hill.  
Ms Angie Priest, Clinical Programs Manager, Orange AMS  
Ms Phyllis Tighe, REHC, Walgett AMS  
Ms Pauline Wicks, REHC, Wellington Aboriginal Corporation Health Service  
Mr Bruce Turner, Visiting Optometrist, Walgett

### International Centre for Eyecare Education

Professor Brian Layland, Director of Aboriginal Eye Care Programs, ICEE  
Ms Trisha Keys, Program Manager, Asia Pacific, ICEE  
Ms Colina Waddell, Project Development Officer Aboriginal Vision, ICEE

### Ophthalmologists

Dr Chris Brown, OES  
Dr Richard Rawson, OES and RFDS  
Dr Alan Bank, Dubbo  
Dr Tom Atkins, Dubbo  
Dr Ashish Agar, Dubbo and Cobar  
Dr Glen Fernando, Bathurst  
Dr KC Tang, Orange  
Dr Basil Crayford, Orange  
Dr Kwan Tang, Broken Hill

### GP Division

Dr Stuart Gordon, CEO, NSW Outback Division of General Practice

### RFDS

Mr Mike Hill, Senior Medical Officer, RFDS Broken Hill

# Aboriginal Health Impact Statement Declaration

An Aboriginal Health Impact Statement Declaration (and a completed Checklist where necessary) will accompany new policies and proposals for major health strategies and programs submitted for Executive or Ministerial approval. This will ensure that the health needs and interests of Aboriginal people have been considered, and where relevant, appropriately incorporated into health policies.

## THE ABORIGINAL HEALTH IMPACT STATEMENT DECLARATION

Title of the policy/initiative:

Please complete the Declaration below and the Checklist **if required**.

Please tick relevant boxes:

- The health\* needs and interests of Aboriginal people have been considered, and appropriately addressed in the development of this initiative.
- Appropriate engagement and collaboration with Aboriginal people has occurred in the development and implementation of this initiative.
- Completed Checklist attached.

OR

- The health\* needs and interests of Aboriginal people have been considered, in the development of this initiative.
- The Aboriginal Health Impact Statement Checklist does not require completion because there is no direct or indirect impact on Aboriginal people. (Please provide explanation.)

Head of Unit Name and Title:

Unit Name:

Area Health Service/NSW Health Branch:

Signature:  Date:  /  /

Contact phone no:  Email address:

\*For Aboriginal people, health is defined as not just the physical well-being of the individual but the social, emotional and cultural well-being of the whole community.

