



# Eye health measures for Aboriginal and Torres Strait Islander people 2024:

## New South Wales

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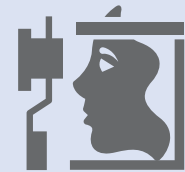
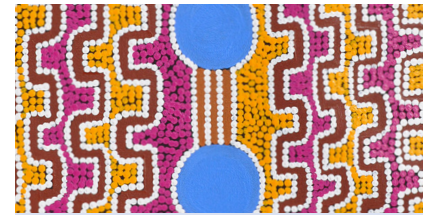
Eye health has a profound impact on a person's quality of life and ability to perform everyday activities. Lions Outback Vision notes that each year "thousands of Australians suffer from the debilitating effects of vision loss and blindness", yet 94% of vision loss is preventable or treatable ([Lions Outback Vision – Saving sight is our vision](#)).

Eye diseases and vision problems are the most common long-term health conditions reported by Aboriginal and Torres Strait Islander people affecting an estimated 45% of the population (ABS 2019). The main eye health conditions affecting Aboriginal and Torres Strait Islander people are refractive error, cataract and diabetic retinopathy. Trachoma is not commonly found in high-income countries but is endemic in some remote Aboriginal and Torres Strait Islander communities in Western Australia, South Australia and the Northern Territory ([Box 1](#)).

There is a substantial gap in access to eye health services between rural and remote areas and urban areas. Although vision impairment is similar across remoteness areas for non-Aboriginal Australians, the age adjusted prevalence of vision impairment for Aboriginal Australians is higher in *Outer regional* areas and *Very remote* areas (Health Connect Consulting 2020). Because of this variability in access to services, measures in this report are examined by remoteness within the state using The Roadmap to Close the Gap for Vision regions ([Box 2](#)) where possible. Roadmap regions were assigned to one of 3 'predominant remoteness' categories (*Major cities, Inner and outer regional, or Remote and very remote*) based on the estimated distribution of First Nations people across Remoteness Areas (Edition 3) in 2021.

Across a continuum of care, eye health services cover prevention, screening, diagnosis and treatment services. This report presents eye health and eye health service measures across the continuum of care for the Aboriginal population in New South Wales and compares this with the total national Aboriginal and Torres Strait Islander population. Comparisons with the non-Aboriginal population are also presented in the report. All rates referred to in the text or presented in figures and tables in this report are crude rates, unless specified otherwise.

This report is part of a series of reports, one for each state and territory. This report highlights programs particular to New South Wales that aim to improve access to services and outcomes.



**1 in 6**

Aboriginal people in NSW had an eye examination by an optometrist or ophthalmologist in 2022–23.



**0.1 per 1,000**

Aboriginal people in NSW were screened for diabetic retinopathy with a retinal camera in 2022–23.



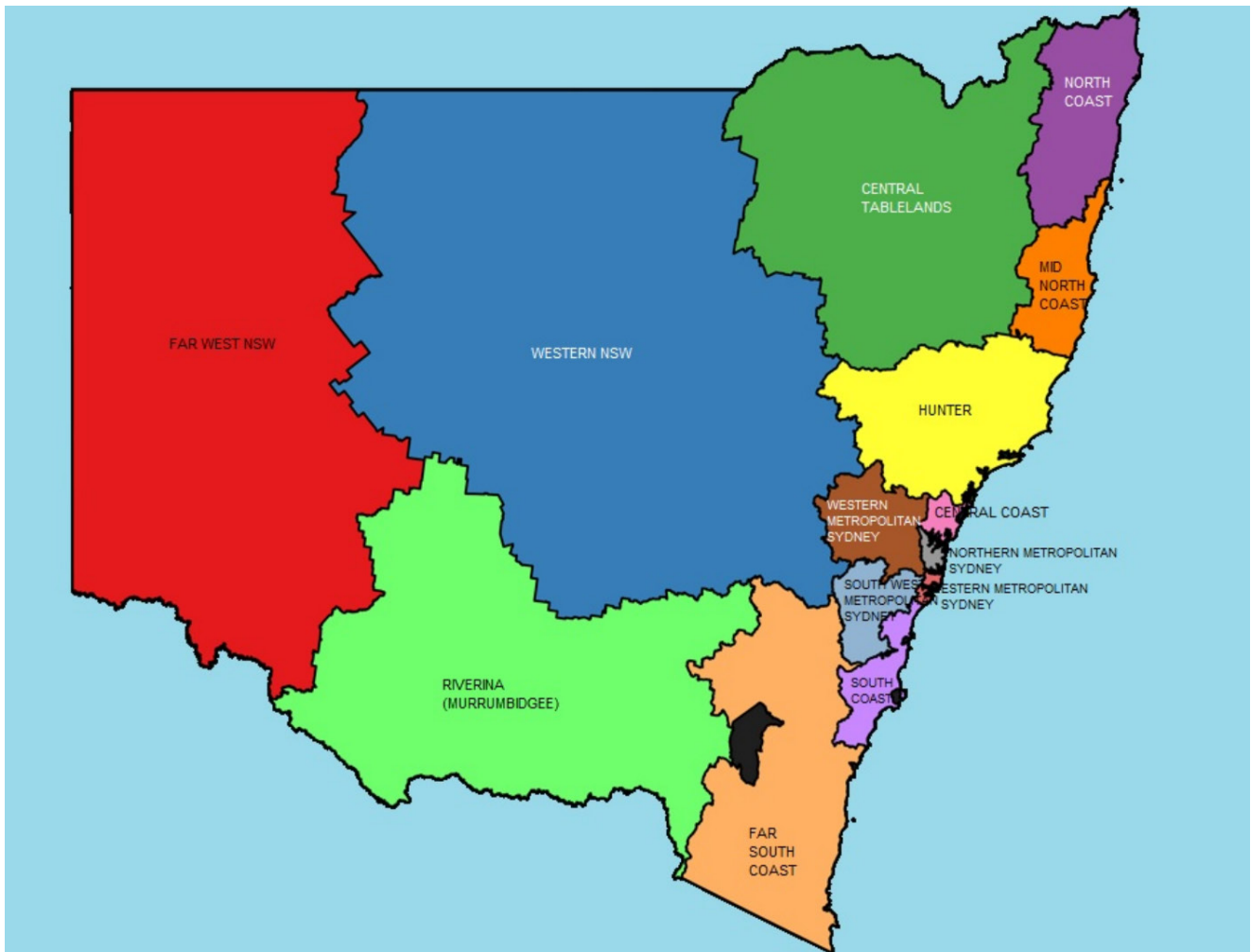
In 2021–23, **50%** of Aboriginal people's need for cataract surgery in NSW was met.

## Main Findings

- In 2018–19, in New South Wales, 95,902 (53%) Aboriginal people aged 15 years and over reported eye and sight problems. This was similar to the national Aboriginal and Torres Strait Islander proportion, 52%.
- During the 2022–23 financial year, 49,611 (16.5%) Aboriginal people in New South Wales had an eye examination by an optometrist or ophthalmologist. The comparable rate for the national Aboriginal and Torres Strait Islander population was higher, 14% (126,816).
- In 2022–23, in New South Wales, there were 35 Aboriginal people (0.1 per 1,000) who were screened for diabetic retinopathy with a retinal camera. The comparable rate for the total Aboriginal and Torres Strait Islander population was 0.9 per 1,000 population (802).
- In 2021–23, the hospitalisation rate for Aboriginal people living in New South Wales for diseases of the eye was 7.1 per 1,000 population. The comparable rate for the total Aboriginal and Torres Strait Islander population was 7.4 per 1,000 population.
- In 2021–23, the number of hospitalisations for cataract surgery for Aboriginal people in New South Wales (2,841 hospitalisations) was below the estimated number of people needing cataract surgery (5,651). Therefore, only 50% of the need for cataract surgery was met. The comparable number of hospitalisations for the total First Nations population was 8,008 people which was also below the estimated number of people needing cataract surgery (17,031), only 47% of need met nationally.

# New South Wales population

Figure 1: New South Wales-Roadmap regions



New South Wales is Australia's most populated state and contains 14 Roadmap regions (Figure 1).

On 30 June 2021, the estimated resident population of Aboriginal people in New South Wales was around 340,000 or 4.2% of the population of New South Wales (ABS 2023). This represents 35% of the total Aboriginal and Torres Strait Islander population in 2021 (983,700 population).

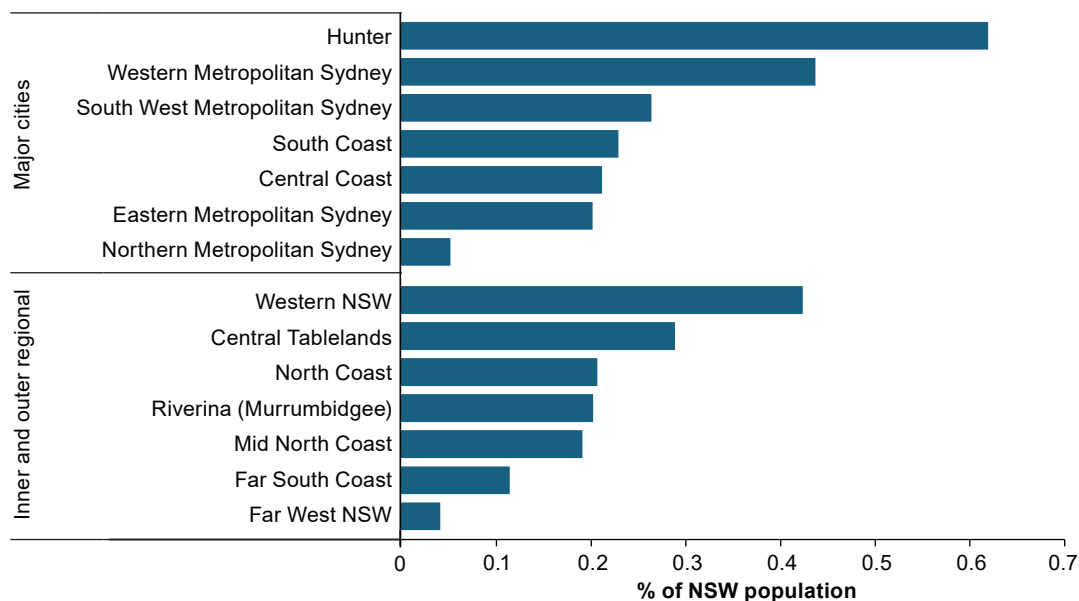
This represented an increase from the 2011 Census and 2016 Census which showed the estimated resident Aboriginal population was 2.9% (ABS 2013) and 3.4% (ABS 2018), respectively of the New South Wales population.

