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Eye health workforce in Australia

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Authoritative information and statistics to promote better health and wellbeing

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Digital and Media Communications Unit
Australian Institute of Health and Welfare
GPO Box 570
Canberra ACT 2601
Tel: (02) 6244 1000
Email: info@aihw.gov.au

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Abbreviations

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
ANZSCO	Australian and New Zealand Standard Classification of Occupations
FTE	full-time equivalent
LFS	(AIHW) Labour Force Survey
NHWDS	(AIHW) National Health Workforce Data Set
NRAS	National Registration and Accreditation Scheme
NSW	New South Wales
NT	Northern Territory
Qld	Queensland
SA	South Australia
Tas	Tasmania
Vic	Victoria
WA	Western Australia
WHO	World Health Organization

Symbols

–	nil or rounded to zero
. .	not applicable
n.a.	not available
n.p.	not publishable because of small numbers, confidentiality or other concerns about the quality of the data

Summary

Nearly 12 million Australians (54% of the total population) reported having one or more long-term eye condition in the Australian Bureau of Statistics 2011–12 National Health Survey. A range of occupations are involved in diagnosing and managing these conditions. This report examines the size and characteristics of the eye health workforce (which includes ophthalmologists, optometrists and allied ophthalmic personnel). It updates the analysis provided in *Eye health labour force in Australia, August 2009* (AIHW 2009), and provides baseline data for a set of national indicators.

There is no single comprehensive data source on the eye health workforce in Australia, and complete data are not available for all occupations. This report draws on data from the Australian Institute of Health and Welfare's National Health Workforce Data Set for optometrists and ophthalmologists; the Australian Bureau of Statistics' Census of Population and Housing for optical dispensers, orthoptists and optical mechanics; and from professional organisations for orientation and mobility specialists and occupational therapists specialising in eye health.

While these data sources cover several different periods, 2011 is a common year in most, so it is the reference year used for comparison across occupations in the workforce. The baseline year required for the indicators is 2010 so these data are provided as well.

Key findings

In 2011, an estimated 10,916 people were employed in the eye health workforce:

- 4,481 optical dispensers (16.9 full-time equivalent (FTE) per 100,000 population)
- 4,034 optometrists (17.1 FTE per 100,000)
- 828 ophthalmologists (3.9 FTE per 100,000)
- 674 orthoptists (2.5 FTE per 100,000)
- 651 optical mechanics (2.9 FTE per 100,000)
- 158 orientation and mobility specialists (0.6 FTE per 100,000)
- 90 occupational therapists specialising in eye health (0.3 FTE per 100,000).

Optometrists and optical dispensers combined made up the majority of the eye health workforce (78.0%) in 2011. Ophthalmologists had the lowest proportion of females, at 17.4%. The next lowest were optical mechanics, with one-third (32.9%) being female. Around half (47.8%) of all optometrists were female. The other occupations were mostly female.

In 2011, over three-quarters of the eye health workforce worked in *Major cities* (78.6%), though this varied by occupation, from 74.7% of optical dispensers to 89.9% of optical mechanics. Overall, 70.2% of the Australian population were living in *Major cities* in 2011.

The eye health workforce grew by nearly 25% between 2006 and 2011. Growth was greatest for optical dispensers (37%). The Australian population grew by almost 29% over the same period.

In 2010, based on Australian Government and World Health Organization definitions, the eye health workforce in Australia was estimated at 11,173 people, comprising 3,899 optometrists, 810 ophthalmologists and 6,464 allied ophthalmic personnel.

1 Introduction

Nearly 12 million Australians (54% of the total population) reported having one or more long-term eye condition in the Australian Bureau of Statistics' (ABS's) 2011–12 National Health Survey (ABS 2012).

The Australian Government developed a National Framework for Action to Promote Eye Health and Prevent Avoidable Blindness and Vision Loss in 2005. The implementation plan for this framework, endorsed in September 2014, requires that data sources for a series of performance indicators be identified. With a baseline of 2010, these indicators aim to monitor:

- prevalence of avoidable visual impairment
- cataract surgery rate and coverage
- workforce capacity (DoH 2014).

These indicators align with indicators in the World Health Organization's (WHO's) Universal eye health: a global action plan (2014–2019), against which Australia (as a member of WHO) has committed to report by 2019 (WHO 2013).

Information relating to the prevalence of avoidable visual impairment and to cataract surgery rates and coverage in Australia is available on the Australian Institute of Health and Welfare's (AIHW's) website at <http://www.aihw.gov.au/eye-health>.

This report focuses on the most recent available data on Australia's eye health workforce capacity. In doing so, it updates data presented in the AIHW's *Eye health labour force in Australia* (AIHW 2009). This 2009 report was largely based on data from the AIHW's Labour Force Survey (LFS) of medical professionals and nurses and midwives, and the 2006 ABS Census of Population and Housing (Census 2006).

Where possible, the number employed and the workforce characteristics are presented by remoteness area, as defined in the Australian Statistical Geography Classification remoteness structure (ABS 2011). In some cases, data have been combined for remoteness areas outside the *Major cities* area due to reliability and confidentiality concerns.

This report also provides workforce data for the 2010 year, as required to meet the Australian Government's reporting commitments for the implementation plan and the WHO's Universal eye health: a global action plan (2014–2019) (WHO 2013). These data have been modelled, as 2010 data were not available for most occupations.

Eye health workforce

A wide range of occupations deliver eye health care in Australia, including medical practitioners from a range of specialties, nurses, optometrists and pharmacists. Many of these occupations encounter eye health issues as one part of a broader role. For example, general practitioners treat eye health issues among a wide range of other health conditions.

A number of occupations, however, concentrate particularly on eye health. This specific group, referred to as the *eye health workforce* in this report, has been determined in consultation with the Department of Health and Vision 2020 Australia.

The composition of this group is consistent with the definitions of eye health occupations in the WHO's Universal eye health: a global action plan (2014–2019), which specifies the eye health workforce as:

- *ophthalmologists*
- *optometrists,* and
- *allied ophthalmic personnel*.

Box 1.1 provides more detail on the specific occupations included in the definition of the eye health workforce used in this report. The workforce comprises both registered health professionals and a range of occupations that are not subject to any mandatory registration process.

Box 1.1: Eye health workforce

- **Optical dispensers** fit and service optical appliances such as spectacle frames and lenses.
- **Optometrists** perform eye examinations and vision tests to determine the presence of visual, ocular and other abnormalities; ocular diseases; and systemic diseases with ocular manifestations. They also prescribe lenses, other optical aids, therapy and medication to correct and manage vision problems and eye diseases.
- **Ophthalmologists** provide diagnostic, treatment and preventative medical services related to diseases, injuries and deficiencies of the human eye and associated structures**.**
- **Orthoptists** diagnose and manage eye movement disorders and associated sensory deficiencies.
- **Optical mechanics** operate machines to grind, polish and surface optical lenses to meet prescription requirements and to fit lenses to spectacle frames.
- **Orientation and mobility specialists** assist people who are experiencing difficulties in moving about due to vision loss.
- **Occupational therapists who specialise in eye health** assess the functional limitations of people resulting from eye illnesses and disabilities, and provide therapy to enable them to perform their daily activities and occupations.
- **Ophthalmic assistants** undertake tasks such as visual acuity tests.
- **Ophthalmic nurses** have completed general nurse training as well as specialist training in the nursing care of patients with eye problems, whether in hospital, clinics or the community. These nurses test vision and perform other eye tests under medical direction.
- **Ocularists** fit, shape and paint ocular prostheses and show patients how to handle and care for them.
- **Optometric assistants** support optometrists within private clinics. They assist clients in selecting spectacle frames and appropriate sunglasses and undertake receptionist functions.

In this report, occupations in the eye health workforce are presented in order of size, from largest to smallest, based on available information on the number employed in 2011. This order should be considered indicative, as accurate data on the number employed for

ophthalmic assistants, ophthalmic nurses, ocularists and optometric assistants were not available.

Most of the definitions in Box 1.1 are based on the Australian and New Zealand Standard Classification of Occupations (ANZSCO), the occupation classification used to classify Census responses. For those occupations not specifically defined in the ANZSCO, definitions have been sourced from professional associations.

Structure of the report

This report provides an estimate of the size and characteristics of the eye health workforce in Australia, based on the data currently available.

Chapter 2 outlines methods, sources and limitations of data used in this report.

Chapter 3 presents the available data for each occupation. Every effort has been made to present consistent data across occupations; however, due to data limitations, this was not always possible.

Chapter 4 provides the workforce data required to meet the Australian Government's reporting commitments in relation to the implementation plan and the WHO's Universal eye health: a global action plan (2014–2019). These data are presented for the 2010 reference year. Where data were not available for that year, an estimate has been modelled, based on available data.

Chapter 5 assesses the availability and quality of data to update these estimates in the future. It also includes some options for data improvement.

2 Data sources and methods

This chapter provides information on data sources, and the methods used to compile workforce supply estimates. It details the quality issues associated with the available data and outlines the impact of these issues on the estimates included in the report.

Data sources

There is no single comprehensive data source on the eye health workforce, and complete data are not available for all occupations. Hence, the data collated for this report have been drawn from a range of sources that, in some cases, use different concepts and definitions. For some occupations, the concepts and definitions also differ from those used in the 2009 report (AIHW 2009). Comparisons with other data sources (for example, WHO data or other AIHW workforce outputs), across occupations and over time should be made with caution.

Data are presented for 2011 as data for most occupations were available for this year. For occupations where more recent data were available, this information is also provided in the relevant section of Chapter 3.

Throughout this report, the findings from the AIHW's previous eye health workforce report (AIHW 2009) are noted where relevant, although direct comparisons are often limited by data source differences.

While trends are presented in the occupation sections in Chapter 3, comparisons over time should be treated with caution and, in many cases, be considered as indicative only.

A list of the data used for the 2009 and 2016 reports is provided in Table 2.1. The data sources for this 2016 report are:

- the AIHW National Health Workforce Data Set (NHWDS) for ophthalmologists and optometrists
- the Census 2011 for optical dispensers, orthoptists and optical mechanics
- professional associations and organisations that employ eye health workers for data on orientation and mobility specialists, occupational therapists specialising in eye health, ophthalmic assistants, ophthalmic nurses, ocularists, optometric assistants and some supplementary data for orthoptists.

More detail regarding each of these data sources is provided in the sections that follow.

Table 2.1: Data used for eye health occupations, 2009 and current reports

Occupation	Data source/s for 2009 report	Data source/s for current report
Optical dispensers	Censuses 2001 and 2006	Census 2011
Optometrists	Censuses 2001 and 2006, Department of Health and Ageing: Medicare statistics	NHWDS, annual data for 2011 to 2014
Ophthalmic nurses	AIHW Nursing and Midwifery LFS	Professional association, for 2015 only; membership numbers only
Ophthalmologists	AIHW Medical LFS	NHWDS, annual data for 2011 to 2014
Orthoptists	Censuses 2001 and 2006	Census 2011, and professional association for 2012 and 2013
Optical mechanics	Censuses 2001 and 2006	Census 2011
Orientation and mobility specialists	n.a.	Professional association and organisations that employ eye health workers. Annual data, 2010 to 2014. Not all requested data items were available for all years.
Occupational therapists who specialise in eye health	n.a.	Professional association and organisations that employ eye health workers. Annual data, 2010 to 2014. Not all requested data items were available for all years.
Ophthalmic assistants	n.a.	Professional association. An estimate of the likely ratio of ophthalmic assistants relative to other ophthalmologists was provided. No data on specific characteristics were available.
Ocularists	n.a.	Professional association. Estimates of total employed numbers, based on 2015 association membership. No data on characteristics were available.
Optometric assistants	n.a.	Professional association. Descriptions of role and tasks were provided, but no data were available regarding number employed or characteristics.

Data sources for this report

AIHW National Health Workforce Data Set

The AIHW NHWDS contains information on demographics, employment characteristics, primary work location and work activity of health practitioners. It includes data on health practitioners who must register with their respective health practitioner board via the National Registration and Accreditation Scheme (NRAS), which was introduced on 1 July 2010. The data are collected each year when the practitioner renews their registration. At this time, they are asked both to provide the registration renewal information and to complete workforce survey. More information about the NHWDS can be found at <http://www.aihw.gov.au/workforce>.

Optometrists, ophthalmologists, ophthalmic nurses and occupational therapists are subject to NRAS registration. The AIHW NHWDS has annual information on ophthalmologists and optometrists from 2011 to 2014.

While data are also captured on registered nurses through the NHWDS, specific information on ophthalmic nurses is not available. Nurses can list a qualification related to eye health in their registration information, but it is not mandatory to provide information on qualifications. As a result, ophthalmic nurses cannot be reliably identified in the data.

Similarly, occupational therapists are subject to registration under the NRAS and information is available from the NHWDS for occupational therapists as a general group; however, the data do not allow identification of those who focus on eye health.

For the eye health occupations where data were sourced from the NHWDS, data include the number of registered and employed persons in each occupation, with selected workforce characteristics (for example, average age and average weekly hours worked) by state/territory and remoteness area.

Census

In the Census, each person (aged 15 or over) provides a text description of their occupation in the preceding week. Text descriptions are also provided for main tasks, employer business name and workplace address. Information relating to the broad industry in which the person worked is collected using a mix of list selections and text. This process is the same for both paper and online collection of Census information. (Online collection was introduced in 2011.) The ABS uses the information collected in the Census to classify the occupation of the person as described in the ANZSCO (Box 2.1).

Box 2.1: Australian and New Zealand Standard Classification of Occupations

The ANZSCO is a skill-based classification used to categorise all occupations and jobs in the Australian and New Zealand labour markets. The ANZSCO identifies a set of occupations covering all jobs in the two labour markets; defines these occupations according to their attributes; and groups them, based on their similarity (in terms of skill level and specialisation), into successively broader categories.

The ANZSCO has five hierarchical levels: major group, sub-major group, minor group, unit group, and occupation. The categories at the most detailed level of the classification are 'occupations' (ABS 2013).

As a self-reported collection, the Census relies on individuals to respond clearly. Occupation descriptions can be coded directly to an occupation in the ANZSCO, where the response has been entered exactly as required. Where an occupation description has been provided that is insufficient, but relevant task information has been supplied, the response can still be accurately allocated to an occupation. For example, a main job description of 'eye health worker' with task information of 'optical dispensing' would be coded to the optical dispenser occupation. In the absence of accurate occupation and task information (including blank responses), a business name and location may still support classification, but to a generic occupation (for example, 'worker—no additional information').

In relation to the eye health workforce, data for the occupations of orthoptist, optical dispenser and optical mechanic were sourced from the Census 2011. Data for ophthalmologist and optometrist occupations were also available from the Census, but were not used. As the NHWDS provides annually updated data, and coverage is based on mandatory registration rather than on self-reported information, the NHWDS was considered to be the most up-to-date and accurate source for these two professions.

For the remaining occupations, specific data were not available from the Census as the occupations were not separately identified within the ANZSCO.

For those eye health occupations where data were sourced from the Census, the data included the number of employed persons in each occupation, with selected workforce characteristics (for example, average age and average weekly hours worked) by state/territory and remoteness area.

Where Census data are used in this report, some cells within tables have been randomly adjusted by the ABS to avoid the release of confidential data. As a result, components may not always add to totals. No reliance should be placed on small cells as they are impacted by random adjustment, respondent and processing errors.