In 2021, around half of the Aboriginal population living in New South Wales lived in *Major cities*. Among the total population living in each New South Wales remoteness area, the proportion of people who were Aboriginal increased with remoteness:

- 2.7% (164,433) of people living in New South Wales *Major cities* were Aboriginal
- 7.8% (122,842) in *Inner regional* areas
- 11.5% (43,424) in *Outer regional* areas
- 22.9% (6,122) in *Remote* areas
- 41.4% (2,889) in *Very remote* areas.

In 2023, the Hunter Roadmap region had the highest proportion of the total New South Wales population who were Aboriginal. This was followed by Western Metropolitan Sydney and Western NSW (Figure 2).

Figure 2: New South Wales Roadmap regions, Aboriginal people, 2023



Remoteness <sup>1</sup>	Roadmap region	% of NSW population <sup>2</sup>
Major cities	Hunter	0.6
	Western Metropolitan Sydney	0.4
	South West Metropolitan Sydney	0.3
	South Coast	0.2
	Central Coast	0.2
	Eastern Metropolitan Sydney	0.2
	Northern Metropolitan Sydney	0.1
<b>Sub-total</b>	<b>2.0</b>	
Inner and outer regional	Western NSW	0.4
	Central Tablelands	0.3
	North Coast	0.2
	Riverina (Murrumbidgee)	0.2
	Mid North Coast	0.2
	Far South Coast	0.1
	Far West NSW	0.0
<b>Sub-total</b>	<b>1.5</b>	
<b>NSW</b>	<b>3.5</b>	

Notes:

1. Roadmap regions were assigned to one of 3 'predominant remoteness' categories (*Major cities, Inner and outer regional, or Remote and very remote*) based on the estimated distribution of First Nations people across Remoteness Areas (Edition 3) in 2021. The geographic area of a Roadmap region may differ from the boundary of the remoteness area to which it is assigned.
2. Roadmap region populations were modelled by the AIHW using 2016 ABS population estimates and projections (series B).

# Eye health measures

## Eye health prevalence

In 2018–19, in New South Wales, 95,902 (53%) Aboriginal people aged 15 years and over reported eye and sight problems. This was similar to the national Aboriginal and Torres Strait Islander proportion, 52%.

In 2018–19, in New South Wales, after adjusting for age differences between the Aboriginal and non-Aboriginal populations, the proportion of self-reported eye or sight problems for Aboriginal people was 49%. This was similar to the age adjusted proportion for non-Aboriginal Australians in New South Wales, 51% (rate ratio of 1.0). This was also similar to the national age adjusted proportion for Aboriginal and Torres Strait Islander people, 49% (AIHW 2023).

## Eye health diagnosis and screening

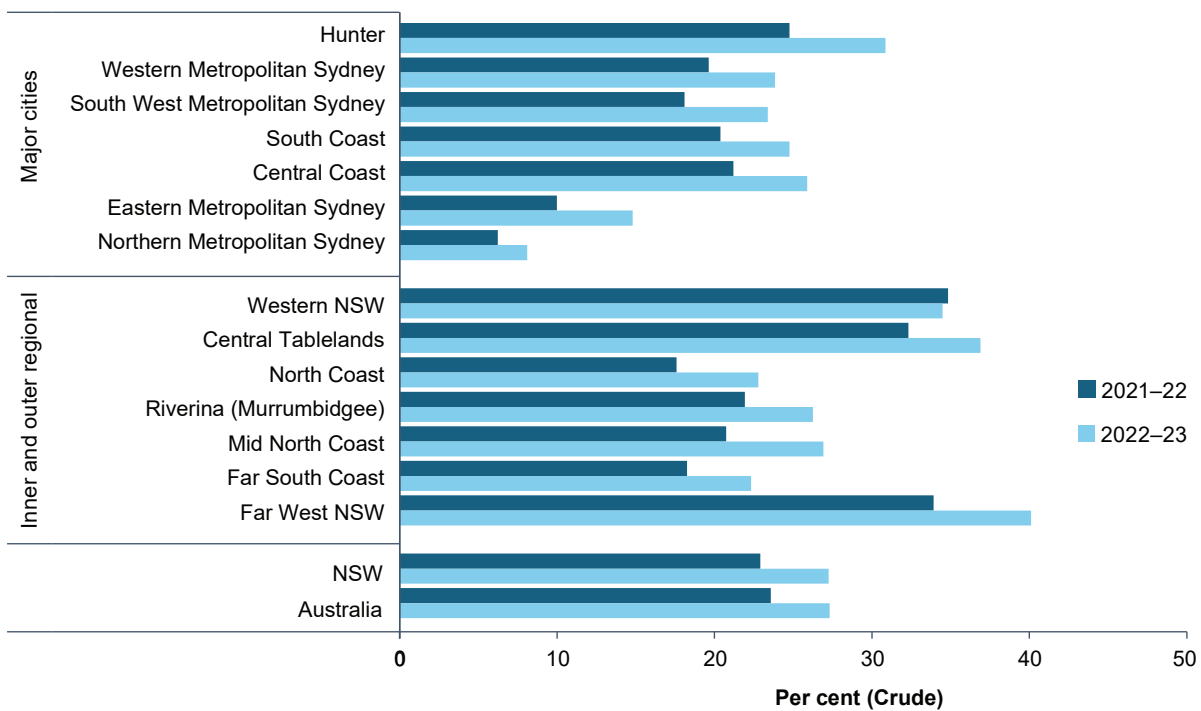
Primary health care providers, such as general practitioners and pharmacists, play a key role in detecting problems, treating minor eye conditions and referring patients to more specialised care. They also conduct annual health assessments. Optometrists provide dedicated eye specific primary care, vision and refraction assessment and eye health screening services including screening for diabetic retinopathy. Ophthalmologists provide medical and surgical eye specialist care and treatment for eye conditions including cataract surgery and treatments for diabetic retinopathy.

## Annual health assessments

Aboriginal and Torres Strait Islander people can receive an annual health assessment, designed specifically for Aboriginal and Torres Strait Islander people, and funded through Medicare. A basic eye check is a mandatory part of the assessment and may include examining the eye, checking visual acuity, and referring the patient to an optometrist or ophthalmologist for comprehensive eye care if necessary. In 2022–23, slightly more than one in four (27% 81,634) Aboriginal and Torres Strait Islander people in New South Wales had an annual health check, similar to the national proportion (27%). In 2021–22, the rate of health checks in New South Wales was lower, just over one in five (23%, 67,314), again similar to the national Aboriginal and Torres Strait Islander proportion (23.5%) (Figure 3).

The proportion of general MBS annual health assessments for Aboriginal people in New South Wales were highest in the Far West NSW Roadmap region (1,447 or 40%) and in the Central Tablelands Roadmap region in 2022–23 (around 9,150 or 37%). The proportion of annual health assessments in almost all Roadmap regions increased between 2021–22 and 2022–23 (Figure 3).

**Figure 3: Annual health assessments, by Roadmap Region, New South Wales and Australia, Aboriginal and Torres Strait Islander people**



Remoteness	Roadmap region	2021-22		2022-23	
		Number of people	Per cent	Number of people	Per cent
Major cities	Hunter	12,957	24.7	16,467	30.8
	Western Metropolitan Sydney	7,254	19.6	8,977	23.8
	South West Metropolitan Sydney	4,045	18.1	5,331	23.3
	South Coast	3,950	20.3	4,894	24.7
	Central Coast	3,780	21.1	4,706	25.8
	Eastern Metropolitan Sydney	1,699	10.0	2,567	14.8
	Northern Metropolitan Sydney	276	6.2	365	8.1
Inner and outer regional	Western NSW	12,401	34.8	12,516	34.4
	Central Tablelands	7,862	32.3	9,150	36.8
	North Coast	3,073	17.5	4,059	22.7
	Riverina (Murrumbidgee)	3,742	21.9	4,569	26.2
	Mid North Coast	3,357	20.7	4,442	26.9
	Far South Coast	1,773	18.2	2,211	22.3
	Far West NSW	1,200	33.8	1,447	40.0
NSW	67,314	22.9	81,634	27.2	
Australia	208,759	23.5	246,707	27.3	

Source: AIHW analysis of MBS data.

## Eye examinations by an eye care professional (optometrists and ophthalmologists)

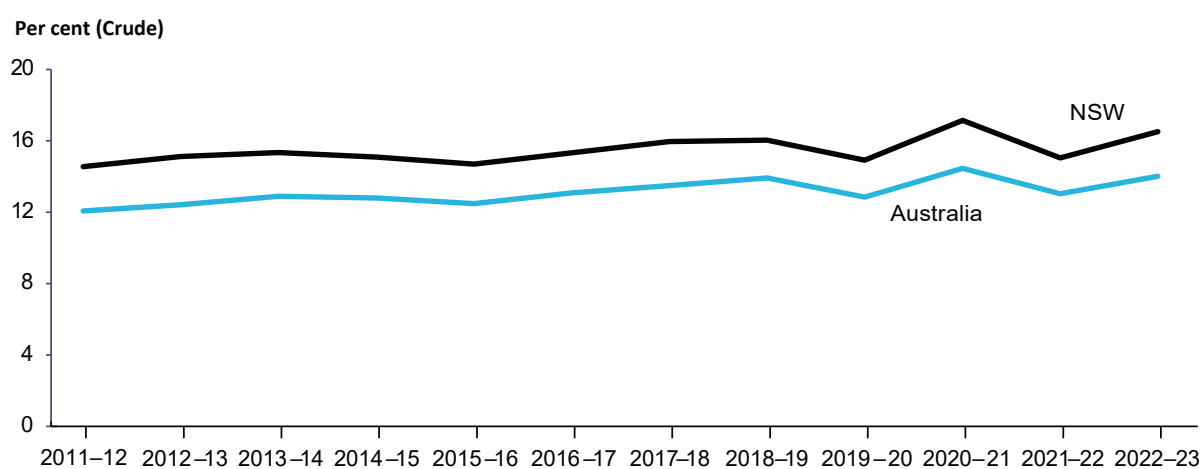
Patients may have one or a series of appointments with an optometrist or ophthalmologist. This measure includes only the first appointment.

The proportion of initial eye examinations for Aboriginal people in New South Wales has increased slightly over time from 14.5% in 2011–12 to 16.5% in 2022–23. The proportion of eye examinations for Aboriginal people in New South Wales has been consistently higher than for Aboriginal and Torres Strait Islander people nationally, over this period (Figure 4).

**Optometrists** – primary eye care professionals who perform eye examinations, vision tests for refractive error to prescribe glasses and critical screening for other eye conditions, some are therapeutically endorsed for limited prescribing rights

**Ophthalmologists** – medical eye specialists who provide diagnostic, treatment and preventive medical services related to diseases, injuries and deficiencies in the human eye, such as cataract surgery.

**Figure 4: Eye examinations by an eye care professional, New South Wales and Australia, Aboriginal and Torres Strait Islander people**



Year	New South Wales		Australia	
	Number of patients	Per cent	Number of patients	Per cent
2011-12	34,851	14.5	87,929	12.1
2012-13	37,108	15.1	92,393	12.4
2013-14	38,517	15.3	97,873	12.9
2014-15	38,778	15.1	99,155	12.8
2015-16	38,606	14.7	98,683	12.5
2016-17	41,119	15.3	105,430	13.1
2017-18	43,588	16.0	110,951	13.5
2018-19	44,642	16.0	116,560	13.9
2019-20	42,324	14.9	109,709	12.8
2020-21	49,559	17.2	125,862	14.5
2021-22	44,331	15.0	115,735	13.0
2022-23	49,611	16.5	126,816	14.0

Source: AIHW analysis of MBS data.

The age adjusted proportion of the national population who had an initial eye examination by an optometrist or ophthalmologist has been consistently lower for Aboriginal and Torres Strait Islander people than for non-Aboriginal Australians from 2011–12 to 2022–23. The Aboriginal and Torres Strait Islander age adjusted national proportion ranged from 18% to 20%, over this period, while the non-Aboriginal proportion ranged from 22% to 27%, over the same period. In 2022–23, after adjusting for differences in age structure, Aboriginal Australians were less likely than non-Aboriginal Australians to have an eye examination (rate ratio of 0.7, rate difference of -7.5).

## Screening for diabetic retinopathy

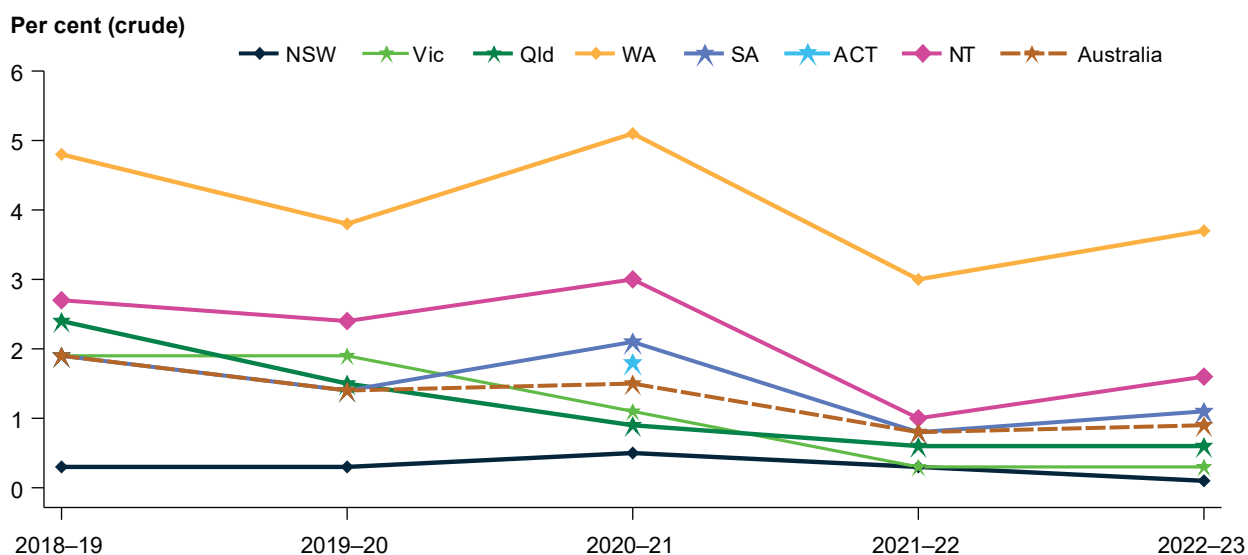
Diabetic retinopathy is an eye condition that can cause vision loss and blindness in people who have diabetes. Current guidelines recommend that Aboriginal and Torres Strait Islander people with diabetes have an annual eye examination to screen for diabetic retinopathy (National Health and Medical Research Council 2008).

In the 2016 National Eye Health Survey, just over half (53%) of Aboriginal and Torres Strait Islander participants aged 40 and over with self-reported diabetes had a diabetic eye examination in the preceding 12 months. This varied by remoteness, with participants in *Very remote* areas having the lowest proportion of examinations (35%).

More recent Medicare data of rates of eye examinations among those tested for diabetes indicate whether people who may have diabetes are accessing eye examinations and retinopathy screening. Not all people who have a diabetes test have diabetes so this measure may be an underestimate.

In 2022–23, the screening rate for diabetic retinopathy with a retinal camera for Aboriginal people in New South Wales was 0.1 per 1,000 population (35 people). This was lower than the national screening rate for Aboriginal and Torres Strait Islander people (0.9 per 1,000) (Figure 5).

**Figure 5: Screened for diabetic retinopathy with a retinal camera, by state/territory, Aboriginal and Torres Strait Islander people**



	2018-19		2019-20		2020-21		2021-22		2022-23	
	Number of patients	Rate per 1,000	Number of patients	Rate per 1,000	Number of patients	Rate per 1,000	Number of patients	Rate per 1,000	Number of patients	Rate per 1,000
NSW	93	0.3	88	0.3	140	0.5	99	0.3	35	0.1
Vic	115	1.9	121	1.9	73	1.1	20	0.3	23	0.3
Qld	566	2.4	354	1.5	231	0.9	152	0.6	150	0.6
WA	512	4.8	403	3.7	557	5.1	330	3.0	418	3.7
SA	85	1.9	65	1.4	98	2.1	40	0.8	50	1.1
Tas	—	—	n.p.	n.p.	—	—	n.p.	n.p.	—	—
ACT	—	—	n.p.	n.p.	15	1.8	n.p.	n.p.	—	—
NT	211	2.7	165	2.1	234	3.0	79	1.0	126	1.6
Australia	1,582	1.9	1,196	1.4	1,348	1.5	722	0.8	802	0.9

Note: n.p. = not published due to small numbers. — = Number of patients and rate was 0.

Source: AIHW analysis of MBS data.