Professional associations and organisations employing eye health workers

Data were sought from professional associations and organisations employing eye health workers for a range of eye health occupations, including orientation and mobility specialists, occupational therapists specialising in eye health, ophthalmic assistants, ophthalmic nurses, ocularists, optometric assistants and orthoptists.

The information sought included membership numbers, definitions, qualifications information and general background for a range of occupations.

For data sourced through the professional associations and organisations employing eye health workers, there was no single, consistent data collection, so the responses vary in terms of timing, definitions and concepts, and include estimates.

Vision 2020 Australia, the peak eye health body, coordinated the collection of much of these data. As this collection was based on Vision 2020 Australia's voluntary membership, the data may not include the full number of employed eye health workers. The exact level and impact of under-coverage for data from this source are unknown.

A once-off survey of members conducted by Orthoptics Australia in late 2012 and early 2013 reported data on orthoptists comparable with data sourced from the Census 2011. The survey reported a range of characteristics similar to those included in AIHW workforce reports, such as the percentage of women, and average age. In this report, one data item (the percentage of orthoptists with an initial qualification gained in Australia) was used from the survey to supplement Census data.

For those eye health occupations where data were sourced from professional associations or organisations employing eye health workers, the extent to which data were available for measures of supply (such as the number employed, and FTE rates) and workforce characteristics varied widely across occupations. For some occupations, the number of employed workers has been estimated from reported data.

Eye health professional associations and organisations employing eye health workers that supplied data included CanDo4Kids (a South Australian charitable service provider, offering therapy and support to children and young people who are blind, vision impaired, deaf or hearing impaired), Guide Dogs Australia, the National Ophthalmic Nurses Association, the Ocularists Association of Australia, the Optical Dispensers and Manufacturers Association, Orthoptics Australia, the Royal Australian and New Zealand College of Ophthalmologists, the Royal Society of the Blind, the Royal Victorian Eye and Ear Hospital, Vision Australia and Vision 2020 Australia.

Comparisons of data sources for the current and previous eye health workforce reports

Similar to the current report, the AIHW's 2009 report on the eye health labour force in Australia used a range of data sources. The key sources for workforce supply data in the 2009 report were the ABS Censuses for 2001 and 2006; the AIHW LFS for medical practitioners, nurses and midwives; and state- and territory-based boards for the various

occupations. Detail on all sources was provided in Appendix A of the 2009 report (AIHW 2009).

The extent to which changes in data sources between the 2009 report and the current report may impact on comparability is discussed below.

Survey data for registered health professionals

The previous state- and territory-based registration system was replaced by the new national system (the NRAS) in 2010. In this process, the AIHW workforce surveys (LFS) were discontinued in 2009 and replaced by the supplementary workforce surveys administered as part of the NRAS, from 2011. Note that for occupations where data were sourced from workforce surveys in both the 2009 and 2016 reports, no data were available for the 2010 year, which was the year of transition to the new registration process.

While the past and current data from AIHW sources are comparable at the broad level, in the transition to the NRAS, some discontinuities have occurred. Changes in data collection methods, including survey design and questionnaire content, have affected comparability over time for some occupations.

Data presented for ophthalmologists are comparable between the 2009 report and this report. While some detailed data items changed due to changes in questionnaire design, the data reported for ophthalmologists in this report are comparable with past data.

The LFS provided data for ophthalmic nurses in the past, where nurses reported ophthalmology as their main area of practice. As noted above, the NHWDS does not capture ophthalmology as an area of practice for nurses. An alternative source has not been identified.

Data were not routinely captured on optometrists through the LFS, so the 2009 report presented data from a range of alternative sources. From the introduction of the NRAS, optometry data have been available from the NHWDS.

Census

Changes to Census forms, or changes to the way data are processed, including review of underlying classifications, can have an impact on the availability and appropriateness of data sourced from the Census.

For occupation questions in the Census, there were no changes in the questions asked, or in the ordering of those questions, between the Census 2006 and the Census 2011.

However, there were changes to the underlying occupation classification, the ANZSCO, in 2009. These included a minor change to the description of orthoptist, which reflected changes to the registration/licensing arrangements for this occupation. This is not expected to have any impact on the number of persons classified as orthoptists.

Similarly, a small number of changes were made between 2006 and 2011 concerning the coding of specific responses to orthoptists and optical dispensers, but these had minimal impact on the counts of number employed for these two occupations.

Methods

One key aim of this report is to better understand the supply of the eye health workforce to the Australian population. Ideally, full-time equivalent (FTE) rates would be used to estimate

this supply. FTE is a measure calculated by dividing an estimate of the total hours worked by employees in an occupation in a week by an estimate of the standard hours worked each week in that occupation. The number of FTE is then compared with the size of the population to get the FTE-per-person rate. In many cases, however, there are limited data on hours worked, so the estimates of supply in this report focus on the number employed, but include FTE rates where possible.

All FTE rates are expressed in terms of both per million and per 100,000 population, based on Australian resident population estimates sourced from the ABS (see 'Appendix B' for the estimates used). This is to provide consistency with the WHO's Universal eye health: a global action plan (2014–2019) as well as to enable comparison with Australian data for other health occupations.

The definition of a standard working week used to calculate FTE rates was 40 hours for ophthalmologists and 38 hours for all other professions. This is consistent with other Australian health workforce data produced by the AIHW.

Estimates included in the appendix tables have been compiled based on the available data. In some cases, for data sourced from eye health professional associations and organisations that employ eye health workers, data were not available for all items, or across all states and territories, in all years. As a result, totals and subtotals presented in the tables may not represent all workers included in these occupations.

3 Eye health workforce

This chapter presents the available data on each occupation in the eye health workforce. It begins with an overview of the entire workforce and then provides more detail about each occupation. Occupations appear in size order, from largest to smallest, based on the number employed in 2011.

Overview

There were an estimated 10,916 people employed in the eye health workforce in 2011. Optical dispensers and optometrists made up the majority of the work force (41.0% and 37.0%, respectively), with the smallest group being occupational therapists who focused specifically on eye health.

The data suggest that eye health personnel worked between 31 and 42 hours, on average, each week in 2011, with ophthalmologists working the most (42 hours) and occupational therapists working the least (31 hours).

Only 17.4% of ophthalmologists were female, the lowest proportion of females in all eye health occupations for which this information was available. The next lowest was for optical mechanics (32.9%). Around half (47.8%) of optometrists were female. The rest of the occupations were mostly female (Table 3.1).

The numbers of FTE for each state and territory are shown in Table 3.2. FTE rates per 100,000 population, calculated for those occupations with reliable state or territory data, were highest in New South Wales and lowest in the Northern Territory (Table 3.3). New South Wales had the highest FTE rates for optometrists, ophthalmologists and orthoptists, and the Northern Territory had the lowest rates for optical dispensers, ophthalmologists and optical mechanics. However, these data do not account for mobility in the workforce; eye health workers may travel to the Northern Territory to provide services and this would not be captured in the data (Table 3.3).

Over three-quarters of the eye health workforce worked in *Major cities* (78.6%), though this varied by occupation, from 74.7% of optical dispensers to 89.9% of optical mechanics (Table 3.4).

For all occupations where remoteness area data were available, FTE rates per 100,000 population declined with increasing remoteness (Table 3.5).

Table 3.1: National estimates of the eye health workforce 2011[(a)]

	Number registered	Number employed	Average number of weekly hours worked	FTE number	FTE rate[(b)]	Average age (years)	Aged under 30 (%)	Aged 50 and over (%)	Women (%)	Indigenous (%)
Optical dispensers	. .	4,481	32	3,774	16.9	37	35.4	19.9	74.0	0.6
Optometrists	4,505	4,034	36	3,810	17.1	41	20.4	26.8	47.8	0.3
Ophthalmologists	910	828	42	878	3.9	53	—	56.9	17.4	0.1
Orthoptists	. .	674	31	550	2.5	36	39.2	17.1	88.7	—
Optical mechanics	. .	651	37	634	2.9	41	17.8	26.8	32.9	0.5
Orientation and mobility specialists	. .	158	34	141	0.6	42	15.8	27.8	71.5	n.p.
Occupational therapists specialising in eye health	. .	90	31	74	0.3	35	40.0	16.7	91.1	n.p.
Total[(c)]	**5,415**	**10,916**	**n.p.**	**9,861**	**n.p.**	**n.p.**	**n.p.**	**n.p.**	**n.p.**	**n.p.**

(a) The data in this table are estimates of the characteristics of the national eye health workforce. For the number employed and the FTE number, they represent a minimum estimate of the actual number, as data were incomplete across all states/territories and occupations; so the FTE rate is an estimate of national supply, based on the states and territories for which data were available. For orientation and mobility specialists and occupational therapists specialising in eye health, data were missing for Western Australia. Data for orientation and mobility specialists and occupational therapists specialising in eye health were sourced from professional associations and organisations employing eye health workers and may not include all workers employed in the sector. See Chapter 2 for quality considerations.

(b) FTE rate per 100,000 population. Based on an average working week of 40 hours (ophthalmologists), or 38 hours (all other occupations).

(c) Totals have been stated for number registered, number employed and FTE number only. No totals have been included for other characteristics as there are inconsistencies in the data sources, which means that the estimates should not be combined across occupations.

Sources: ABS Census of Population and Housing 2011 (optical dispensers, optical mechanics and orthoptists); AIHW NHWDS (ophthalmologists and optometrists); professional associations and organisations employing eye health workers (occupational therapists specialising in eye health, and orientation and mobility specialists).

Table 3.2: Eye health workforce, FTE number employed by state and territory, 2011[(a)]

	State/territory								
	NSW	**Vic**	**Qld**	**WA**	**SA**	**Tas**	**ACT**	**NT**	**Australia**[(b)]
Optical dispensers	1,243	860	756	407	307	95	72	27	3,774
Optometrists	1,332	976	791	321	222	77	57	32	3,810
Ophthalmologists	341	210	147	79	66	16	14	5	878
Orthoptists	266	186	47	17	11	16	11	3	550
Optical mechanics	169	204	115	26	92	15	4	2	634
Orientation and mobility specialists	64	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	141
Occupational therapists specialising in eye health	27	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	74
Total	**3,441**	**2,503**	**1,875**	**850**	**721**	**224**	**168**	**70**	**9,860**

(a) Includes only occupations where data were sourced from the Census or the AIHW NHWDS. For occupational therapistsspecialising in eye health, and orientation and mobility specialists, data were sourced from professional associations and organisations employing eye health workers, and coverage was incomplete for some states.

(b) For data sourced from the NHWDS (ophthalmologists and optometrists), the Australia total includes people who did not state or adequately describe their state or territory, and those who were overseas. Therefore, state and territory totals may not sum to the national total.

Notes

1. FTE number calculated based on an average working week of 40 hours (ophthalmologists), or 38 hours (all other occupations).
2. All figures sourced from the Census reference underlying data that have been randomly adjusted by the ABS to allow release of confidential data.

Sources: ABS Census of Population and Housing 2011 (optical dispensers, optical mechanics and orthoptists); AIHW NHWDS (ophthalmologists and optometrists).

Table 3.3: Eye health workforce, FTE rates by state and territory, 2011[(a)]

	State/territory								
	NSW	**Vic**	**Qld**	**WA**	**SA**	**Tas**	**ACT**	**NT**	**Australia**
Optical dispensers	17.2	15.5	16.9	24.8	13.0	18.5	n.p.	n.p.	16.9
Optometrists	18.4	17.6	17.7	13.6	13.6	15.1	15.6	14.0	17.1
Ophthalmologists	4.7	3.8	3.3	3.4	4.1	n.p.	n.p.	n.p.	3.9
Orthoptists	3.7	3.4	1.0	n.p.	n.p.	n.p.	n.p.	n.p.	2.5
Optical mechanics	2.4	3.7	2.6	1.6	4.0	n.p.	n.p.	n.p.	2.8
Orientation and mobility specialists	0.9	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	0.6
Occupational therapists specialising in eye health	0.4	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	0.3

(a) Includes only occupations where data were sourced from the Census or the AIHW NHWDS. For occupational therapists specialising in eye health, and orientation and mobility specialists, data were sourced from professional associations and organisations employing eye health workers, and coverage was incomplete for some states.

Notes

1. FTE rate per 100,000 population, calculated based on an average working week of 40 hours (ophthalmologists), or 38 hours (all other occupations).
2. FTE rates have not been published where the number employed for any occupation is fewer than 30 people.
3. All figures sourced from the Census reference underlying data that have been randomly adjusted by the ABS to allow release of confidential data.

Sources: ABS Census of Population and Housing 2011 (optical dispensers, optical mechanics and orthoptists); AIHW NHWDS (ophthalmologists and optometrists).

Table 3.4: Eye health workforce, FTE number employed by remoteness area, 2011[(a)]

	Major cities	Inner regional	Outer regional	Remote	Very remote[(b)]	Australia[(c)]
Optical dispensers	2,818	704	233	17	—	3,773
Optometrists	2,975	580	226	19	8	3,810
Ophthalmologists	734	109	29	n.p.	n.p.	878
Orthoptists	486	47	14	—	—	547
Optical mechanics	572	57	15	—	—	636
Total[(a)]	**7,585**	**1,496**	**517**	**36**	**8**	**9,644**

(a) Includes only occupations where data were sourced from the Census or the AIHW NHWDS. For occupational therapists specialising in eye health and for orientation and mobility specialists, data were sourced from professional associations and organisations employing eye health workers, and remoteness area were not available.

(b) Includes migratory areas.

(c) For data sourced from the NHWDS (optometrists and ophthalmologists), the Australia total includes people who did not state or adequately describe their state or territory, and those who were overseas. Therefore, remoteness area totals may not sum to the national total.

Note: All figures sourced from the Census reference underlying data that have been randomly adjusted to allow release of confidential data.

Sources: ABS Census of Population and Housing 2011 (optical dispensers, optical mechanics and orthoptists); AIHW NHWDS (ophthalmologists and optometrists).

Table 3.5: Eye health workforce, FTE rates by remoteness area, 2011[(a)]

	Major cities	Inner regional	Outer regional	Remote	Very remote[(b)]	Australia
Optical dispensers	18.0	17.1	11.5	n.p.	n.p.	16.9
Optometrists	19.0	14.1	11.2	n.p.	n.p.	17.1
Ophthalmologists	4.7	2.6	n.p.	n.p.	n.p.	3.9
Orthoptists	3.1	1.2	n.p.	—	n.p.	2.5
Optical mechanics	3.6	1.4	n.p.	—	n.p.	2.8

(a) Includes only occupations where data were sourced from the Census or the AIHW NHWDS. For occupational therapists specialising in eye health and for orientation and mobility specialists, data were sourced from professional associations and organisations employing eye health workers, and remoteness area data were not available.

(b) Includes migratory areas.