## Eye health treatment

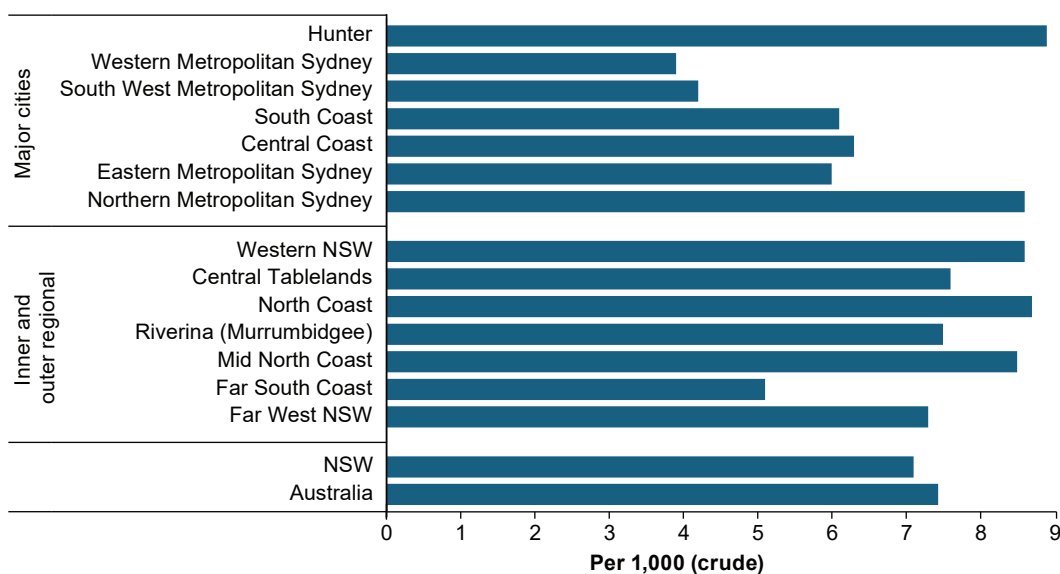
Different eye problems require different treatments. For example, surgery is required to remove cataracts while refractive error is treated by using visual aids, such as glasses and contact lenses.

### Hospitalisations for diseases of the eye

In the 2-year period, 2021–23, there were 4,226 hospitalisations (7.1 per 1,000) for Aboriginal people for diseases of the eye in New South Wales.

In 2021–23, in New South Wales, hospitalisation rates for eye diseases were highest in the Roadmap region of Hunter (8.9 per 1,000 population, 947 hospitalisations) followed by North Coast (8.7 per 1,000 population, 309 hospitalisations). In seven of the 14 Roadmap regions in New South Wales, hospitalisation rates for diseases of the eye for Aboriginal people were higher than the Australian rate (Figure 6).

**Figure 6: Hospitalisation rates for diseases of the eye, by Roadmap region, New South Wales and Australia, Aboriginal and Torres Strait Islander people, 2021–23**



Remoteness	Roadmap region	Number of separations	Rate per 1,000
Major cities	Hunter	947	8.9
	Western Metropolitan Sydney	294	3.9
	South West Metropolitan Sydney	193	4.2
	South Coast	243	6.1
	Central Coast	229	6.3
	Eastern Metropolitan Sydney	207	6.0
	Northern Metropolitan Sydney	78	8.6
Inner and outer regional	Western NSW	629	8.6
	Central Tablelands	380	7.6
	North Coast	309	8.7
	Riverina (Murrumbidgee)	263	7.5
	Mid North Coast	282	8.5
	Far South Coast	102	5.1
	Far West NSW	53	7.3
NSW		4,226	7.1
Australia		13,329	7.4

Source: AIHW analysis of NHMD.

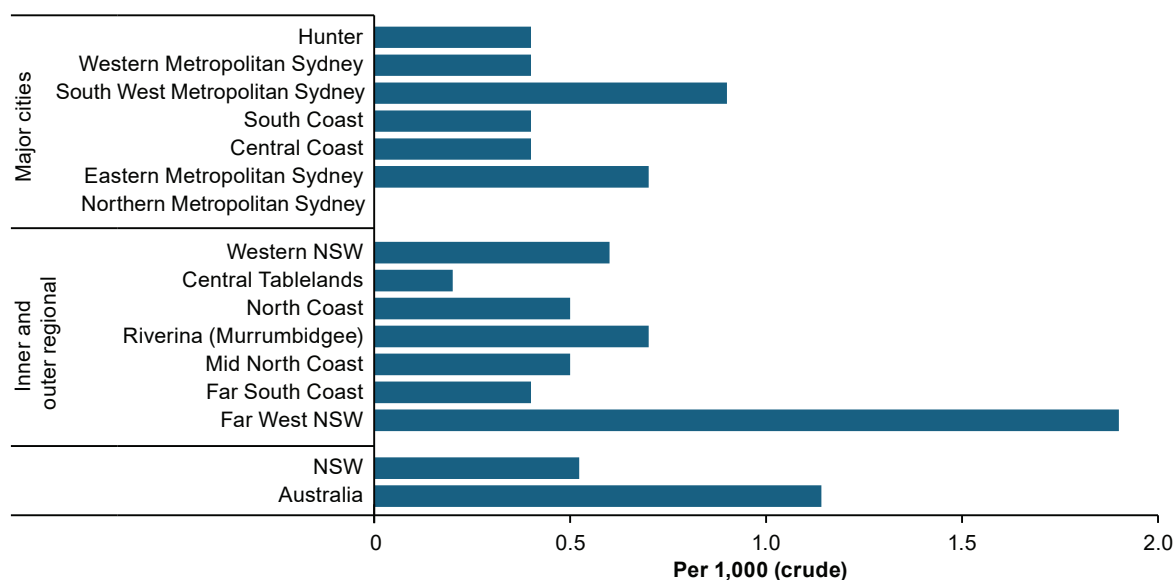
In 2021–23 in New South Wales, after adjusting for age differences between the Aboriginal and non-Aboriginal populations, the hospitalisation rate for Aboriginal people for diseases of the eye (11.9 per 1,000 population) was slightly lower than the non-Aboriginal hospitalisation rate (13.2 per 1,000 population); rate ratio of 0.9, rate difference of -1.2.

## Hospitalisations for injuries to the eye

In the 2-year period, 2021–23, for Aboriginal and Torres Strait Islander people nationally, the most common principal diagnosis for hospitalisations for injury to the eye were an open wound of eyelid and periocular area, periorbital fracture and superficial injuries of eyelid and periocular area. In 2021–23, in New South Wales, there were 311 hospitalisations (0.5 per 1,000 population) for Aboriginal people for injuries to the eye.

In 2021–23, in all 14 Roadmap regions in New South Wales, hospitalisation rates for injuries to the eye for Aboriginal people were lower than the Australian rate. The number and rate of separations was too low to be published in Northern Metropolitan Sydney (Figure 7).

**Figure 7: Hospitalisation rates for injuries to the eye, by Roadmap region, New South Wales and Australia, Aboriginal and Torres Strait Islander people, 2021–23**



Source: AIHW analysis of NHMD.

In 2021–23, the number of hospitalisations for injuries to the eye is low so age adjusted rates for Aboriginal people and non-Aboriginal Australians are calculated for New South Wales and the Australian Capital Territory combined. The hospitalisation rate for injuries to the eye for Aboriginal Australians (0.6 per 1,000 population) was higher than the non-Aboriginal hospitalisation rate (0.3 per 1,000 population); rate ratio of 1.7, rate difference of 0.2.

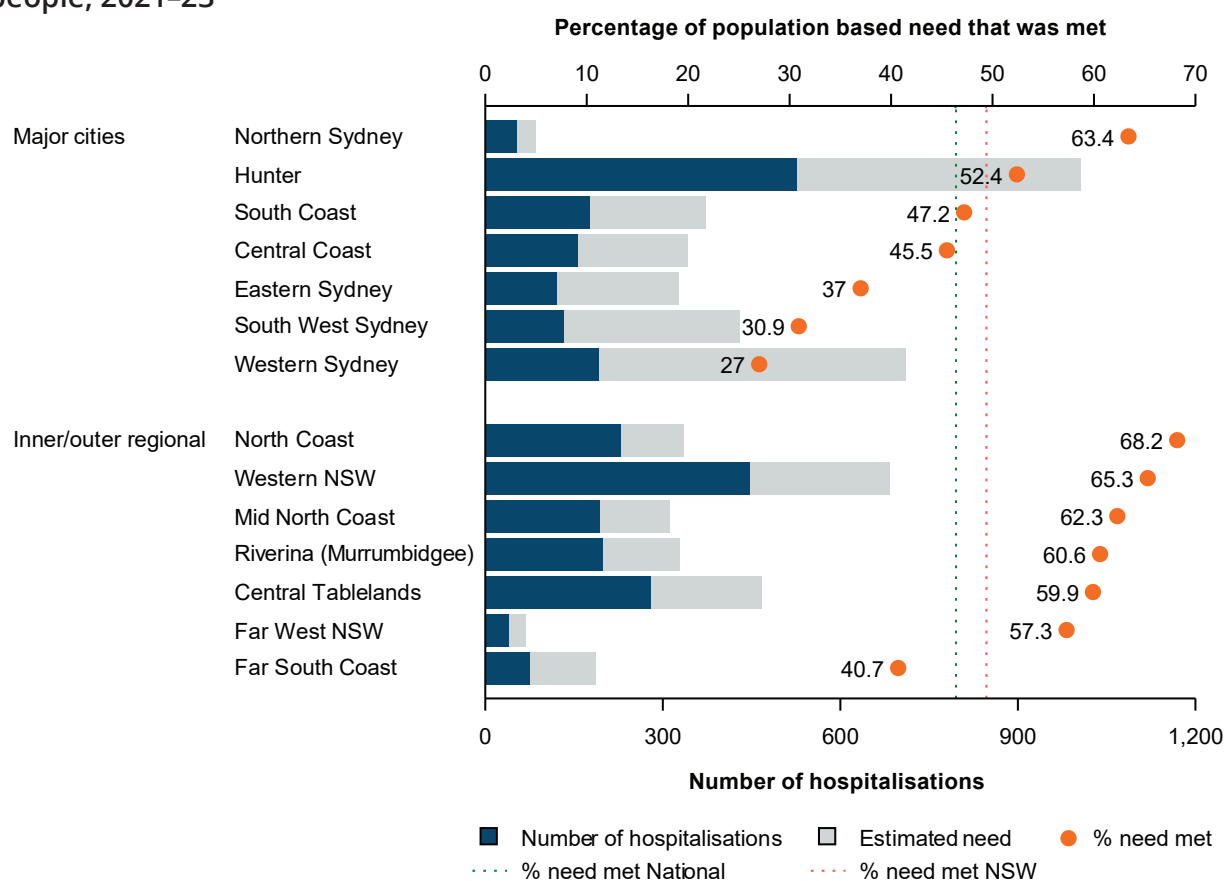
## Cataract surgery

In the 2-year period, 2021–23, there were 2,841 hospitalisations for Aboriginal people for cataract surgery in New South Wales (4,776 per 1,000,000 population). In 2021–23, the number of hospitalisations for cataract surgery in New South Wales for Aboriginal people was below the estimated number of people needing cataract surgery (5,651) (IEHU 2017). The data do not include outpatient surgery and may underestimate the number of procedures and, therefore, the percentage of need for cataract surgery that was met.

The number of people needing cataract surgery was calculated using the University of Melbourne IEHU ‘Calculator for the delivery and coordination of eye care services’, based on the 2008 National Indigenous Eye Health Survey and models of service delivery developed in the Roadmap to Close the Gap for Vision (IEHU 2017). This calculator uses the First Nations population for a community or region to estimate the annual need for eye care services in that area.

In 2021–23, for Aboriginal people in New South Wales, rates of hospitalisations for cataract surgery were highest in the Roadmap region of North Coast (6,475 per 1,000,000 population, 229 hospitalisations) followed by Western NSW (6,205 per 1,000,000 population, 447 hospitalisations). In 2021–23, the Roadmap region with the highest proportion of need for cataract surgery that was met was North Coast – 68% of need met. In 2021–23, in nine of the 14 New South Wales Roadmap regions, a higher proportion of Aboriginal people’s need for cataract surgery was met than was met nationally (Figure 8).

**Figure 8: Hospitalisation rates, need for cataract surgery and proportion of need that was met, by Roadmap Region, New South Wales and Australia, Aboriginal and Torres Strait Islander people, 2021–23**



(continued)

**Figure 8 (continued): Hospitalisation rates, need for cataract surgery and proportion of need that was met, by Roadmap Region, New South Wales and Australia, Aboriginal and Torres Strait Islander people, 2021–23**

Remoteness	Roadmap region	Hospitalisations	Rate per 1,000,000	Hospitalisations need	Percentage of need that was met
Major cities	Hunter	527	4,977	1,006	52.4
	Western Metropolitan Sydney	192	2,568	710	27.0
	South West Metropolitan Sydney	133	2,939	430	30.9
	South Coast	176	4,485	373	47.2
	Central Coast	156	4,322	343	45.5
	Eastern Metropolitan Sydney	121	3,514	327	37.0
	Northern Metropolitan Sydney	54	6,027	85	63.4
Inner and outer regional	Western NSW	447	6,205	684	65.3
	Central Tablelands	280	5,689	468	59.9
	North Coast	229	6,475	336	68.2
	Riverina (Murrumbidgee)	199	5,760	328	60.6
	Mid North Coast	194	5,920	311	62.3
	Far South Coast	76	3,865	187	40.7
	Far West NSW	39	5,447	68	57.3
NSW		2,841	4,776	5,651	50.3
Australia		8,008	4,467	17,031	47.0

Source: AIHW of NHMD, and AIHW analysis of calculator for the delivery and coordination of eye care services (IEHU).

In 2021–23 in New South Wales, after adjusting for age differences between the Aboriginal and non-Aboriginal populations, the hospitalisation rate for Aboriginal Australians for cataract surgery (8,661 per 1,000,000 population) was higher than the non-Aboriginal hospitalisation rate (8,450 per 1,000,000 population); rate ratio of 1.0, rate difference of 211 (per 1,000,000 population). The cataract surgery rate was calculated per 1,000,000 to align with international standards (WHO 2013).

## Trachoma and trichiasis

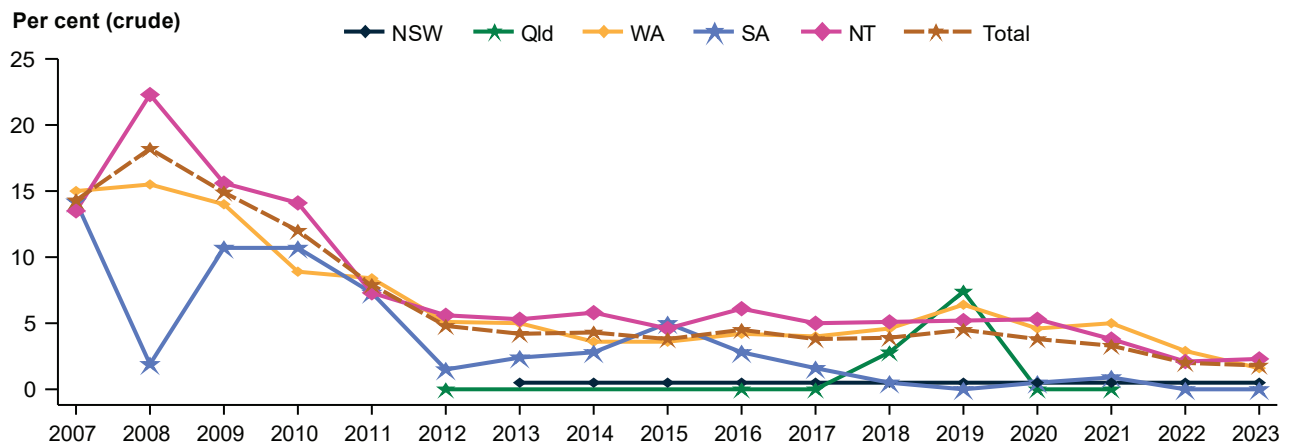
Trachoma is the world's leading infectious cause of preventable blindness, caused by the bacteria *Chlamydia trachomatis*. Australia is the only high-income country in which trachoma has remained endemic. Trachoma is primarily found in remote Aboriginal and Torres Strait Islander communities in Western Australia, South Australia and the Northern Territory. Antibiotics, facial cleanliness and environmental improvements are used to control the spread of trachoma. Surgery is required to correct trachomatous trichiasis, an advanced sequela of multiple trachoma infections that lead to vision loss and blindness (WHO Alliance for the global elimination of Trachoma, 2023).

There were no communities designated at-risk of trachoma or trichiasis in New South Wales in 2023.

## Trachoma and trichiasis, prevalence and treatment

In 2023, jurisdictions designated 67 remote Indigenous communities in the Northern Territory, South Australia and Western Australia as at risk of endemic trachoma. New South Wales and Queensland were declared non endemic for trachoma in 2017 and 2022 respectively. Nationally, the overall prevalence of trachoma in children aged 5–9 years fell from 14% in 2007 to 1.8% in 2023. Overall prevalence was 0.5% in New South Wales, 2.3% in the Northern Territory, 0% in South Australia, and 1.6% in Western Australia in 2023 (Figure 9). Eighteen communities nationally required antibiotic treatment for chlamydial infection in 2023. Treatment coverage for cases detected in screening activities was 99%, with 81% of household and community contacts also treated (Figure 9).

**Figure 9: Overall trachoma prevalence among Aboriginal children aged 5–9 years in all current and former at-risk communities**



Note: Overall prevalence was calculated using the most recent data for all at-risk communities screened in 2022, as well as the most recent data carried forward from at-risk communities that did not screen, and communities removed from the at-risk register. More information can be found in Table 1.2 [Australian Trachoma Surveillance Reports | Kirby Institute \(unsw.edu.au\)](https://www.kirbyinstitute.edu.au/publications/australian-trachoma-surveillance-reports)

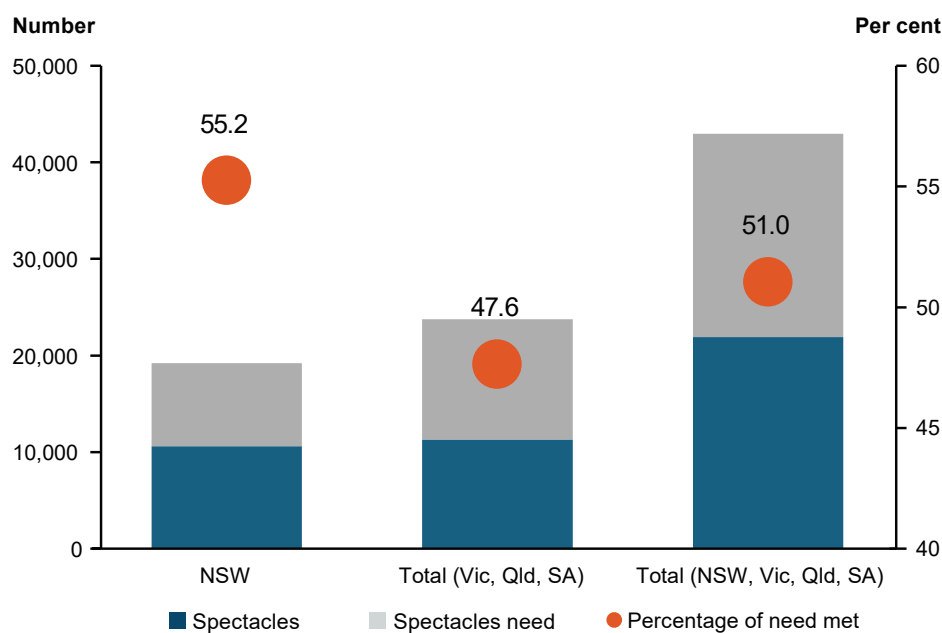
Sources: Kirby Institute 2011, 2012, 2013, 2014, 2015, 2016, 2018, 2019a, 2019b, 2020, 2021, 2022, 2023, in press.