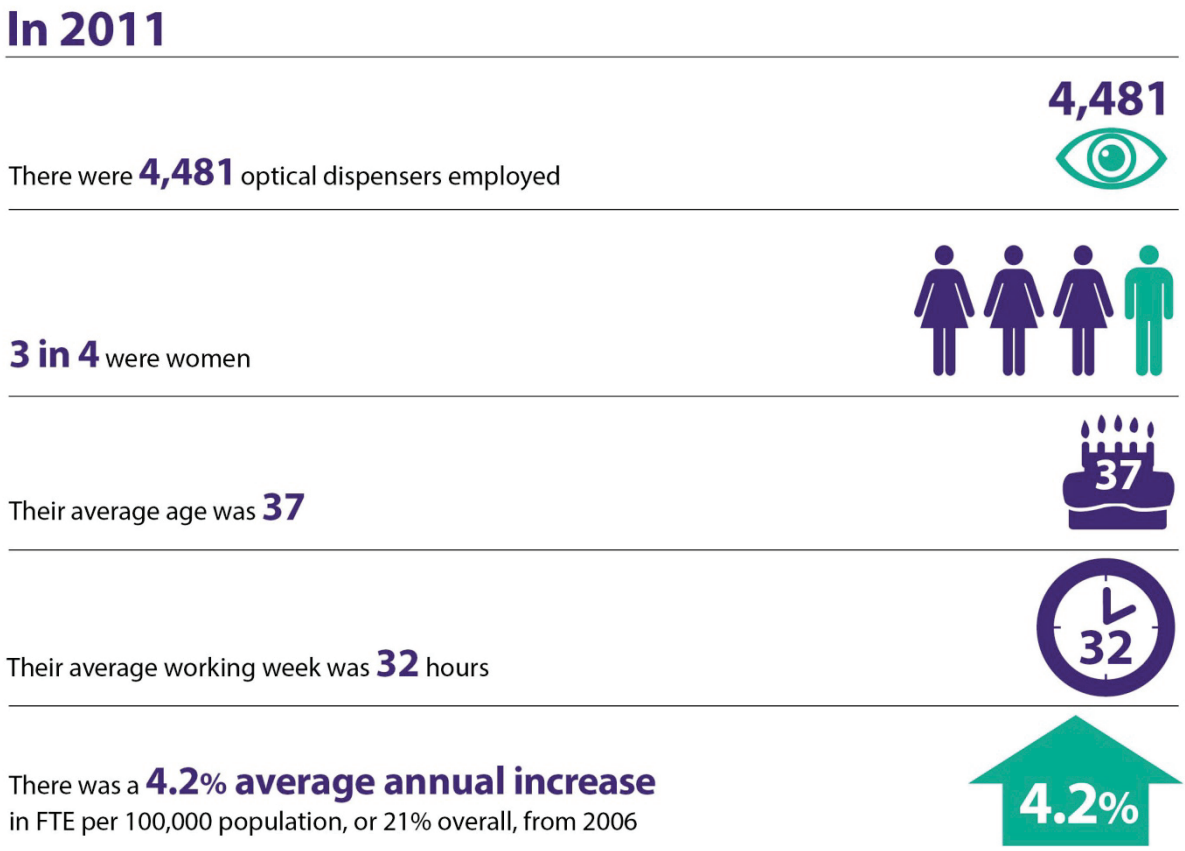
Notes

1. FTE rate per 100,000 population, calculated based on an average working week of 40 hours (ophthalmologists), or 38 hours (all other occupations).
2. FTE rates have not been published where the number employed for any occupation is fewer than 30 people.
3. All figures sourced from Census reference underlying data that have been randomly adjusted to allow release of confidential data.

Sources: ABS Census of Population and Housing 2011 (optical dispensers, optical mechanics and orthoptists); AIHW NHWDS (ophthalmologists and optometrists).

Optical dispensers

Optical dispensers interpret optical prescriptions and fit and service optical appliances such as spectacle frames and lenses (ABS 2013).



Source: Table A1.

Data for optical dispensers were sourced from the ABS Census of Population and Housing for 2011. For the 2009 report (AIHW 2009), data were sourced from Censuses 2001 and 2006. While Census questions and the classification of responses have changed over time, data for optical dispensers in this report are comparable with data in the 2009 report.

Based on Census data, in 2011, there were 4,481 optical dispensers employed, or 16.9 FTE employed per 100,000 population, or 169 FTE per million population. This was an increase of 21% in the FTE rate, from 14.3 per 100,000 (143 FTE per million) in Census 2006 (Table A1).

On average, optical dispensers reported working 32 hours each week, down from 34 hours in 2006.

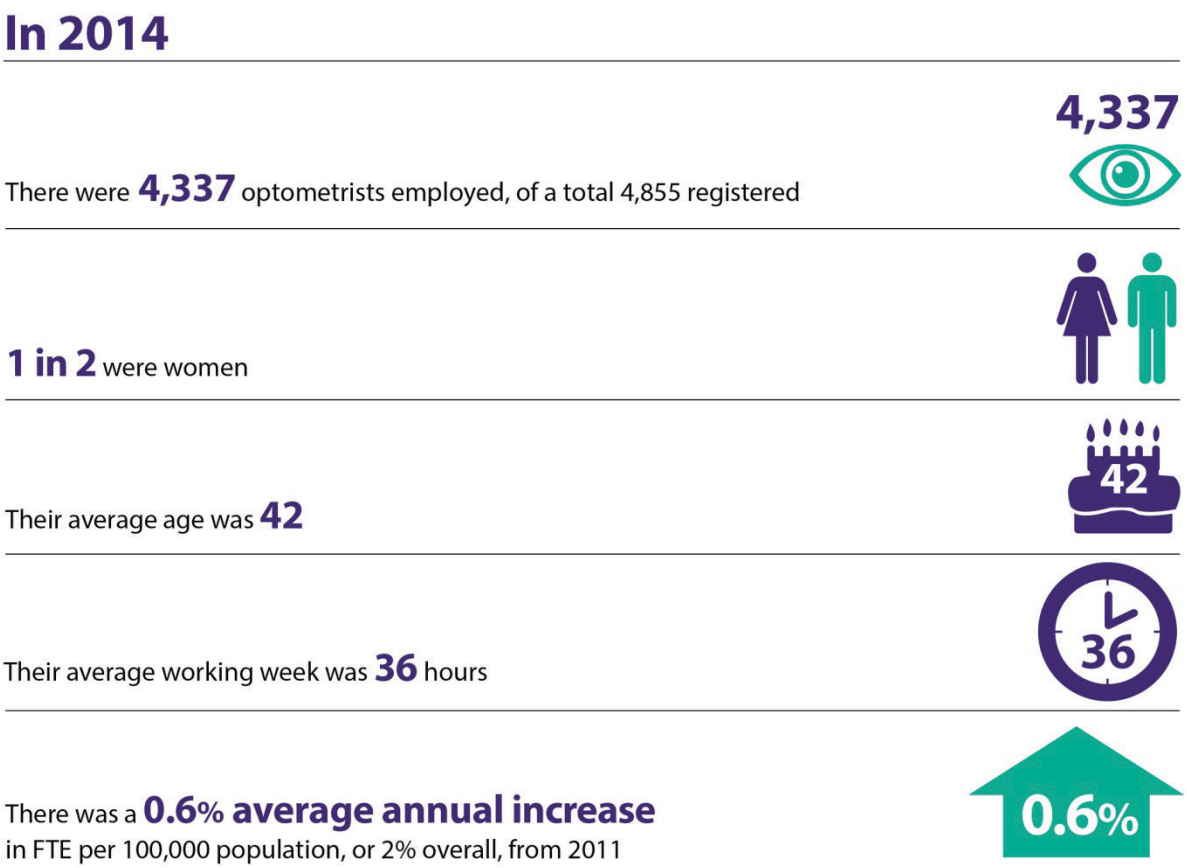
In 2011, 1 in 5 were aged 50 and over (20%) and 1 in 3 were aged 30 or under (35%). In 2006, about 1 in 10 were aged 55 and over (9%). Their average age was the same in 2006 and 2011, namely 37. The majority of optical dispensers were women (74%), as for 2006 (70%).

Indigenous status was not reported in 2006. Fewer than 1% reported being Indigenous in 2011 (Table A1).

In 2011, most (75%) optical dispensers reported working in *Major cities* (Table A2). This was the same as in 2006. In both 2006 and 2011, the FTE rate declined with remoteness.

Optometrists

Optometrists perform eye examinations and vision tests to determine the presence of visual, ocular and other abnormalities, ocular diseases and systemic diseases with ocular manifestations, and prescribe lenses, other optical aids, therapy and medication to correct and manage vision problems and eye diseases (ABS 2013).



Source: Table A6.

Data for optometrists were sourced from the AIHW NHWDS for this report due to the scope of the data available. For the 2009 report (AIHW 2009), data were sourced from the Census and Medicare for 2001 and 2006 as no data were available from the NHWDS at that time.

The Medicare data are not repeated here as they are not comparable with data from the other data sources. Limited comparisons are drawn between Census and NHWDS data where the concepts and definitions underlying the measures of workforce characteristics are similar.

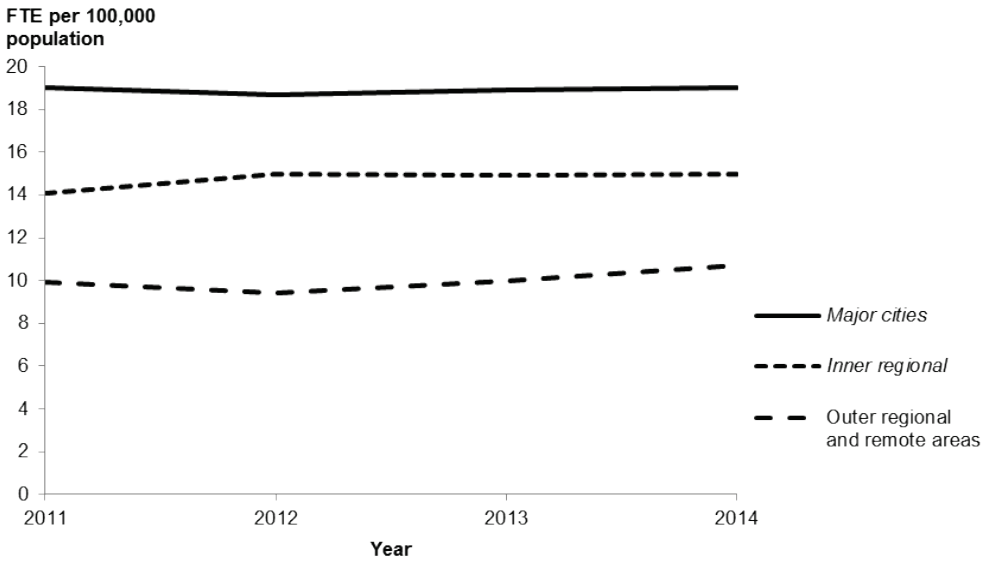
From the NHWDS data, in 2014, there were 4,337 optometrists employed, 89% of all those registered (total 4,855) (Table A6). This is an increase of 8%, or 303 people, since 2011 when 4,034 optometrists were employed. The number employed in 2014 is 41% more than reported in the Census 2006; however, these measures of supply are not directly comparable, as the NHWDS figures are based on registration data, while Census figures are based on self-reported employment information.

Based on NHWDS data, supply of optometrists did not change substantially from 17.1 FTE per 100,000 population (171 FTE per million) in 2011 to 17.4 FTE per 100,000 (174 FTE per million) in 2014. Optometrists reported working an average of 36 hours per week in 2014, the

same as in 2011. About half of all optometrists were women in both 2011 and 2014 (48% and 50%, respectively) (tables A3 and A6).

The average age of optometrists was about the same over time. In 2014, the average age was 42, compared with 41 in 2011. Over a quarter (28%) were aged 50 and over in 2014, about the same as in 2011 (tables A3 and A6). Most (78%) optometrists worked in *Major cities* in 2014, about the same as in 2011 (79%) (tables A7 and A10).

Trends in FTE rates across remoteness areas from 2011 to 2014 are presented in Figure 3.1. Over this period, the FTE rates for *Major cities* were about the same—at 18.7 FTE per 100,000 population (187 FTE per million) in 2012, and 19.0 per 100,000 population (190 per million) in 2013 and 2014. There was a similar trend for *Inner regional* areas, with FTEs varying between 14.1 per 100,000 (141 per million) in 2011 and 15.0 per 100,000 (150 per million) in both 2012 and 2014. *Outer regional*, *Remote* and *Very remote* areas have been combined as 'Outer regional and remote areas', as the numbers of optometrists working in *Remote* and *Very remote* areas are too small to calculate reliable FTEs. Rates for combined 'Outer regional and remote areas' varied from 9.4 to 10.7 FTE per 100,000 population (94 to 107 per million) over the period (tables A7 to A11).



Notes

1. FTE based on a 38-hour week.
2. 'Outer regional and remote areas' combines *Outer regional*, *Remote* and *Very remote* areas, as the numbers of optometrists working in *Remote* and *Very Remote* areas are too small to calculate reliable FTEs at this level.
3. 'Outer regional and remote areas' includes migratory areas.

Sources: Tables A7 to A11.

Figure 3.1: Employed optometrists: FTE rate, by remoteness area, Australia 2011 to 2014

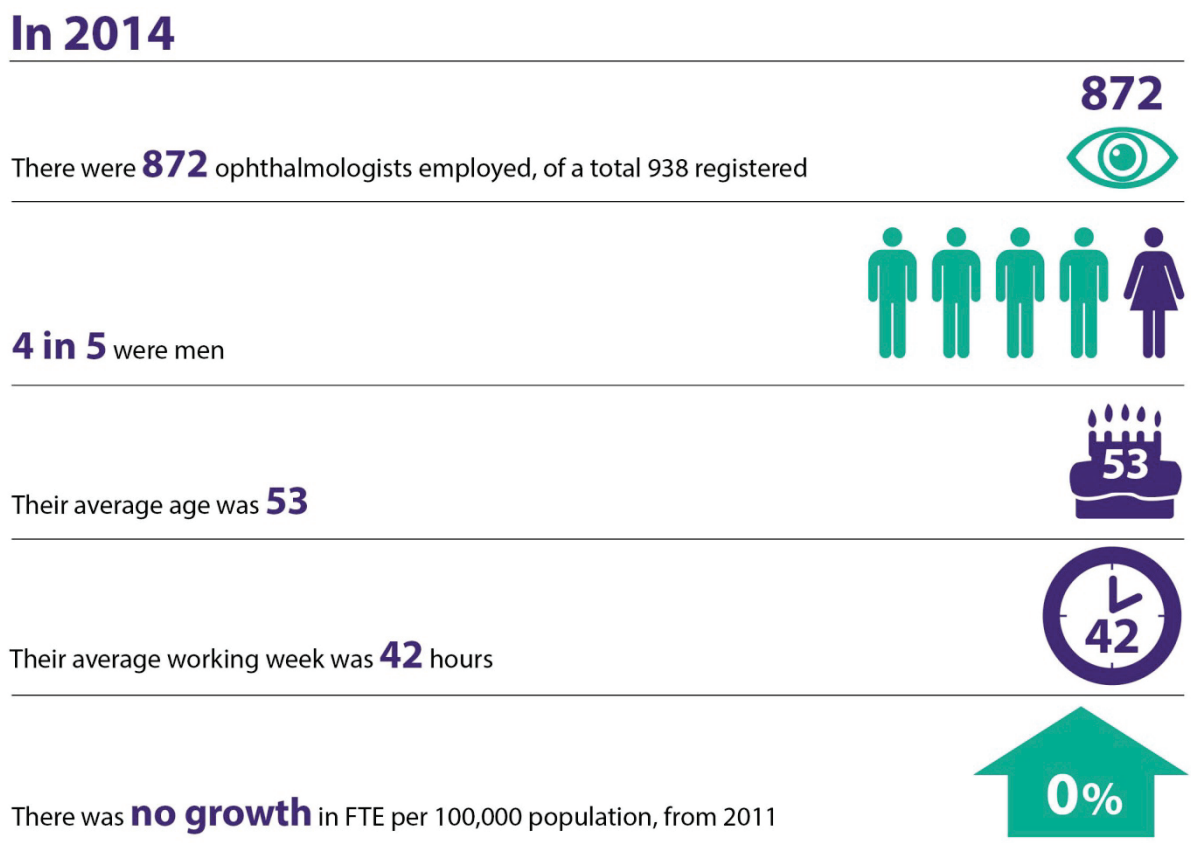
In 2014, the average age was highest in *Outer regional* areas, at 44, and lowest in *Major cities* at 41. In 2011, the average age was also highest in *Outer regional* areas at 43, and lowest in *Major cities* at 40. In 2006, the highest average age was 50 in *Remote* and *Very remote* areas, and the lowest was 39 in *Major cities*.

On average, in 2014, optometrists in 'Outer remote and remote areas' reported working the most weekly hours (38 hours) and those in *Major cities* the least (36). In 2006, the most hours were worked in *Outer regional* areas (39 hours) and the least in *Remote* and *Very remote* areas (31).

Fewer than 1% of all optometrists reported being Indigenous in 2014 and 2011(tables A3 and A6). Indigenous status was not reported in 2006.

Ophthalmologists

Ophthalmologists are medical specialists who provide diagnostic, treatment and preventative medical services related to diseases, injuries and deficiencies of the human eye and associated structures (ABS 2013).



Source: Table A15.

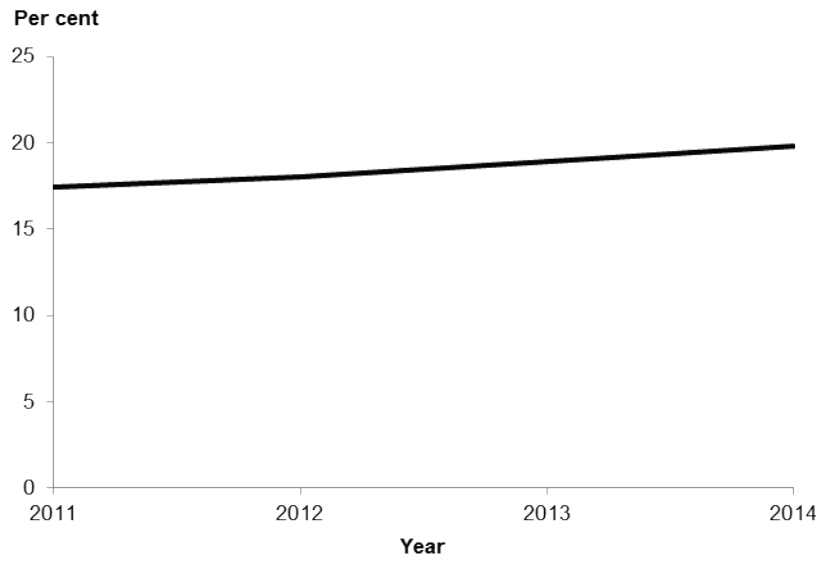
Data for ophthalmologists were sourced for this report from the AIHW NHWDS. For the 2009 report, data were sourced from the Census, AIHW LFSs and Medicare, for 2001 and 2006. No comparisons are made in this report between the NHWDS data and Census or Medicare data. Given that the development of the NHWDS was based on the LFS, it retained much of the same information, so the data are generally comparable.

In 2014, there were 872 ophthalmologists employed, or 93% of all those registered (total 938). This is an increase of 5%, or 44 people, since 2011 when 828 were employed (tables A12 and A15). The 2014 employed figure is around 13% higher than the 769 employed ophthalmologists reported in the 2006 LFS data.

The supply of ophthalmologists has been steady, at 3.9 FTE per 100,000 population (39 FTE per million) from 2011 to 2014 (Table A15). Supply was at 4.0 FTE per 100,000 (40 FTE per million) in 2006.

On average, ophthalmologists reported working 42 hours each week in 2014, the highest weekly average of the eye health workforce. In 2011, ophthalmologists reported working 42 hours a week on average; 80% of them were men and 57% were aged 50 or over (tables A12 and A15). In 2006, from LFS data, about 84% of ophthalmologists were men and 36% were aged 55 and over (Figure 3.2).

In 2014, only 20% of ophthalmologists were women, compared with 17% in 2011 (Figure 3.2). In 2006, 16% were women, up from 12% in 2001.



Sources: Tables A12 to A15.

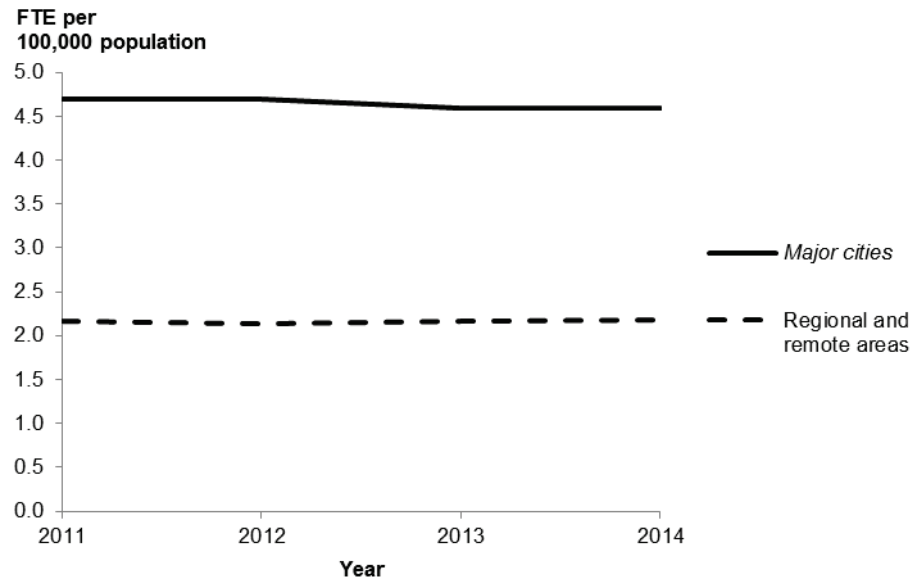
Figure 3.2: Employed ophthalmologists, percentage women, Australia, 2011 to 2014

In 2014, the majority (84%) of employed ophthalmologists reported working in *Major cities*, the same as in 2011 (85%) (tables A16 and A19). In 2006, 82% reported working in *Major cities*.

In 2014, the average age reported by those ophthalmologists working in *Major cities* and *Inner regional* areas was the same as the national average, namely 53. In 2011, the average age was lower in *Inner regional* areas at 52, compared with *Major cities* (at 54) and the national average of 57 (tables A16 and A19). In 2006, the highest average age was 52 (in *Major cities*) and the lowest was 44 (in *Outer regional* areas).

According to NHWDS data, at the national level, FTE rates for ophthalmologists remained the same from 2011 to 2014, at 3.9 FTE per 100,000 population (39 FTE per million). FTEs for *Major cities* were almost the same across the period, at 4.7 FTE per 100,000 population (47 per million) in 2011 and 2012, and 4.6 FTE per 100,000 (46 per million) in 2013 and 2014. FTE rates for *Inner regional* areas were steady at 2.6 FTE per 100,000 (26 per million) throughout the period (tables A16 to A19).

FTE rates for *Outer regional*, *Remote* and *Very remote* areas could not be reliably calculated due to the small numbers of ophthalmologists working in those areas. FTE rates for *Major cities* are compared with FTE rates for all regional and remote areas combined in Figure 3.3.



Notes

1. FTE based on a 40-hour week.
2. *Inner regional*, *Outer regional*, *Remote* and *Very remote* areas have been combined and are presented as 'Regional and remote areas'. FTE rates for *Outer regional*, *Remote* and *Very remote* areas cannot be reliably calculated, due to quality concerns. Only small numbers of ophthalmologists were working in all of these areas.

Sources: tables A16 to A19.

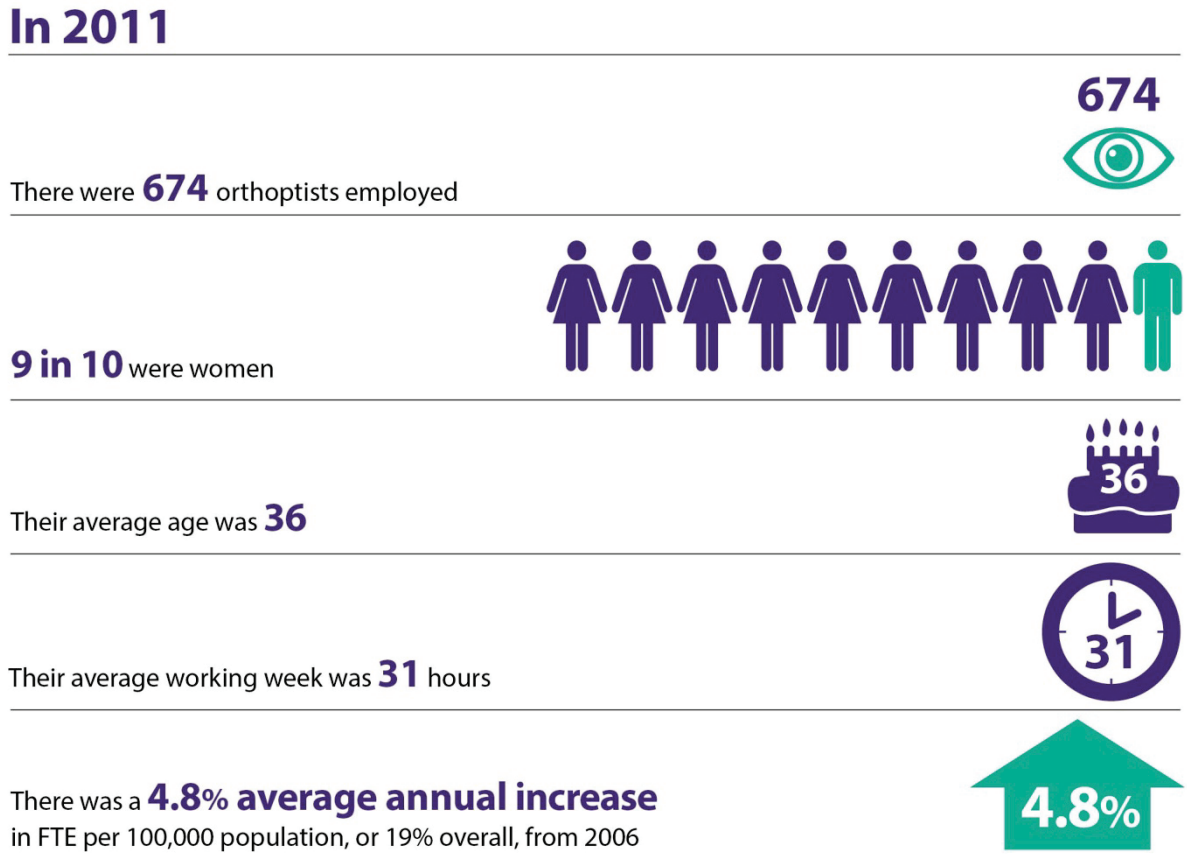
Figure 3.3: Employed ophthalmologists, FTE rates by remoteness area, Australia, 2011 to 2014

On average, in 2014, ophthalmologists in *Major cities* and *Inner regional* areas reported working 42 hours per week, the same as the national average (Table A19). This varies from 2011 when those in *Inner regional* areas reported working more hours than those in *Major cities* (45 and 42 hours, respectively). In 2006, the most hours worked were reported in *Outer regional* areas (59 hours) and the least in *Major cities* (43 hours).

Fewer than 1% of ophthalmologists reported being Indigenous in 2014 and 2011 (tables A16 and A19). Indigenous status was not reported in 2006.

Orthoptists

Orthoptists diagnose and manage eye movement disorders and associated sensory deficiencies (ABS 2013).



Source: Table A20.

Orthoptists data were sourced from the Census 2011, with one additional data item (percentage with initial qualification in Australia) sourced from a professional association. For the 2009 report (AIHW 2009), data were sourced from the Censuses 2001 and 2006. While Census questions and classification of responses have changed over time, data for orthoptists in this report are comparable with data in the 2009 report.

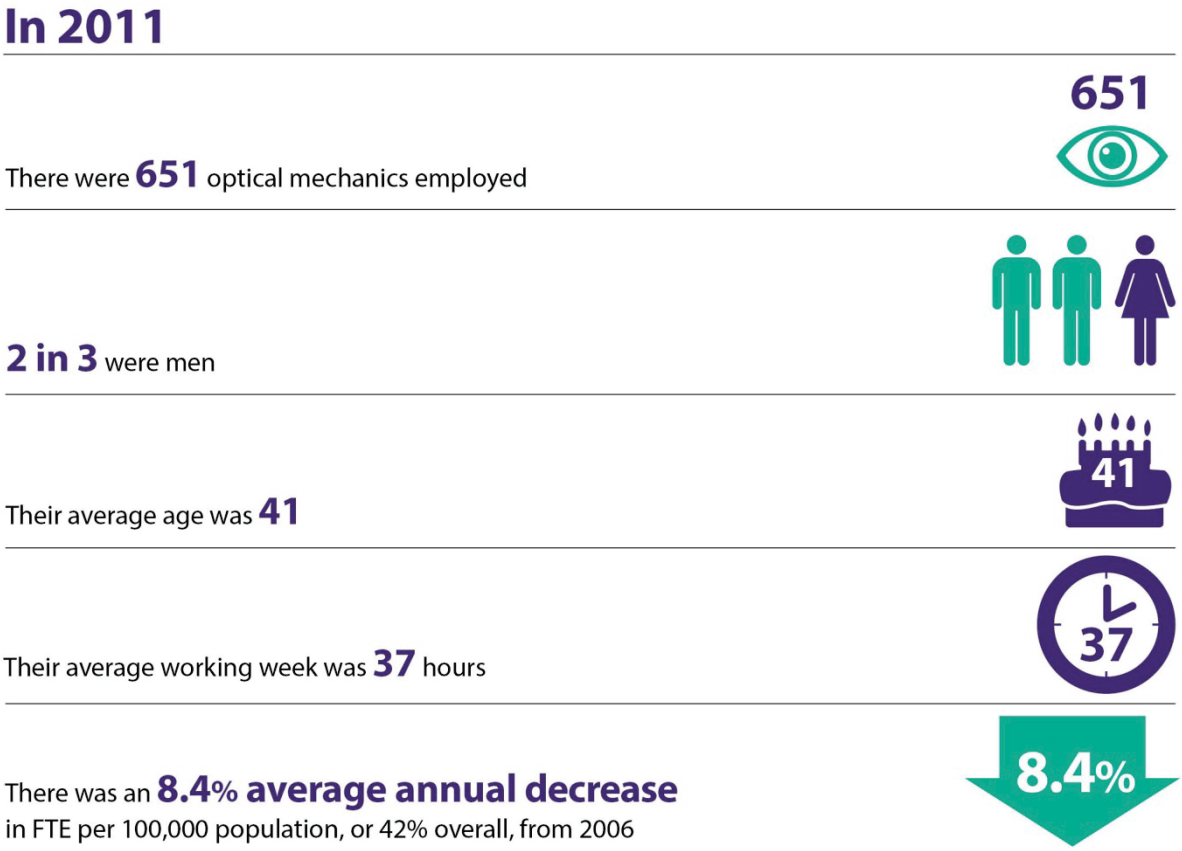
According to Census data, in 2011, there were 674 orthoptists employed. This was 2.5 FTE employed per every 100,000 population, or 25 FTE per million (Table A20). This was an increase in supply of 19% since 2006, when the FTE rate was 2.1 per 100,000 population (21 per million).