Nationally, in 2023, 13,219 adults aged 15 years and over in 150 at risk and previously at risk communities were screened for trichiasis. There were 9 cases of trichiasis detected in persons aged 15 years and older, with a prevalence in screened persons of 0.07%. Surgery for trachoma related trichiasis was reported by jurisdictional teams to have been undertaken for 7 adults in 2023.

### Subsidised spectacles

All states and territories have schemes that provide eye care and visual aids, including glasses, to eligible people at low or no cost. In 2022–23, across the four states able to provide data (New South Wales, Victoria, Queensland and South Australia), around 21,900 spectacles were provided to Aboriginal and Torres Strait Islander people through the schemes. In 2022–23, 10,611 spectacles were provided to Aboriginal people under the New South Wales scheme (35 per 1,000 population). The estimated number of spectacles needed (19,206) was considerably greater than the number dispensed; meaning only 35% of the need was met (Figure 10).

Figure 10: State spectacles schemes, number of spectacles dispensed and need, Aboriginal people, 2022–23



State/Territory	Spectacles number	Spectacles need	Percentage of need met
NSW	10,611	19,206	55.2
Total (Vic, Qld, SA)	11,310	23,748	47.6
Total (NSW, Vic, Qld, SA)	21,921	42,954	51.0

Note: The estimated number of people needing spectacles was derived from the calculator for the coordination and delivery of eye care services (IEHU 2017).

Sources: AIHW analysis of Calculator for the delivery and coordination of eye care services (IEHU 2017), NSW Department of Family and Community Services data (unpublished).

## Eye health workforce

The size and location of the eye health workforce gives a broad indication of access to specialists and eye services.

### Eye Health Workforce:

**Optometrists** – primary eye care professionals - described above

**Ophthalmologists** – medical eye specialists - described above

**Allied ophthalmic personnel** include:

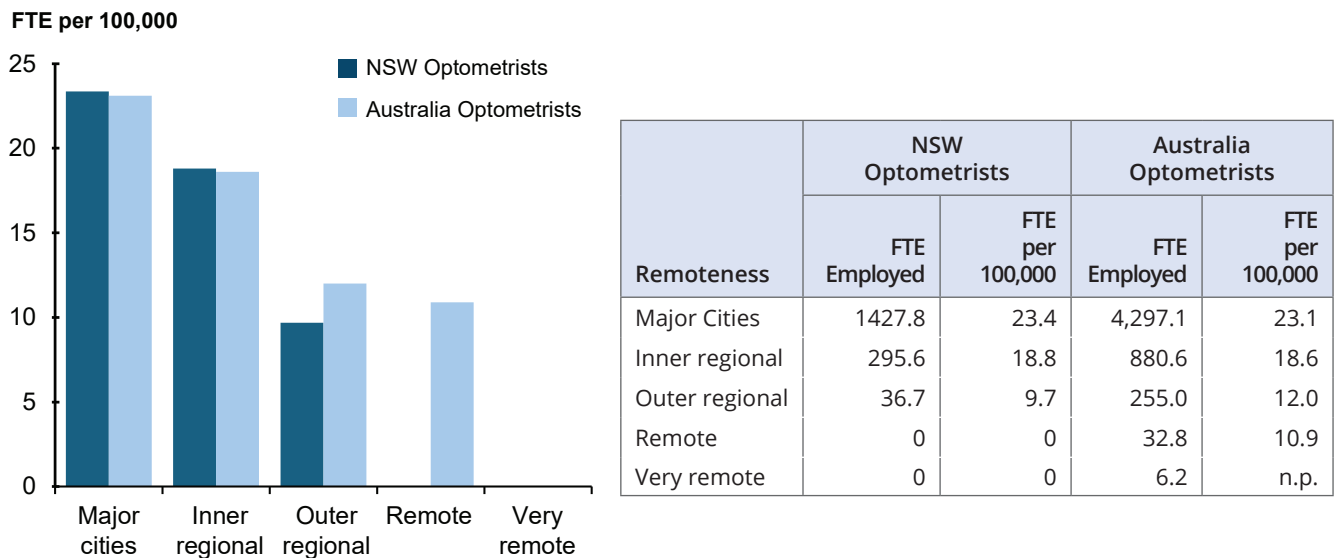
- **optical dispensers** who supply and manage spectacles and contact lenses
- **opticians** who fit glasses and contact lenses
- **ophthalmic nurses** who test vision and provide other eye tests under medical direction
- **orthoptists** who diagnose and manage eye movement disorders

**Full-time equivalent (FTE)** The FTE is a measure used to present data on the eye health workforce. It is calculated by dividing the total hours worked by employees in an occupation, by the standard hours worked.

**Full-time equivalent (FTE) rate** (number of FTE practitioners per 100,000 population) is a measure of workforce supply.

There were 1,950 optometrists (21.6 FTE per 100,000 population) employed in 2022 and 365 ophthalmologists (4.4 FTE per 100,000 population) employed in 2023 in New South Wales. In 2021 there were 1,784 optical dispensers (11.4 FTE per 100,000 population) employed in New South Wales. The FTE rates per 100,000 population of optometrists was highest in New South Wales and nationally in *Major cities* (Figure 11).

**Figure 11: Optometrists, by remoteness, New South Wales and Australia, 2022**



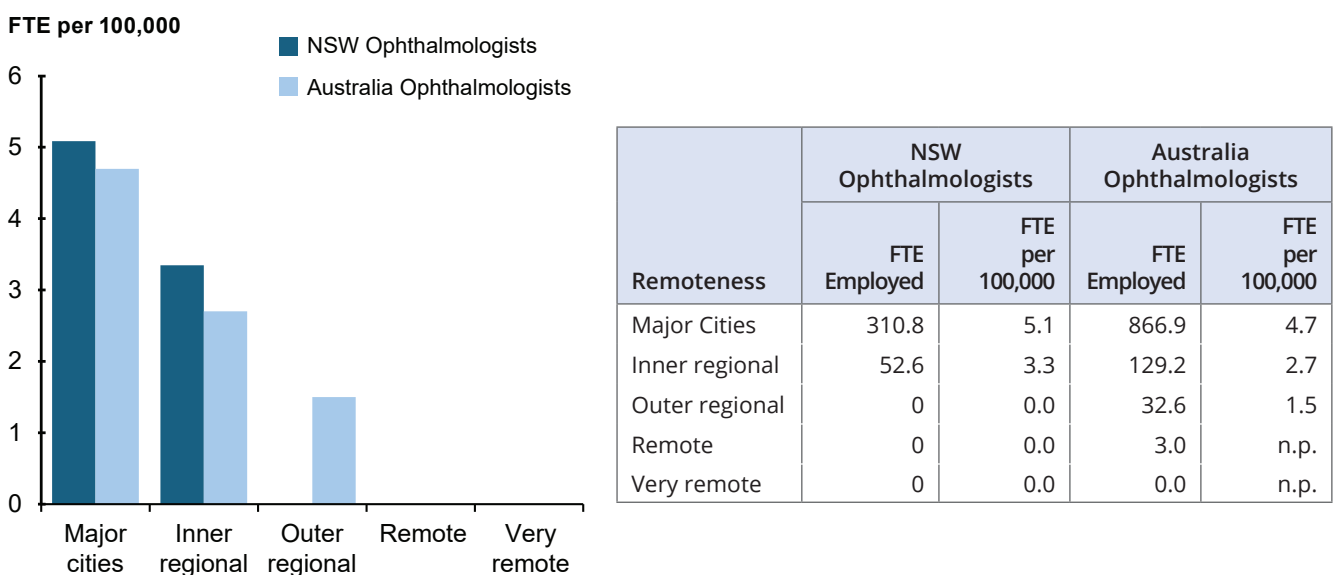
Notes:

1. Data for optometrists are based on those employed in Australia working in their registered profession.
2. FTE per 100,000 population are based on a 38-hour week.

Sources: AIHW analysis of National Health Workforce Dataset.

The Australian ophthalmology workforce is skewed toward metropolitan areas. In 2023, the FTE rates per 100,000 of ophthalmologists was highest in New South Wales and nationally in *Major cities*. There were no ophthalmologists employed full time in *Outer regional* and *Remote* areas in New South Wales and in *Very remote* areas nationally or in New South Wales (Figure 12).

**Figure 12: Ophthalmologists, by remoteness, New South Wales and Australia, 2023**



Notes:

1. Data for ophthalmologists are based on those employed in Australia working in their registered profession.
2. FTE per 100,000 population are based on a 38-hour week.

Sources: AIHW analysis of National Health Workforce Dataset.

## Outreach and other programs

Australian Government outreach programs are designed to address the uneven distribution of the health workforce and to improve access to eye health services across Australia. For example, the Rural Doctor's Network is part of the Western NSW Eye Health Partnership, which is a collaboration between Aboriginal Community Controlled Health Organisations, Primary Health Networks and non-government Organisations, funded by the Fred Hollows Foundation. The Partnership establishes an integrated framework drawing on local knowledge and stakeholders across the region, with the aim to increase access to eye health services and provide culturally responsive pathways to eye health for Aboriginal people (Rural Doctor's Network 2024).