On average, orthoptists reported working 31 hours each week in 2011. This was about the same as reported in 2006 (32 hours). The majority of orthoptists were women in 2011 (89%), about the same as in 2006 (90%). The average age was 36 in both 2006 and 2011 (Table A20). Most orthoptists (96%) reported their country of initial qualification as Australia (Table A20).

The majority (89%) of orthoptists worked in *Major cities*. This is about the same as in 2006, when 87%worked in *Major cities*. Nearly half (46%) of those in *Inner regional* areas were aged 50 or over, compared with 17% of the Australian total (Table A21).

Optical mechanics

Optical mechanics operate machines to grind, polish and surface optical lenses to meet prescription requirements, and fit lenses to spectacle frames (ABS 2013).



Source: Table A22.

Optical mechanics data were sourced from the Census 2011. For the 2009 report (AIHW 2009), data were sourced from the Censuses 2001 and 2006. While Census questions and the classification of responses have changed over time, data for optical mechanics in this report are comparable with data in the 2009 report.

According to Census data, there were 651 optical mechanics employed in 2011. This was 2.9 FTE employed per every 100,000 population, or 29 FTE per million population. This is a 42% decrease in the FTE rate since 2006, when 996 optical mechanics were employed, with an FTE rate of 5 per 100,000 (50 per million).

On average, optical mechanics reported working 37 hours each week in 2011, up from 34 hours in 2006. In 2011, 2 in 3 optical mechanics were men (67%), the same as in 2006. A quarter were aged 50 and over in 2011 (27%). In 2006, 12% were aged 55 and over. In 2011, the average age was 41, up from 38 in 2006. Indigenous status was not reported in 2006. Fewer than 1% reported being Indigenous in 2011 (Table A22).

Most optical mechanics (88%) reported working in *Major cities* in 2011, the same as in 2006. In 2011, 1 in 3 (35%) of those in *Inner regional* areas were aged 50 or over, compared with 1 in 4 (27%) in *Major cities* (Table A23). In 2006, about 1 in 7 were aged 55 or over in *Inner regional* areas, and about 1 in 9 in *Major cities*).

Orientation and mobility specialists

Orientation and mobility specialists provide assistance to people who are experiencing difficulties in moving about due to vision loss. They teach a range of strategies and use of various mobility aids (RSB 2015).

Source: Table A28.

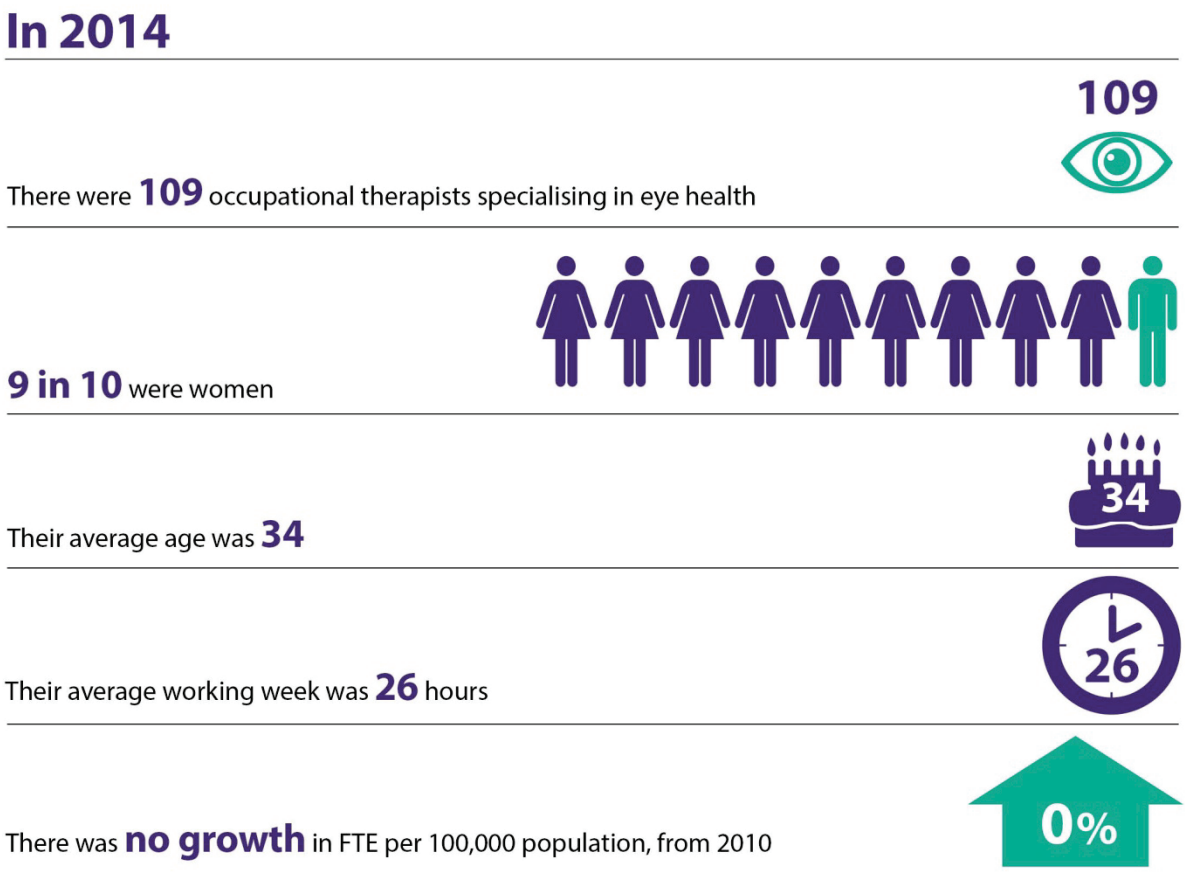
Data for orientation and mobility specialists were sourced from professional associations and organisations employing eye health workers. As data collection was based on voluntary membership, the data may not include the full number of employed orientation and mobility specialists. The exact level and impact of under-coverage is unknown.

According to data from professional associations and organisations employing eye health workers, in 2014, it was estimated that at least 182 orientation and mobility specialists were employed. This was 0.7 FTE per 100,000 population, or 7 FTE per million (Table A28). The number employed was up 15% from that in 2011, from 158, or 0.6 FTE per 100,000 population (6 per million).

On average, orientation and mobility specialists reported working 34 hours each week in 2014, the same as reported in 2011. Their average age was 43, about the same as in 2011 (42).The majority were women (75%) and over one-quarter were aged 50 and over (26%). In 2011, 72% of orientation and mobility specialists were women; their average age was 42 and 28% of them were aged 50 and over (tables A25 and A28).

Occupational therapists specialising in eye health

Occupational therapists assess functional limitations of people resulting from illnesses and disabilities, and provide therapy to enable people to perform their daily activities and occupations (ABS 2013).



Source: Table A33.

Data for occupational therapists specialising in eye health were sourced from professional associations and organisations employing eye health workers. As data collection was based on voluntary membership, the data may not include the full number of employed occupational therapists specialising in eye health. The exact level and impact of under-coverage is unknown.

According to data from professional associations and organisations employing eye health workers, in 2014, it was estimated there were at least 109 employed occupational therapists specialising in eye health, up from 73 in 2010. The FTE rate remained at 0.3 FTE per every 100,000 population, or 3 FTE per million population, between 2010 and 2014 (tables A29 to A33).

Occupational therapists specialising in eye health reported working 26 hours each week on average in 2014, down from 32 hours in 2010. Their average age was 34, down from 36 in 2010 and 35 in 2011. About 1 in 6 were aged 50 and over (17%) in 2014, about the same as in 2010 (19%) and 2011 (17%). The majority of occupational therapists specialising in eye health were women (93%). The percentage of women rose from 84% in 2010 to 91% in 2011, then remained steady at 93% from 2012 (tables A29 to A33).

Other occupations

Data for ophthalmic assistants, ophthalmic nurses, ocularists and optometric assistants were not available from the NHWDS, the Census or directly from professional associations or organisations employing eye health workers, to the level of detail required for this report.

The following information is noted, and detail on these occupations is not included in the remainder of this report:

- An estimate is that there are approximately 1.5 FTE ophthalmic assistants per ophthalmologist in Australia; however, there are few data to verify this estimate. Tasks performed by ophthalmic assistants are often undertaken by people qualified for other occupations included in this report, and so they may be included in the numbers reported for other occupations (Vision 2020 Australia 2015).
- There were 857 ophthalmic nurses registered as members of the Australian Ophthalmic Nurses Association in 2015, through various state branches. Victorian membership data include around 100 ophthalmic nurses annually. Some have postgraduate qualifications in ophthalmic nursing and members commonly have experience of 3 years or more in the practice area; however, exact figures for members with these characteristics were not available (NONA 2015).
- There are five members listed on the Ocularists Association of Australia website. Ocularists fit, shape and paint ocular prostheses. They also show patients how to handle and care for prostheses, and provide long-term care (OAA 2015).
- No detailed data were identified on the size or characteristics of the optometric assistants workforce. Optometric assistants support optometrists within private clinics, performing a range of administrative and operational tasks, including assisting clients to select frames and appropriate sunglasses (Vision 2020 Australia 2015).

4 Eye health workforce indicators

As indicated in the introduction to this report, the Australian Government's implementation plan under the National Framework for Action to Promote Eye Health and Prevent Avoidable Blindness and Vision Loss includes an indicator on workforce capacity. This aligns with an indicator in the WHO's Universal eye health: a global action plan (2014–2019), which specifies measurement of the number of eye care personnel per million population (WHO 2013).

The Australian Government will report the WHO indicators by 2019, with the baseline year for initial reporting of 2010. For Australia, the workforce capacity indicator will measure the number of ophthalmologists, optometrists and allied ophthalmic personnel (ophthalmic nurses, orthoptists, ophthalmic and optometric assistants, ocularists, occupational therapists specialising in eye health, and orientation and mobility specialists).

The ability to meet these reporting requirements is limited by the available data. As detailed in Chapter 2, the availability and quality of data vary widely across the occupations that make up the eye health workforce and over time.

Data for optical dispensers, optometrists, ophthalmologists, orthoptists and optical mechanics were sourced from two established collections: the AIHW NHWDS and the ABS Census. One particular weakness of these collections is that they both lack data for the WHO baseline year of 2010. Overall, 2010 data were available for only one profession—occupational therapists specialising in eye health.

Estimates for 2010

To meet the indicator requirements, estimates have been developed for the total number employed in 2010 for ophthalmologists, optometrists and allied ophthalmic personnel, using available data (Table 4.1).

For optometrists and ophthalmologists, the trends for NHWDS data for 2011 to 2014 were back cast using a linear approach to estimate the 2010 total employed figure.

For allied ophthalmic personnel, the methods used to estimate the total employed for each of the occupations were determined by the data sources:

- *Optical dispensers, orthoptists and optical mechanics*: data were sourced from the Censuses 2006 and 2011. The change from 2006 to 2011 was apportioned equally across intervening years to estimate 2010.
- *Orientation and mobility specialists*: data were sourced from professional associations and organisations employing eye health workers for 2010 to 2014; however, the 2010 data were incomplete. The trend for 2011 to 2014 was used to estimate the figure for 2010.
- *Occupational therapists specialising in eye health*: data were sourced from professional associations and organisations employing eye health workers for 2010 to 2014. The reported data were sufficient to include for 2010.
- *Ophthalmic nurses*: latest available data were from the AIHW LFS for the years 2007 to 2009. A longer time series was not available as data for 2005 and 2006 were of poor quality. The trend for 2007 to 2009 was used to estimate the figure for 2010.

- *Ophthalmic assistants, ocularists and optometric assistants*: no estimates have been included as no reliable baseline data were available for these occupations.

Table 4.1: Eye health workforce: estimates of number employed, 2010[(a)]

Occupation	Source	2010
Optometrists	NHWDS	3,899
Ophthalmologists	NHWDS	810
Allied ophthalmic personnel		6,464
Optical dispensers	Census	4,239
Orthoptists	Census	643
Optical mechanics	Census	720
Orientation and mobility specialists	Professional associations and organisations employing eye health workers	148
Occupational therapists	Professional associations and organisations employing eye health workers	73
Ophthalmic nurses[(b)]	AIHW LFS	641
Total[(c)]		**11,173**

(a) In this table, the occupations in the eye health workforce are grouped into the three broad-level workforce segments specified in the indicators required for the WHO's Universal eye health: a global action plan (2014–2019). As such the occupations are not ordered by declining number of employed persons, as is done in the rest of this report.

(b) Ophthalmic nurses were identified in LFS data based on having reported ophthalmology as their main area of practice. This may have excluded those nurses for whom ophthalmology was a secondary area of practice. The 2010 figure should be treated as a minimum estimate of the number of employed ophthalmic nurses.

(c) Figures for occupations have been rounded for presentation; as a result, components may not add to the totals.

The 2010 estimates are subject to quality concerns associated with the underlying data and sources. See Chapter 2 of this report for data quality considerations.

5 Future data collection

Preparing this report has exposed a number of gaps in the available data on the eye health workforce as well as data inconsistencies between occupations. In some cases, relatively detailed data are collected on an ongoing basis, such as in the AIHW NHWDS for ophthalmologists and optometrists. For these occupations, it is relatively easy to update the data regularly. For other occupations, such as orthoptists, optical dispensers and optical mechanics, the Census is a key data source.

In the future, there are several options to capture data that are inadequately covered by existing data sets. All of these options, which each entail a substantial body of work, would require dedicated resources. The collection development required with this approach is outlined below in relation to the data sources used in this report:

- *NHWDS and Census*: work with those responsible for collecting the data to determine what changes could be made to collection forms and processes to improve or enhance the collected data set. This could be done not only to improve data required for reporting against the indicators but also to provide additional information (not mandatory for reporting) that may be useful for further analysis and planning.

  Development work required may include a review of underlying classifications (for example, the ANZSCO) to ensure that all eye health occupations are separately and uniquely identified. Questions could be modified to identify ophthalmic nurses in NHWDS or Census data. Requests for specialised information could be accommodated in this process. Collection of information on hours worked by remoteness area would allow construction of better estimates of FTE available in each remoteness area.
- *Data sourced from professional organisations or organisations employing eye health workers*: work with representatives of the occupations to agree on definitions, concepts and collection methods that could be adopted consistently across all occupations.

Census

Census data on occupations are classified to occupations in the ANZSCO. Eye health occupations that can be separately identified are optometrists, ophthalmologists, optical dispensers, optical mechanics and orthoptists.

The other eye health occupations in scope for this report are not currently identifiable in Census data. They are either not specific occupations in the ANZSCO (and so are combined with other occupations, which may be unrelated to eye health) or are included in a broader occupation classification because supplementary information on role is not collected in the Census. (For example, there is no option to identify ophthalmic nursing as a specific role, so this occupation is classified to nursing.)

Information on the industry of job is currently too broad to be combined with occupation data to refine the classification of responses.

Modifications to the Census and its underlying classifications could be considered to overcome these shortcomings. Some ways this could be achieved are:

- a review of the ANZSCO, to ensure separate identification of the eye health occupations in the classification

- updates to the relevant Census questions (to collect more detail about areas of specialty) for nurses and occupational therapists. For those reporting their occupation as nursing or occupational therapy, a supplementary question about area of specialty, role or work setting, could include ophthalmic nursing, eye health (or similar) in the options
- an update of Census questions about industry of main job, to break the broad classification of 'Health' into its components, which may assist in identifying eye health workers
- addition of new Census questions, to gather information relevant to analysis of the eye health workforce that has not previously been collected. For example, information on country of initial qualification is not currently available from the Census, but could be added to the questions on education and qualifications.

Changes to Census forms and classifications require substantial lead time. Not all requests for changes can be accommodated. Consultation with the ABS would be necessary to determine the feasibility of pursuing these options.

AIHW National Health Workforce Data Set

A range of health occupations are required to register through the NRAS. Data collected in the registration process, plus supplementary information collected in a workforce survey completed at the time of registration, are used to build the NHWDS.

The NRAS provides high-quality data for the identification of ophthalmologists and optometrists. Ophthalmologists are identified as having a registered medical specialty of ophthalmology, plus having indicated in the workforce survey that they are currently working in a relevant role. Likewise, optometrists have a registered profession of optometry and were working in a relevant role at the time of the survey. However, for other registered occupations—notably occupational therapists and nurses—the registration process does not collect sufficient detail to identify those employed specifically in eye health.

Nurses must be registered in the NRAS to practise in Australia, and registration must be renewed annually. At present, ophthalmic nurses cannot be separately identified in the NRAS data about nurses. Currently, information available from the NRAS is limited by whether an ophthalmic nurse lists a qualification related to eye health in their registration information, as a free text entry. Having a relevant qualification does not necessarily mean that the person is working in the area. Nurses with a principal role or work setting in eye health are not currently captured, as eye health is not included in the options for either of these fields in the workforce survey.

Occupational therapists must also be registered to practise in Australia, and data are available from the AIHW NHWDS for the broader group; however, no information is supplied about the areas, if any, in which they specialise or the settings in which they work, meaning identification of those specialising in eye health is not possible.

Orientation and mobility specialists, ocularists, optometric and ophthalmic assistants are not required to register to practise in Australia, so currently fall outside of the scope of the NRAS.

Options for improving eye health data from the NRAS include:

- requesting changes to the NRAS workforce survey to collect more information about specialties. The survey currently collects information on a limited range of specialties in

relation to qualifications, principal role and work setting. Adding 'eye health' or 'ophthalmology' to this list would allow separate identification of ophthalmic nurses and occupational therapists specialising in eye health. The NRAS could then supply comprehensive information for these occupations, which could be updated annually

- adding new workforce survey questions, to gather information relevant to analysis of the eye health workforce that has not previously been collected. This process would accommodate requests for specialised information that would enhance the data set and support further analysis and planning, but that is not required for mandatory reporting. For example, the collection of information relating to working hours by remoteness area, could potentially be collected along with other occupation information
- broadening the scope of the NRAS to include the full range of eye health occupations.This would require changes to the underlying legislation to include the additional occupations in the registration process.

Data from professional associations and organisations employing eye health workers

For this report, professional associations and organisations employing eye health workers were the source of data for occupational therapists specialising in eye health, and orientation and mobility specialists.

It may be possible to obtain more comprehensive data from professional associations and organisations employing eye health workers on an ongoing basis. For this option to be successful, resources would need to be dedicated to developing a collection template and process, based on consistent, agreed standards and definitions. A once-off survey of members conducted by Orthoptics Australia in late 2012 and early 2013 reported data comparable with Census 2011 data, as well as a range of key characteristics similar to those included in AIHW workforce reports (such as percentage of women and average age). This survey could be used as a model for other professional associations to develop collections specific to the occupations they represent.

Appendix A: Tables for eye health workforce, 2010 to 2014

Table A1: Optical dispensers, number and characteristics, by state and territory, 2011

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number employed	1,389	1,021	957	499	402	109	78	26	4,481
Average weekly hours worked	34.0	32.0	30.0	31.0	29.0	33.0	n.p.	n.p.	32.0
FTE number	1,242.8	859.8	755.5	407.1	306.8	94.7	n.p.	n.p.	3,773.5
FTE rate	17.2	15.5	16.9	24.8	13.0	18.5	n.p.	n.p.	16.9
Average age (years)	39.0	37.0	36.0	35.0	38.0	33.0	n.p.	n.p.	37.0
Aged 30 and under (%)	29.2	38.4	38.7	43.3	30.8	35.8	n.p.	n.p.	35.4
Aged 50 and over (%)	21.5	18.7	18.5	17.2	25.4	16.5	n.p.	n.p.	19.9
Women (%)	66.0	71.7	81.3	79.8	82.9	85.3	n.p.	n.p.	74.0
Indigenous (%)	0.7	—	1.3	0.8	—	2.8	n.p.	n.p.	0.6

Notes

1. All figures sourced from Census reference underlying data that have been randomly adjusted by the ABS to allow release of confidential data.
2. FTE based on a 38-hour week.
3. FTE per 100,000 population based on ABS estimated resident population.
4. Rates have not been published where the number employed for any occupation is fewer than 30 people.

Source: ABS customised report, Census of Population and Housing 2011.

Table A2: Optical dispensers, number and selected characteristics, by remoteness area, 2011

	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Number employed	3,346	836	277	19	3	4,481
Average age (years)	37	38	37	n.p.	n.p.	37
Aged 50 and over (%)	20.0	19.4	20.0	n.p.	n.p.	19.9
Women (%)	71.7	79.9	83.6	n.p.	n.p.	74.0
Average weekly hours worked	32	32	32	n.p.	n.p.	32
FTE rate	18.0	17.1	11.5	n.p.	n.p.	16.9

Notes

1. FTE based on a 38-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. *Very Remote* includes migratory areas.
5. All figures sourced from Census reference underlying data that have been randomly adjusted by the ABS to allow release of confidential data.

Source: ABS customised report, Census of Population and Housing 2011.

Table A3: Optometrists, number and characteristics, by state and territory, 2011

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number registered	1,517	1,152	908	363	239	84	73	34	4,505
Number employed	1,391	1,054	843	340	225	82	65	31	4,034
Employed (%)	91.7	91.5	92.9	93.8	94.1	97.5	89.0	92.6	89.5
Average weekly hours worked	36.4	35.2	35.7	35.8	37.5	35.9	33.5	39.4	35.9
FTE number	1,331.7	975.5	791.0	320.6	222.3	77.4	57.4	32.3	3,809.5
FTE rate	18.4	17.6	17.7	13.6	13.6	15.1	15.6	14.0	17.1
Average age (years)	41.8	39.5	40.7	42.3	41.1	46.2	37.6	39.9	41.1
Aged under 30 (%)	19.3	24.3	19.7	14.5	21.8	9.3	26.6	33.8	20.4
Aged 50 and over (%)	31.7	21.4	23.1	25.5	32.2	46.3	18.1	29.0	26.8
Women (%)	49.8	51.6	45.1	39.7	36.1	34.2	53.1	50.8	47.8
Indigenous (%)	0.5	0.1	0.5	—	—	—	—	—	0.3

Notes

1. FTE based on a 38-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. 'Australia' includes those optometrists who did not state or adequately describe their state or territory, and those who were overseas. Therefore, state and territory totals may not sum to the national total.

Source: AIHW NHWDS.

Table A4: Optometrists, number and characteristics, by state and territory, 2012

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number registered	1,545	1,163	892	382	252	91	76	33	4,564
Number employed	1,416	1,044	825	354	243	87	68	30	4,066
Employed (%)	91.6	89.8	92.4	92.7	96.6	95.4	89.3	90.3	89.1
Average weekly hours worked	36.2	35.9	35.3	36.3	37.0	37.7	34.9	41.2	36.1
FTE number	1,349.6	986.8	766.9	337.7	236.9	86.6	62.5	32.4	3,859.3
FTE rate	18.5	17.5	16.8	13.9	14.3	16.9	16.7	13.7	17.0
Average age (years)	42.1	39.8	41.2	42.1	41.0	45.2	37.6	41.6	41.4
Aged under 30 (%)	17.9	24.7	19.3	14.0	23.3	14.7	29.4	21.7	20.1
Aged 50 and over (%)	31.5	22.8	24.0	25.9	32.0	40.3	16.2	40.2	27.3
Women (%)	51.5	50.2	45.8	40.5	41.2	33.3	48.3	49.6	48.2
Indigenous (%)	0.3	0.1	0.3	—	—	—	—	—	0.2
Initial qualification Australia (%)	90.1	87.7	89.4	64.2	71.1	74.1	76.1	77.1	85.3

Notes

1. FTE based on a 38-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. 'Australia' includes those optometrists who did not state or adequately describe their state or territory, and those who were overseas. Therefore, state and territory totals may not sum to the national total.

Source: AIHW NHWDS.

Table A5: Optometrists, number and characteristics, by state and territory, 2013

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number registered	1,595	1,195	946	384	254	89	79	33	4,730
Number employed	1,469	1,101	878	348	239	84	70	31	4,221
Employed (%)	92.1	92.1	92.8	90.6	94.1	94.4	88.6	93.9	89.2
Average weekly hours worked	36.2	35.2	35.4	35.9	36.4	36.4	34.8	40.4	35.7
FTE number	1,397.7	1,018.9	817.5	328.4	229.1	80.4	64.1	32.9	3,970.1
FTE rate	18.9	17.8	17.6	13.0	13.7	15.7	16.8	13.6	17.2
Average age (years)	42.2	39.6	41.1	42.5	41.6	44.3	38.2	40.0	41.4
Aged under 30 (%)	18.5	26.4	20.4	15.8	22.2	15.5	24.3	29.0	21.1
Aged 50 and over (%)	32.0	22.6	25.6	26.4	32.2	36.9	18.6	32.3	27.7
Women (%)	52.1	51.3	46.8	40.8	40.2	39.3	51.4	58.1	48.9
Indigenous (%)	0.1	—	0.4	0.3	0.4	—	—	—	0.2
Initial qualification Australia (%)	87.7	88.8	88.6	65.0	73.0	75.0	74.2	90.0	85.0

Notes

1. FTE based on a 38-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. 'Australia' includes those optometrists who did not state or adequately describe their state or territory, and those who were overseas. Therefore, state and territory totals may not sum to the national total.

Source: AIHW NHWDS.

Table A6: Optometrists, number and characteristics, by state and territory, 2014

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number registered	1,619	1,227	974	405	265	90	75	39	4,855
Number employed	1,481	1,133	898	377	254	89	69	36	4,337
Employed (%)	91.5	92.3	92.2	93.1	95.8	98.9	92.0	92.3	89.3
Average weekly hours worked	36.3	35.4	35.5	35.1	36.5	34.9	35.2	41.3	35.8
FTE number	1,413.3	1,054.1	838.7	348.1	243.9	81.6	63.9	39.2	4,082.8
FTE rate	18.8	18.0	17.8	13.5	14.5	15.9	16.6	16.0	17.4
Average age (years)	42.4	40.2	41.4	42.5	40.9	45.5	38.8	40.9	41.7
Aged under 30 (%)	18.3	24.8	21.2	15.6	28.0	13.5	29.0	25.0	21.1
Aged 50 and over (%)	31.3	24.7	26.6	28.9	28.3	41.6	17.4	33.3	28.2
Women (%)	52.9	51.3	48.3	41.9	41.3	36.0	52.2	58.3	49.6
Indigenous (%)	0.1	0.2	0.4	—	—	—	1.5	—	0.2
Initial qualification Australia (%)	87.4	89.4	88.8	61.0	71.5	73.6	80.6	82.9	84.6

Notes

1. FTE based on a 38-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. 'Australia' includes those optometrists who did not state or adequately describe their state or territory, and those who were overseas. Therefore, state and territory totals may not sum to the national total.

Source: AIHW NHWDS.

Table A7: Optometrists, number and characteristics, by remoteness area, 2011

	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Number registered	3,442	627	243	25	8	4,505
Number employed	3,169	600	233	21	6	4,034
Employed (%)	92.1	95.7	95.6	n.p.	n.p.	89.5
Average weekly hours worked	35.7	36.7	36.9	n.p.	n.p.	35.9
FTE number	2,974.5	579.5	226.1	n.p.	n.p.	3,809.5
FTE rate	19.0	14.1	11.2	n.p.	n.p.	17.1
Average age (years)	40.4	42.8	43.4	n.p.	n.p.	41.1
Aged under 30 (%)	21.6	14.6	21.0	n.p.	n.p.	20.4
Aged 50 and over (%)	25.1	32.3	36.2	n.p.	n.p.	26.8
Women (%)	50.2	37.6	43.3	n.p.	n.p.	47.8
Indigenous (%)	0.3	0.2	1.0	n.p.	n.p.	0.3

Notes

1. FTE based on a 38-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. *Very remote* includes migratory areas.

Source: AIHW NHWDS.

Table A8: Optometrists, number and characteristics, by remoteness area, 2012

	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Number registered	3,474	681	226	28	6	4,564
Number employed	3,177	639	214	26	6	4,066
Employed (%)	91.5	93.8	94.8	n.p.	n.p.	89.1
Average weekly hours worked	35.7	37.3	37.4	n.p.	n.p.	36.1
FTE number	2,986.0	626.4	211.3	n.p.	n.p.	3,859.3
FTE rate	18.7	15.0	10.3	n.p.	n.p.	17.0
Average age (years)	40.8	42.5	43.7	n.p.	n.p.	41.4
Aged under 30 (%)	20.8	17.4	19.1	n.p.	n.p.	20.1
Aged 50 and over (%)	25.8	31.8	36.4	n.p.	n.p.	27.3
Women (%)	50.5	38.4	43.5	n.p.	n.p.	48.2
Indigenous (%)	0.1	0.3	0.5	n.p.	n.p.	0.2
Initial qualification Australia (%)	85.2	87.0	84.4	n.p.	n.p.	85.3

Notes

1. FTE based on a 38-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. *Very remote* includes migratory areas.

Source: AIHW NHWDS.

Table A9: Optometrists, number and characteristics, by remoteness area, 2013

	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Number registered	3,610	677	247	30	7	4,730
Number employed	3,305	644	235	27	7	4,221
Employed (%)	91.6	95.1	95.1	n.p.	n.p.	89.2
Average weekly hours worked	35.4	37.0	36.5	n.p.	n.p.	35.7
FTE number	3,082.2	626.4	225.9	n.p.	n.p.	3,970.1
FTE rate	18.9	14.9	10.9	n.p.	n.p.	17.2
Average age (years)	40.9	42.4	43.1	n.p.	n.p.	41.4
Aged under 30 (%)	21.4	20.0	19.6	n.p.	n.p.	21.1
Aged 50 and over (%)	26.3	32.3	35.7	n.p.	n.p.	27.7
Women (%)	51.3	40.4	39.1	n.p.	n.p.	48.9
Indigenous (%)	0.2	—	0.4	n.p.	n.p.	0.2
Initial qualification Australia (%)	84.7	87.3	83.0	n.p.	n.p.	85.0

Notes

1. FTE based on a 38-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. *Very remote* includes migratory areas.

Source: AIHW NHWDS.