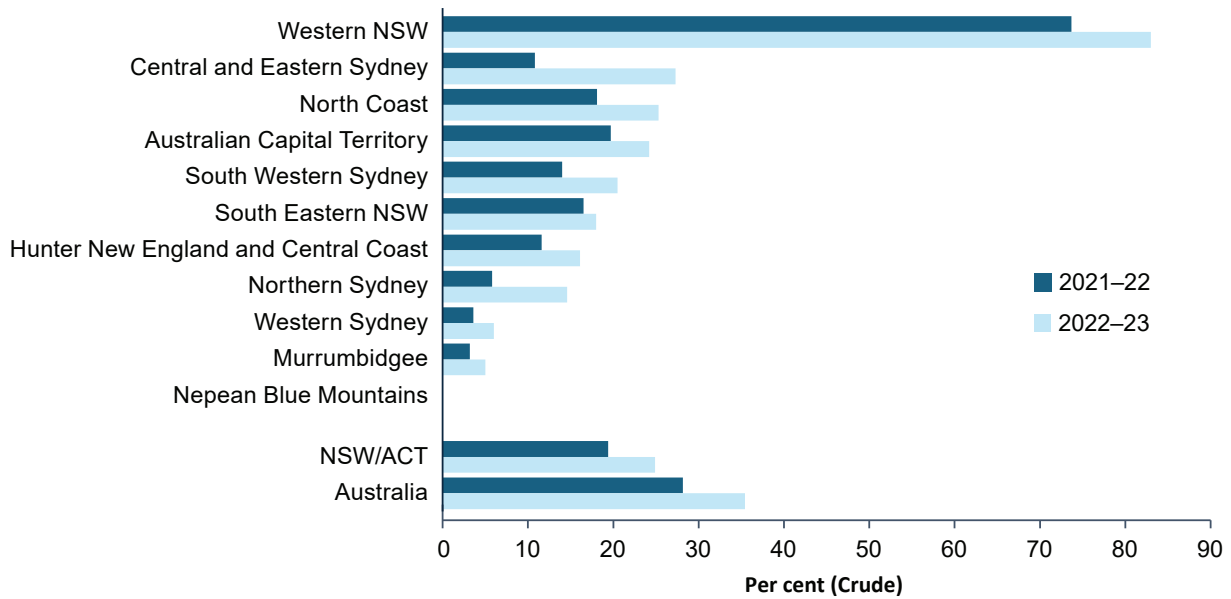
In addition, several programs provide specialist eye health services, primarily in regional and remote areas of Australia. The outreach programs include the Visiting Optometrists Scheme (VOS), the Rural Health Outreach Fund (RHOF), the Medical Outreach Indigenous Chronic Diseases Program (MOICDP), the Eye and Ear Surgical Support Service (EESSS), and the Coordination of Indigenous Eye Health.

This section focusses on eye health services provided through the VOS in New South Wales. Data on the other outreach programs are available in [Eye Health measures for Aboriginal and Torres Strait Islander people 2024](#).

Organisations supported through outreach programs are referred to as fundholders. Fundholders make effective use of available funding to identify and meet community needs. The jurisdictional fundholders liaise regularly to monitor and evaluate workforce needs and service delivery to make best-practice improvements (RWAV 2017). There are seven jurisdictional fundholders for the Australian Government's eye health outreach programs. In New South Wales this is the NSW Rural Doctor's Network.

In 2022–23 there were 7,692 (24.9 per 1,000 population) VOS occasions of service provided to Aboriginal patients in New South Wales and the Australian Capital Territory combined. This was an increase from 2021–22, where there were 5,889 (19.4 per 1,000 population) VOS occasions of service. In 2022–23, most of these services were provided in the Western NSW Primary Health Network (PHN) (3,249, 83.0 per 1,000 population) with 218 (24.2 per 1,000 population) provided in the Australian Capital Territory (Figure 13).

**Figure 13: VOS occasions of service, by Primary Health Network, New South Wales, the Australian Capital Territory and Australia, Aboriginal people**



PHN	2021-22		2022-23	
	Number of services	Rate per 1,000	Number of services	Rate per 1,000
Western NSW	2,851	73.7	3,249	83.0
Central and Eastern Sydney	185	10.8	474	27.3
North Coast	612	18.1	875	25.3
Australian Capital Territory	172	19.7	218	24.2
South Western Sydney	322	14.0	483	20.5
South Eastern NSW	481	16.5	538	18.0
Hunter New England and Central Coast	1,094	11.6	1,546	16.1
Northern Sydney	26	5.8	66	14.6
Western Sydney	62	3.6	107	6.0
Murrumbidgee	50	3.2	80	5.0
Nepean Blue Mountains	0	0.0	0	0.0
NSW/ACT	5,889	19.4	7,692	24.9
Australia	24,992	28.2	32,001	35.4

Note: The number of occasions of service for individual PHNs may not add up to the total number of occasions of service for a jurisdiction as some PHN's cross jurisdictional boundaries. For example, Murray PHN includes Northern Victoria and Albury (NSW).

Source: AIHW analysis of Department of Health and Aged Care data (unpublished).

## Box 1

### Main eye health conditions affecting First Nations people

**Refractive error** refers to problems with the focusing of light and causes long- or short- sightedness. It can generally be corrected with spectacles, contact lenses or laser surgery (National Eye Institute 2010)

**Cataract** is a degenerative condition when the lens of the eye clouds over obstructing the passage of light to the retina and causing vision impairment or eventually blindness

**Diabetic retinopathy** is a complication of diabetes and involves damage to the blood vessels of the retina. All diabetics can eventually develop diabetic retinopathy, even with good diabetic control, and suffer visual disturbance and vision loss, if diabetes is poorly managed, diabetic retinopathy can result in blindness (Healthinfonet 2016)

**Trachoma** is an infectious disease of the eye caused by the bacterium *Chlamydia trachomatis*. Repeated episodes of infection can eventually cause loss of vision and blindness.

## Box 2

### Area classifications

Data for some measures are reported for smaller geographic areas, including PHNs and Roadmap regions:

**Primary Health Networks (PHNs)** are 31 geographic areas covering Australia, with boundaries defined by the Department of Health and Aged Care. They vary in relation to the size of the Aboriginal and Torres Strait Islander populations that live there and by the proportion of the total population that is Aboriginal and Torres Strait Islander. Data relate to the services provided to those living in these areas, and not to whether the PHNs provided the services. There are ten PHN's in New South Wales: Central and Eastern Sydney, Northern Sydney, Western Sydney, Nepean Blue Mountains, South Western Sydney, South Eastern NSW, Western NSW, Hunter New England and Central Coast, North Coast and Murrumbidgee. A map and list of PHN areas are available in [Appendix A](#).

**Roadmap to close the gap for vision regions** evolved out of the University of Melbourne's Indigenous Eye Health Unit (IEHU) Roadmap to Close the Gap for Vision project to review health service provision for Aboriginal and Torres Strait Islander people and to develop a model to improve their eye care. There are 64 regions in which local collaborations to improve eye care pathways for Aboriginal and Torres Strait Islander patients have been initiated most of which have a 'surgical hub' or hospital where cataract surgery can be performed and a network of stakeholders, mostly centred around Aboriginal Community Controlled Health Services, who contribute to improved pathways of care and outcomes. There are 14 Roadmap Regions in New South Wales: Far West NSW, Western NSW, Central Tablelands, North Coast, Mid North Coast, Hunter, Western Metropolitan Sydney, Central Coast, Northern Metropolitan Sydney, Eastern Metropolitan Sydney, South West Metropolitan Sydney, Riverina (Murrumbidgee), South Coast and Far South Coast. A map and list of Roadmap regions are available in [Appendix B](#).

## Box 3

### Data gaps and limitations

#### Prevalence

**Eye health prevalence** Data on self-reported eye or sight problems come from 10,579 Aboriginal and Torres Strait people in Australia included in the 2018–19 NATSIHS (ABS 2019). Self-reported data on various health conditions, including diseases of the eye/adnexa – referred to as ‘eye or sight problems’ in this report were collected. As data are self-reported they have not necessarily been diagnosed by a health professional and do not include eye conditions that respondents are unaware that they have. Survey results are subject to sampling errors as only a proportion of the population is used to produce estimates that represent the whole population.

#### Eye health diagnosis and screening

**Eye examinations by an eye care specialist** (optometrist or ophthalmologist) MBS data reflect billing practices, and not necessarily all services received. For example, MBS data do not generally capture equivalent services provided by jurisdiction-funded primary health care, GP’s, nurses, health workers or by public hospitals – for example, eye examinations undertaken by salaried ophthalmologists in public hospitals. Equivalent or similar care may also be billed as a different MBS item (such as a standard consultation).

**Screening for diabetic retinopathy** Screening for diabetic retinopathy can be provided in several ways, including direct observations by a health professional during eye examinations or by using a retinal camera. MBS data reflect billing practices and not necessarily all services received. For example, the MBS data for this sub-measure do not capture equivalent services provided by eye care practitioners, optometrists and ophthalmologists, jurisdiction-funded primary health care, public hospitals or where retinal cameras are used without billing MBS.

#### Treatment

**Hospitalisation data** The data may underestimate the number of eye specialist clinical work provided, as it does not include those undertaken on an outpatient basis. This may also mean the percentage of need for cataract surgery that was met may also be an underestimate.