Table A10: Optometrists, number and characteristics by remoteness area, 2014

	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Number registered	3,695	696	257	32	11	4,855
Number employed	3,384	667	244	29	11	4,337
Employed (%)	91.6	95.8	94.9	n.p.	n.p.	89.3
Average weekly hours worked	35.5	36.5	37.3	n.p.	n.p.	35.8
FTE number	3,159.7	640.9	239.3	n.p.	n.p.	4,082.8
FTE rate	19.0	15.0	11.5	n.p.	n.p.	17.4
Average age (years)	41.2	42.6	43.6	n.p.	n.p.	41.7
Aged under 30 (%)	21.0	21.7	19.3	n.p.	n.p.	21.1
Aged 50 and over (%)	26.8	32.8	36.5	n.p.	n.p.	28.2
Women (%)	51.9	41.2	41.0	n.p.	n.p.	49.6
Indigenous (%)	0.2	0.2	0.4	n.p.	n.p.	0.2
Initial qualification Australia (%)	84.3	87.2	82.8	n.p.	n.p.	84.6

Notes

1. FTE based on a 38-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. *Very remote* includes migratory areas.

Source: AIHW NHWDS.

Table A11: Optometrists, number employed and FTE rates, by remoteness area, 2011 to 2014

		Year			
Remoteness area	**Characteristic**	**2011**	**2012**	**2013**	**2014**
Outer regional	Number employed	233	214	235	244
	Average weekly hours worked	36.9	37.4	36.5	37.3
Remote	Number employed	21	26	27	29
	Average weekly hours worked	n.p.	n.p.	n.p.	n.p.
Very remote	Number employed	6	6	7	11
	Average weekly hours worked	n.p.	n.p.	n.p.	n.p.
Outer regional and remote areas	Number employed	260	246	269	284
	Average weekly hours worked	37.0	37.5	36.6	37.5
	FTE	253.1	243.0	259.0	280.5
	FTE rate	9.9	9.4	10.0	10.7

Notes

1. FTE based on a 38-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. 'Outer regional and remote areas' combines *Outer regional*, *Remote* and *Very* remote areas, as numbers of optometrists working in *Remote* and *Very Remote* areas are too small to calculate reliable FTEs at this level.
4. 'Outer regional and remote areas' also includes migratory areas.

Source: AIHW NHWDS.

Table A12: Ophthalmologists, number and characteristics, by state and territory, 2011

	NSW	**Vic**	**Qld**	**WA**	**SA**	**Tas**	**ACT**	**NT**	**Australia**
Number registered	345	219	156	69	70	19	14	4	910
Number employed	320	204	140	69	65	14	13	4	828
Employed (%)	92.6	93.1	89.5	100.0	92.7	n.p.	n.p.	n.p.	91.0
Average weekly hours worked	42.7	41.1	42.2	45.8	40.9	n.p.	n.p.	n.p.	42.4
FTE number	340.8	209.6	147.4	79.0	66.4	n.p.	n.p.	n.p.	877.8
FTE rate	4.7	3.8	3.3	3.4	4.1	n.p.	n.p.	n.p.	3.9
Average age (years)	53.8	53.0	53.9	49.9	55.2	n.p.	n.p.	n.p.	53.3
Aged under 30 (%)	—	—	—	—	—	n.p.	n.p.	n.p.	—
Aged 50 and over (%)	57.7	57.3	57.7	47.1	63.3	n.p.	n.p.	n.p.	56.9
Women (%)	19.7	21.6	11.5	13.0	13.9	n.p.	n.p.	n.p.	17.4
Indigenous (%)	—	—	—	1.5	—	n.p.	n.p.	n.p.	0.1

Notes

1. FTE based on a 40-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. 'Australia' includes those ophthalmologists who did not state or adequately describe their state or territory, and those who were overseas. Therefore, state and territory totals may not sum to the national total.

Source: AIHW NHWDS.

Table A13: Ophthalmologists, number and characteristics, by state and territory, 2012

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number registered	342	210	147	70	68	19	13	4	883
Number employed	329	204	143	68	63	17	11	3	836
Employed (%)	96.0	97.0	97.1	97.1	92.1	n.p.	n.p.	n.p.	94.7
Average weekly hours worked	42.3	41.0	43.0	46.2	41.2	n.p.	n.p.	n.p.	42.4
FTE number	347.1	208.7	153.4	78.6	64.4	n.p.	n.p.	n.p.	886.4
FTE rate	4.8	3.7	3.4	3.2	3.9	n.p.	n.p.	n.p.	3.9
Average age (years)	52.9	52.8	52.7	50.8	55.0	n.p.	n.p.	n.p.	52.8
Aged under 30 (%)	—	—	—	—	—	n.p.	n.p.	n.p.	—
Aged 50 and over (%)	57.6	58.5	58.1	50.0	64.2	n.p.	n.p.	n.p.	57.7
Women (%)	19.7	22.6	13.3	13.2	12.1	n.p.	n.p.	n.p.	18.0
Indigenous (%)	0.3	—	0.8	—	—	n.p.	n.p.	n.p.	0.3
Initial qualification Australia (%)	84.5	79.1	77.1	77.4	77.4	n.p.	n.p.	n.p.	79.8

Notes

1. FTE based on a 40-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. 'Australia' includes those ophthalmologists who did not state or adequately describe their state or territory, and those who were overseas. Therefore, state and territory totals may not sum to the national total.

Source: AIHW NHWDS.

Table A14: Ophthalmologists, number and characteristics, by state and territory, 2013

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number registered	346	218	153	71	68	20	12	4	906
Number employed	330	206	146	67	63	16	12	2	843
Employed (%)	95.4	94.5	95.4	94.4	92.6	n.p.	n.p.	n.p.	93.0
Average weekly hours worked	42.7	41.6	42.4	46.4	39.4	n.p.	n.p.	n.p.	42.4
FTE number	352.1	214.2	154.8	77.7	62.0	n.p.	n.p.	n.p.	893.6
FTE rate	4.8	3.7	3.3	3.1	3.7	n.p.	n.p.	n.p.	3.9
Average age (years)	53.0	53.0	52.4	51.5	55.1	n.p.	n.p.	n.p.	52.9
Aged under 30 (%)	—	—	—	—	—	n.p.	n.p.	n.p.	—
Aged 50 and over (%)	55.2	59.7	58.2	55.2	61.9	n.p.	n.p.	n.p.	57.4
Women (%)	20.6	23.3	13.0	14.9	17.5	n.p.	n.p.	n.p.	18.9
Indigenous (%)	0.3	—	1.5	—	—	n.p.	n.p.	n.p.	0.4
Initial qualification Australia (%)	84.5	78.4	72.5	77.6	75.8	n.p.	n.p.	n.p.	79.0

Notes

1. FTE based on a 40-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. 'Australia' includes those ophthalmologists who did not state or adequately describe their state or territory, and those who were overseas. Therefore, state and territory totals may not sum to the national total.

Source: AIHW NHWDS.

Table A15: Ophthalmologists, number and characteristics, by state and territory, 2014

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number registered	354	229	158	77	68	19	13	5	938
Number employed	331	223	150	71	63	17	13	4	872
Employed (%)	93.5	97.4	94.9	92.2	92.6	n.p.	n.p.	n.p.	93.0
Average weekly hours worked	42.6	40.7	43.9	45.1	39.2	n.p.	n.p.	n.p.	42.2
FTE number	352.2	227.0	164.5	80.0	61.7	n.p.	n.p.	n.p.	920.7
FTE rate	4.7	3.9	3.5	3.1	3.7	n.p.	n.p.	n.p.	3.9
Average age (years)	53.3	53.1	52.3	51.4	54.9	n.p.	n.p.	n.p.	53.0
Aged under 30 (%)	—	—	—	—	—	n.p.	n.p.	n.p.	—
Aged 50 and over (%)	56.2	58.7	58.0	50.7	61.9	n.p.	n.p.	n.p.	57.2
Women (%)	20.8	25.6	12.7	14.1	20.6	n.p.	n.p.	n.p.	19.8
Indigenous (%)	0.6	—	0.7	—	—	n.p.	n.p.	n.p.	0.4
Initial qualification Australia (%)	85.2	79.2	73.6	77.5	76.2	n.p.	n.p.	n.p.	79.4

Notes

1. FTE based on a 40-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. 'Australia' includes those ophthalmologists who did not state or adequately describe their state or territory, and those who were overseas. Therefore, state and territory totals may not sum to the national total.

Source: AIHW NHWDS.

Table A16: Ophthalmologists, number and characteristics, by remoteness area, 2011

	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Number registered	749	109	28	3	3	910
Number employed	699	97	26	2	3	828
Employed (%)	93.3	89.0	n.p.	n.p.	n.p.	91.0
Average weekly hours worked	42.0	44.6	n.p.	n.p.	n.p.	42.4
FTE number	734.3	108.5	n.p.	n.p.	n.p.	877.8
FTE rate	4.7	2.6	n.p.	n.p.	n.p.	3.9
Average age (years)	53.6	51.7	n.p.	n.p.	n.p.	53.3
Aged under 30 (%)	—	—	n.p.	n.p.	n.p.	—
Aged 50 and over (%)	56.2	58.1	n.p.	n.p.	n.p.	56.9
Women (%)	18.9	9.3	n.p.	n.p.	n.p.	17.4
Indigenous (%)	—	—	n.p.	n.p.	n.p.	0.1

Notes

1. FTE based on a 40-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. *Very Remote* includes migratory areas.

Source: AIHW NHWDS.

Table A17: Ophthalmologists, number and characteristics, by remoteness area, 2012

	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Number registered	734	106	29	2	—	883
Number employed	708	99	28	1	—	836
Employed (%)	96.5	93.8	n.p.	n.p.	n.a.	94.7
Average weekly hours worked	42.0	43.3	n.p.	n.p.	n.a.	42.4
FTE number	744.1	107.3	n.p.	n.p.	n.a.	886.4
FTE rate	4.7	2.6	n.p.	n.p.	n.a.	3.9
Average age (years)	53.0	50.7	n.p.	n.p.	n.a.	52.8
Aged under 30 (%)	—	—	n.p.	n.p.	n.a.	—
Aged 50 and over (%)	57.4	56.0	n.p.	n.p.	n.a.	57.7
Women (%)	19.6	9.4	n.p.	n.p.	n.a.	18.0
Indigenous (%)	0.3	—	n.p.	n.p.	n.a.	0.3
Initial qualification Australia (%)	80.8	76.6	n.p.	n.p.	n.a.	79.8

Notes

1. FTE based on a 40-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. Very Remote includes migratory areas.

Source: AIHW NHWDS.

Table A18: Ophthalmologists, number and characteristics, by remoteness area, 2013

	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Number registered	746	112	29	1	1	906
Number employed	708	103	27	—	1	843
Employed (%)	94.9	92.0	n.p.	n.p.	n.p.	93.0
Average weekly hours worked	42.0	43.0	n.p.	n.p.	n.p.	42.4
FTE number	743.8	110.8	n.p.	n.p.	n.p.	893.6
FTE rate	4.6	2.6	n.p.	n.p.	n.p.	3.9
Average age (years)	53.0	51.6	n.p.	n.p.	n.p.	52.9
Aged under 30 (%)	—	—	n.p.	n.p.	n.p.	—
Aged 50 and over (%)	56.6	59.2	n.p.	n.p.	n.p.	57.4
Women (%)	20.6	10.7	n.p.	n.p.	n.p.	18.9
Indigenous (%)	0.5	—	n.p.	n.p.	n.p.	0.4
Initial qualification Australia (%)	95.2	93.8	n.p.	n.p.	n.p.	95.0

Notes

1. FTE based on a 40-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. *Very Remote* includes migratory areas.

Source: AIHW NHWDS.

Table A19: Ophthalmologists, number and characteristics, by remoteness area, 2014

	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Number registered	774	113	28	4	1	938
Number employed	732	107	27	3	1	872
Employed (%)	94.6	94.7	n.p.	n.p.	n.p.	93.0
Average weekly hours worked	42.1	42.1	n.p.	n.p.	n.p.	42.2
FTE number	771.3	112.6	n.p.	n.p.	n.p.	920.7
FTE rate	4.6	2.6	n.p.	n.p.	n.p.	3.9
Average age (years)	53.1	53.0	n.p.	n.p.	n.p.	53.0
Aged under 30 (%)	—	—	n.p.	n.p.	n.p.	—
Aged 50 and over (%)	56.0	64.5	n.p.	n.p.	n.p.	57.2
Women (%)	21.4	13.1	n.p.	n.p.	n.p.	19.8
Indigenous (%)	0.4	—	n.p.	n.p.	n.p.	0.4
Initial qualification Australia (%)	97.0	94.0	n.p.	n.p.	n.p.	96.5

Notes

1. FTE based on a 40-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. *Very Remote* includes migratory areas.

Source: AIHW NHWDS.

Table A20: Orthoptists, number and characteristics, by state and territory, 2011

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number employed	326	235	51	23	16	12	8	3	674
Average weekly hours worked	31.0	30.0	35.0	n.p.	n.p.	n.p.	n.p.	n.p.	31.0
FTE number	265.9	185.5	47.0	n.p.	n.p.	n.p.	n.p.	n.p.	549.8
FTE rate	3.7	3.4	1.0	n.p.	n.p.	n.p.	n.p.	n.p.	2.5
Average age (years)	37.0	34.0	36.0	n.p.	n.p.	n.p.	n.p.	n.p.	36.0
Aged 30 and under (%)	41.7	37.4	33.3	n.p.	n.p.	n.p.	n.p.	n.p.	39.2
Aged 50 and over (%)	15.6	12.8	21.6	n.p.	n.p.	n.p.	n.p.	n.p.	17.1
Women (%)	89.6	92.8	73.5	n.p.	n.p.	n.p.	n.p.	n.p.	88.7
Indigenous (%)	—	—	—	n.p.	n.p.	n.p.	n.p.	n.p.	—
Initial qualification Australia (%)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	95.7[(a)]

(a) Data for percentage with initial qualification in Australia were collected from late 2012 to early 2013.

Notes

1. All figures sourced from Census reference underlying data that have been randomly adjusted by the ABS to allow release of confidential data.
2. FTE based on a 38-hour week.
3. FTE per 100,000 population based on ABS estimated resident population.
4. Rates have not been published where the number employed for any occupation is fewer than 30 people.

Sources: ABS customised report, Census of Population and Housing 2011; Koklanis & Vukicevic 2014 (initial qualification data).

Table A21: Orthoptists, number and selected characteristics, by remoteness area, 2011

	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Number employed	596	58	14	—	3	671
Average age (years)	35.0	41.0	n.p.	n.a.	n.p.	36.0
Aged 50 and over (%)	13.6	45.8	n.p.	n.a.	n.p.	16.7
Women (%)	88.7	94.9	n.p.	n.a.	n.p.	89.1
Average weekly hours worked	31	31	n.p.	n.a.	n.p.	31
FTE rate	3.1	1.2	n.p.	n.a.	n.p.	2.5

Notes

1. FTE based on a 38-hour week.
2. *Very remote* includes migratory areas.
3. Rates have not been published where the number employed for any occupation is fewer than 30 people.
4. FTE per 100,000 population based on ABS estimated resident population.
5. All figures sourced from Census reference underlying data that have been randomly adjusted by the ABS to allow release of confidential data.

Source: ABS customised report, Census of Population and Housing 2011.