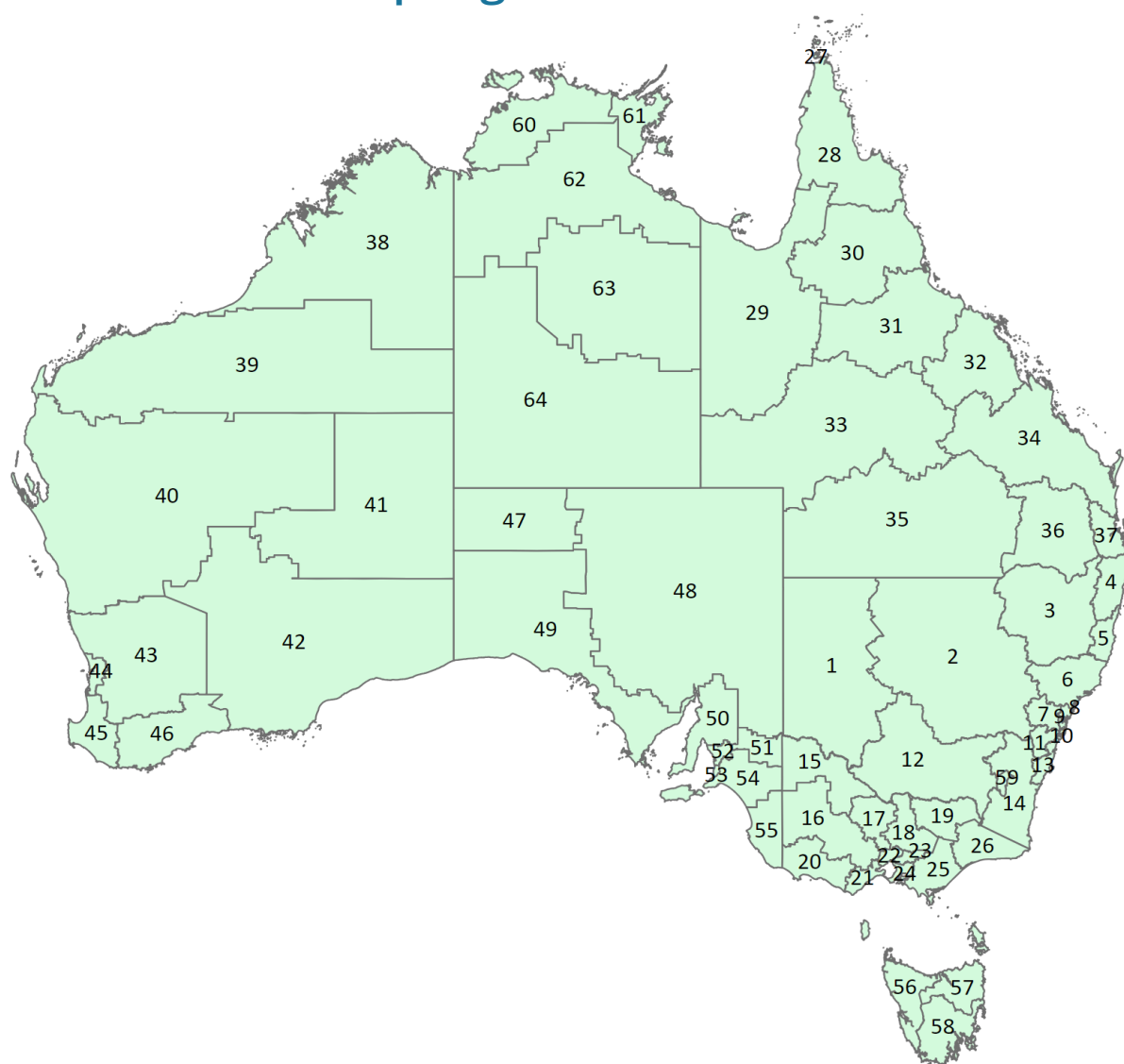
**Trachoma and trichiasis** Treatment strategies depend on the prevalence and extent of case clustering, such as treatment of active cases and contacts versus community-wide treatment. Screening coverage estimates are a guide only. Screening of Aboriginal and Torres Strait Islander adults for trichiasis may be undertaken opportunistically, such as during annual health assessments, and may not be included in the data. Data may also include multiple patient screenings. Coverage is derived from ABS census data and is linked to current trachoma endemic regions. Estimates do not consider changing endemic regions over time and transiency between regions. Trichiasis surgery cases may include cases identified in previous years.

# Appendix A: PHN regions



No.	State	PHN	No.	State	PHN
1	NSW	Central and Eastern Sydney	17	QLD	Brisbane North
2	NSW	Northern Sydney	18	QLD	Brisbane South
3	NSW	Western Sydney	19	QLD	Gold Coast
4	NSW	Nepean Blue Mountains	20	QLD	Darling Downs and West Moreton
5	NSW	South Western Sydney	21	QLD	Western Queensland
6	NSW	South Eastern NSW	22	QLD	Central Queensland, Wide Bay, Sunshine Coast
7	NSW	Western NSW	23	QLD	Northern Queensland
8	NSW	Hunter New England and Central Coast	24	WA	Perth North
9	NSW	North Coast	25	WA	Perth South
10	NSW	Murrumbidgee	26	WA	Country WA
11	VIC	North Western Melbourne	27	SA	Adelaide
12	VIC	Eastern Melbourne	28	SA	Country SA
13	VIC	South Eastern Melbourne	29	Tas	Tasmania
14	VIC	Gippsland	30	ACT	Australian Capital Territory
15	VIC	Murray	31	NT	Northern Territory
16	VIC	Western Victoria			

## Appendix B: Roadmap regions



No.	State	Roadmap region	No.	State	Roadmap region	No.	State	Roadmap region
1	NSW	Far West NSW	23	VIC	Eastern Metropolitan Melbourne	45	WA	South West
2	NSW	Western NSW	24	VIC	South East Metropolitan Melbourne	46	WA	Great Southern
3	NSW	Central Tablelands	25	VIC	Central Gippsland	47	SA	APY Lands
4	NSW	North Coast	26	VIC	East Gippsland	48	SA	Flinders and Upper North
5	NSW	Mid North Coast	27	QLD	Torres Strait	49	SA	Eyre and Far North (ex APY)
6	NSW	Hunter	28	QLD	Cape York	50	SA	Yorke and Northern
7	NSW	Western Metropolitan Sydney	29	QLD	North West Queensland	51	SA	Riverland
8	NSW	Central Coast	30	QLD	Cairns	52	SA	Adelaide Central North West
9	NSW	Northern Metropolitan Sydney	31	QLD	Townsville / Palm Island	53	SA	Adelaide South
10	NSW	Eastern Metropolitan Sydney	32	QLD	Mackay	54	SA	Murray Mallee Hills and Fleurieu
11	NSW	South West Metropolitan Sydney	33	QLD	Central West Queensland	55	SA	Limestone Coast
12	NSW	Riverina (Murrumbidgee)	34	QLD	Central Queensland	56	Tas	North West
13	NSW	South Coast	35	QLD	South West Queensland	57	Tas	North
14	NSW	Far South Coast	36	QLD	Darling Downs	58	Tas	South
15	VIC	Mallee	37	QLD	South East Queensland	59	ACT	Australian Capital Territory
16	VIC	Grampians	38	WA	Kimberley	60	NT	Greater Darwin
17	VIC	Loddon	39	WA	Pilbara	61	NT	East Arnhem
18	VIC	Hume West	40	WA	Mid West	62	NT	Katherine
19	VIC	Hume East	41	WA	NG Lands	63	NT	Barkly
20	VIC	Great South Coast	42	WA	Goldfields	64	NT	Central Australia
21	VIC	Geelong	43	WA	Wheatbelt			
22	VIC	North and West Metropolitan Melbourne	44	WA	Perth			

# Glossary

**Aboriginal and Torres Strait Islander:** A person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander. See also First Nations Australians.

**age adjustment/age-standardisation:** A set of statistical techniques used to remove, as far as possible, the effects of differences in age when comparing 2 or more populations.

**at-risk community (trachoma):** Communities classified by jurisdictions as being at higher risk of trachoma based on:

- (1) no recent data, but historical evidence of endemicity
- (2) data of active trachoma prevalence of 5% or more in children aged 5–9 in the last 5 years, or
- (3) data of less than 5% active trachoma prevalence but with a recorded prevalence of active trachoma of 5% or above in the past 5 years.

**blindness:** Presenting visual acuity of  $<3/60$  in the better eye.

**crude rate:** A rate derived from the number of events recorded in a population during a specified time period, without adjustments for other factors such as age.

**First Nations Australians:** Used interchangeably with Aboriginal and Torres Strait Islander people in this report.

**hospitalisation (separation):** An episode of care for an admitted patient that can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change of care type (for example, from acute care to palliative care).

**non-Indigenous Australians:** People who indicated that they are not of Aboriginal or Torres Strait Islander descent. Compare with other Australians.

**other Australians:** Includes both non-Indigenous people and those whose First Nations status is not known. Compare with non-Indigenous Australians.

**periocular area** is the area surrounding the eyeball but within the orbit.

**periorbital** is a term that describes the tissue around the eye.

**separation:** See hospitalisation.

**trachoma treatment coverage:** The proportion of active cases and household and/or community contacts requiring azithromycin treatment according to CDNA National Guidelines for the public health management of trachoma (CDNA, 2014).

**trichomatous trichiasis (trichiasis):** at least one eyelash from the upper eyelid touches the eyeball, or evidence of recent epilation of in-turned eyelashes from the upper eyelid (World Health Organization, 2019).

**vision impairment:** Presenting distance visual acuity of  $<6/12$  in the better eye.

**vision loss:** Vision impairment plus blindness.

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For more information, see [Eye Health measures for Aboriginal and Torres Strait Islander people 2024](#).

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