Table A22: Optical mechanics, number and characteristics, by state and territory, 2011

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number employed	165	210	125	34	92	16	6	3	651
Average weekly hours worked	39.0	37.0	35.0	29.0	38.0	n.p.	n.p.	n.p.	37.0
FTE number	169.3	204.5	115.1	25.9	92.0	n.p.	n.p.	n.p.	633.9
FTE rate	2.4	3.7	2.6	1.6	4.0	n.p.	n.p.	n.p.	2.9
Average age (years)	43.0	41.0	41.0	44.0	41.0	n.p.	n.p.	n.p.	41.0
Aged 30 and under (%)	17.0	21.3	23.4	11.4	7.4	n.p.	n.p.	n.p.	17.8
Aged 50 and over (%)	32.1	20.9	33.1	28.6	22.1	n.p.	n.p.	n.p.	26.8
Women (%)	31.9	37.1	27.4	35.3	28.7	n.p.	n.p.	n.p.	32.9
Indigenous (%)	—	—	2.4	—	—	n.p.	n.p.	n.p.	0.5

Notes

1. All figures sourced from Census reference underlying data that have been randomly adjusted by the ABS to allow release of confidential data.
2. FTE based on a 38-hour week.
3. FTE per 100,000 population based on ABS estimated resident population.
4. Rates have not been published where the number employed for any occupation is fewer than 30 people.

Source: ABS customised report, Census of Population and Housing 2011.

Table A23: Optical mechanics, number and selected characteristics, by remoteness area, 2011

	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
Number employed	572	60	21	—	—	653
Average age (years)	41	43	n.p.	n.a.	n.a.	41
Aged 50 and over (%)	26.5	34.5	n.p.	n.a.	n.a.	26.9
Women (%)	31.8	37.5	n.p.	n.a.	n.a.	32.7
Average weekly hours worked	38	36	n.p.	n.a.	n.a.	37
FTE rate	3.6	1.4	n.p.	n.a.	n.a.	2.8

Notes

1. FTE based on a 38-hour week.
2. FTE per 100,000 population based on ABS estimated resident population.
3. *Very remote* includes migratory areas.
4. Rates have not been published where the number employed for any occupation is fewer than 30 people.
5. All figures sourced from Census reference underlying data that have been randomly adjusted by the ABS to allow release of confidential data.

Source: ABS customised report, Census of Population and Housing 2011.

Table A24: Orientation and mobility specialists, number and characteristics, by state and territory, 2010

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia[(a)]
Number employed	12	19	7	n.a.	12	5	2	1	58
Average weekly hours worked	n.p.	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	35.5
FTE number	n.p.	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	54.2
FTE rate	n.p.	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	0.2
Average age (years)	n.p.	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	42.7
Aged under 30 (%)	n.p.	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	15.5
Aged 50 and over (%)	n.p.	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	29.3
Women (%)	n.p.	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	74.1
Indigenous (%)	n.p.	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	n.p.

(a) Excludes Western Australia.

Notes

1. Some sources were unable to supply average age. As a result, average age for Australia is indicative only.
2. FTE based on a 38-hour week.
3. FTE per 100,000 population based on ABS estimated resident population.
4. Rates have not been published where the number employed for any occupation is fewer than 30 people.

Sources: Professional associations and organisations employing eye health workers.

Table A25: Orientation and mobility specialists, number and characteristics, by state and territory, 2011

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia[(a)]
Number employed	73	49	9	n.a.	15	5	6	1	158
Average weekly hours worked	33.4	32.8	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	33.9
FTE number	64.2	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	140.9
FTE rate	0.9	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	0.6
Average age (years)	39.4	47.2	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	42.3
Aged under 30 (%)	24.7	2.0	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	15.8
Aged 50 and over (%)	23.3	38.8	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	27.8
Women (%)	74.0	69.4	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	71.5
Indigenous (%)	—	—	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	—

(a) Excludes Western Australia.

Notes

1. Some sources were unable to supply average age. As a result, average age for Australia is indicative only.
2. FTE based on a 38-hour week.
3. FTE per 100,000 population based on ABS estimated resident population.
4. Rates have not been published where the number employed for any occupation is fewer than 30 people.

Sources: Professional associations and organisations employing eye health workers.

Table A26: Orientation and mobility specialists, number and characteristics, by state and territory, 2012

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia[(a)]
Number employed	74	49	8	n.a.	16	5	6	1	159
Average weekly hours worked	33.4	32.1	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	33.6
FTE number	65.0	41.4	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	140.5
FTE rate	0.9	0.7	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	0.6
Average age (years)	40.4	48.9	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	42.6
Aged under 30 (%)	24.3	4.1	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	17.0
Aged 50 and over (%)	24.3	38.8	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	27.7
Women (%)	73.0	69.4	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	71.7
Indigenous (%)	—	—	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	—

(a) Excludes Western Australia.

Notes

1. Some sources were unable to supply average age. As a result, average age for states and Australia is indicative only.
2. FTE based on a 38-hour week.
3. FTE per 100,000 population based on ABS estimated resident population.
4. Rates have not been published where the number employed for any occupation is fewer than 30 people.

Sources: Professional associations and organisations employing eye health workers.

Table A27: Orientation and mobility specialists, number and characteristics, by state and territory, 2013

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia[(a)]
Number employed	67	49	8	n.a.	17	5	5	1	152
Average weekly hours worked	33.5	31.6	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	33.5
FTE number	43.1	44.5	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	133.8
FTE rate	59.0	40.8	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	0.6
Average age (years)	0.8	0.7	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	43.4
Aged under 30 (%)	9.0	4.1	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	9.9
Aged 50 and over (%)	26.9	34.7	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	28.3
Women (%)	71.6	71.4	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	71.1
Indigenous (%)	—	—	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	—

(a) Excludes Western Australia.

Notes

1. Some sources were unable to supply average age. As a result, average age for states and Australia are indicative only.
2. FTE based on a 38-hour week.
3. FTE per 100,000 population based on ABS estimated resident population.
4. Rates have not been published where the number employed for any occupation is fewer than 30 people.

Sources: Professional associations and organisations employing eye health workers.

Table A28: Orientation and mobility specialists, number and characteristics, by state and territory, 2014

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number employed	72	49	22	8	17	5	6	1	182
Average weekly hours worked	33.9	32.2	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	34.0
FTE number	64.3	41.5	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	163.0
FTE rate	0.9	0.7	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	0.7
Average age (years)	42.6	45.1	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	43.1
Aged under 30 (%)	18.1	4.1	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	12.1
Aged 50 and over (%)	22.2	34.7	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	25.8
Women (%)	77.8	71.4	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	74.7
Indigenous (%)	—	—	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	—

Notes

1. Some sources were unable to supply average age or average hours worked. As a result, average age and average hours worked for states and Australia are indicative only.
2. FTE based on a 38-hour week.
3. FTE per 100,000 population based on ABS estimated resident population.
4. Rates have not been published where the number employed for any occupation is fewer than 30 people.

Sources: Professional associations and organisations employing eye health workers.

Table A29: Occupational therapists specialising in eye health, number and characteristics, by state and territory, 2010

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia[(a)]
Number employed	27	26	10	n.a.	7	—	3	—	73
Average weekly hours worked	n.p.	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	32.2
FTE number	n.p.	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	61.9
FTE rate	n.p.	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	0.3
Average age (years)	n.p.	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	35.6
Aged under 30 (%)	n.p.	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	37.0
Aged 50 and over (%)	n.p.	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	19.2
Women (%)	n.p.	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	83.6
Indigenous (%)	n.p.	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	n.p.

(a) Excludes Western Australia.

Notes

1. Some sources were unable to supply average age. As a result, average age for Australia is indicative only.
2. FTE based on a 38-hour week.
3. FTE per 100,000 population based on ABS estimated resident population.
4. Rates have not been published where the number employed for any occupation is fewer than 30 people.

Sources: Professional associations and organisations employing eye health workers.

Table A30: Occupational therapists specialising in eye health, number and characteristics, by state and territory, 2011

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia[(a)]
Number employed	36	29	13	n.a.	8	—	4	—	90
Average weekly hours worked	28.1	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	31.2
FTE number	26.6	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	73.8
FTE rate	0.4	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	0.3
Average age (years)	34.1	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	35.4
Aged under 30	30.6	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	40.0
Aged 50 and over (%)	2.8	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	16.7
Women (%)	97.2	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	91.1
Indigenous (%)	—	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	n.p.

(a) Excludes Western Australia.

Notes

1. Some sources were unable to supply average age. As a result, average age for states and Australia are indicative only.
2. FTE based on a 38-hour week.
3. FTE per 100,000 population based on ABS estimated resident population.
4. Rates have not been published where the number employed for any occupation is fewer than 30 people.

Sources: Professional associations and organisations employing eye health workers.

Table A31: Occupational therapists specialising in eye health, number and characteristics, by state and territory, 2012

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia[(a)]
Number employed	31	27	12	n.a.	7	—	3	—	80
Average weekly hours worked	27.3	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	29.8
FTE number	22.3	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	62.6
FTE rate	0.3	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	0.3
Average age (years)	36.5	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	36.6
Aged under 30 (%)	22.6	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	36.3
Aged 50 and over (%)	9.7	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	20.0
Women (%)	96.8	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	92.5
Indigenous (%)	—	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	n.p.

(a) Excludes Western Australia.

Notes

1. Some sources were unable to supply average age. As a result, average ages for states and Australia are indicative only.
2. FTE based on a 38-hour week.
3. FTE per 100,000 population based on ABS estimated resident population.
4. Rates have not been published where the number employed for any occupation is fewer than 30 people.

Sources: Professional associations and organisations employing eye health workers.

Table A32: Occupational therapists specialising in eye health, number and characteristics, by state and territory, 2013

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia[(a)]
Number employed	36	25	12	n.a.	11	—	4	—	88
Average weekly hours worked	27.8	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	30.4
FTE number	26.3	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	70.5
FTE rate	0.4	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	0.3
Average age (years)	35.4	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	36.9
Aged under 30 (%)	30.6	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	38.6
Aged 50 and over (%)	8.3	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	19.3
Women (%)	97.2	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	93.2
Indigenous (%)	—	n.p.	n.p.	n.a.	n.p.	—	n.p.	—	n.p.

(a) Excludes Western Australia.

Notes

1. Some sources were unable to supply average age. As a result, average ages states and Australia are indicative only.
2. FTE based on a 38-hour week.
3. FTE per 100,000 population based on ABS estimated resident population.
4. Rates have not been published where the number employed for any occupation is fewer than 30 people.

Sources: Professional associations and organisations employing eye health workers.

Table A33: Occupational therapists specialising in eye health, number and characteristics, by state and territory, 2014

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number employed	31	30	15	18	10	—	5	—	109
Average weekly hours worked	31.4	30.6	n.p.	n.p.	n.p.	—	n.p.	—	26.0
FTE number	25.6	24.2	n.p.	n.p.	n.p.	—	n.p.	—	74.5
FTE rate	0.3	0.4	n.p.	n.p.	n.p.	—	n.p.	—	0.3
Average age (years)	35.7	35.2	n.p.	n.p.	n.p.	—	n.p.	—	34.1
Aged under 30 (%)	35.5	46.7	n.p.	n.p.	n.p.	—	n.p.	—	44.0
Aged 50 and over (%)	12.9	20.0	n.p.	n.p.	n.p.	—	n.p.	—	17.4
Women (%)	93.5	90.0	n.p.	n.p.	n.p.	—	n.p.	—	92.7
Indigenous (%)	—	—	n.p.	n.p.	n.p.	—	n.p.	—	n.p.

Notes

1. Some sources were unable to supply average age or average hours worked. As a result, average ages and average hours for states and Australia are indicative only.
2. FTE based on a 38-hour week.
3. FTE per 100,000 population based on ABS estimated resident population.
4. Rates have not been published where the number employed for any occupation is fewer than 30 people.

Sources: Professional associations and organisations employing eye health workers.

Appendix B: Population estimates

This report presents information about eye health occupations, using measures such as number employed and FTE rate per 100,000 population. To derive FTE rates, population estimates are obtained from the ABS. The figures used to derive population and FTE rates in this report were the estimated resident population as at June 2015 (ABS 2015) and are shown in tables B1 and B2.

Table B1: Estimated resident population, by state and territory, 2010 to 2014 (people)

	Year				
	2010	**2011**	**2012**	**2013**	**2014**
New South Wales	7,144,292	7,218,529	7,307,183	7,409,337	7,518,472
Victoria	5,461,101	5,537,817	5,632,521	5,735,007	5,841,667
Queensland	4,404,744	4,476,778	4,568,205	4,651,912	4,722,447
Western Australia	1,627,322	1,639,614	1,656,035	1,670,498	1,685,714
South Australia	2,290,845	2,353,409	2,437,994	2,519,007	2,573,389
Tasmania	508,847	511,483	512,106	513,100	514,762
Australian Capital Territory	361,766	367,985	375,183	381,291	385,996
Northern Territory	229,778	231,292	235,881	242,541	245,079
Australia[(a)]	**22,031,750**	**22,340,024**	**22,728,254**	**23,125,868**	**23,490,736**

(a) Includes Other territories.

Source: ABS 2015.

Table B2: Estimated resident population, by remoteness area, 2011 (people)

	Major cities	**Inner regional areas**	**Outer regional areas**	**Remote areas**	**Very remote areas**[(a)]	**Australia**
New South Wales	5,333,092	1,403,271	443,177	30,533	8,456	7,218,529
Victoria	4,215,005	1,072,926	245,112	4,774	n.a.	5,537,817
Queensland	2,769,947	910,332	659,995	78,135	58,369	4,476,778
Western Australia	1,798,688	210,948	181,852	98,881	63,040	2,353,409
South Australia	1,200,476	177,396	201,777	45,164	14,801	1,639,614
Tasmania	n.a.	335,138	165,445	8,454	2,446	511,483
Australian Capital Territory	367,375	610	n.a.	n.a.	n.a.	367,985
Northern Territory	n.a.	n.a.	129,106	48,700	53,486	231,292
Other Territories	n.a.	389	n.a.	n.a.	2,728	3,117
Australia	**15,684,583**	**4,111,010**	**2,026,464**	**314,641**	**203,326**	**22,340,024**

(a) Includes migratory areas.

Source: ABS 2015.

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Related publications

The latest available workforce data and reports for Australian nurses and midwives, medical practitioners (including ophthalmologists) and a range of allied health occupations (including optometrists) are available at <http://www.aihw.gov.au/workforce/>.

The latest available information on eye health in Australia, including the reporting of other (non-workforce) indicators for the Australian Government's National Framework for Action to Promote Eye Health and Prevent Avoidable Blindness and Vision Loss (2005), is available at <http://www.aihw.gov.au/eye-health/>.

The following AIHW publications might also be of interest:

AIHW 2009. Eye health labour force in Australia. Cat. no. PHE 116. Canberra: AIHW.

AIHW 2011. Eye health in Aboriginal and Torres Strait Islander people. Cat. no. IHW 49. Canberra: AIHW.

This report presents the latest available data on the eye health workforce in Australia. It also provides a baseline for reporting against workforce capacity indicators.

In 2011, the latest year for which data were available for most professions, there were over 800 ophthalmologists, around 4,000 optometrists and over 6,000 allied ophthalmic personnel (orthoptists, optical dispensers, optical mechanics, orientation and mobility specialists and occupational therapists specialising in eye health) in the eye health workforce.