Vision and eye healthcare study in residential aged care facilities

Study report

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1. Executive Summary

It is imperative that the prevention and treatment of vision loss and provision of low vision services are high priorities in aged care in Australia, given the prevalence of vision loss among older people and the significant impacts and risks associated with vision loss.

Vision issues include macular degeneration (the main cause of blindness and major vision loss in people over 50), glaucoma, diabetic retinopathy, untreated cataract, uncorrected refractive error and many other conditions.

People with vision loss are significantly more likely to access the aged care system and they enter residential aged care three years earlier on average than other older people. The rate of vision loss amongst people in residential aged care facilities is significantly higher than in older people living in the community.

Vision loss in residents of residential aged care facilities can have many negative consequences, including significantly increasing the risk of falls and hip fractures. Falls are more common amongst residents of aged care facilities than the general population, with up to half of all residents falling at least once a year. Vision loss has a significant impact on other aspects of quality of life, reducing social independence by two times and trebling the risk of depression.

Macular Disease Foundation Australia (the Foundation) is aware from previous studies that residential aged facilities have little guidance or support in ensuring eye health of older people is understood and incorporated into the routine personal and clinical care of their residents.

In 2015, the Foundation was awarded a grant (4-Z2FYOE) from the Australian Government Department of Social Services for a project which aims to ‘reduce the incidence and impact of vision impairment’ in residential aged care facilities.

The specific objectives of the project are to:

- Undertake comprehensive eye testing of approximately 200 residents to demonstrate the prevalence of eye disease in RACFs
- Gain a comprehensive knowledge base of current practices regarding the diagnosis, monitoring and recording of eye conditions in participating residential aged care facilities (RACFs)
- Identify how the management of residents is adjusted based on their vision status. This will include an understanding of the legislative environment and different corporate policies and procedures
- Develop a practical guide to best-practice eye care for RACFs which could include an online education program, publications or DVD programs based on the audit results and ‘minimum standards of care’ recommendations
- Launch and disseminate resources
- Identify changes in practice following the introduction of best-practice resources by reauditing participating RACFs
In 2016, as the first stage of the project, the Foundation undertook a study of the eye health and vision care of 193 residents in eight RACFs across Sydney, with the full support and cooperation of the eight facilities, who all expressed a keen desire to participate in a project that aimed to improve the quality of life for residents.

The study included testing the vision and eye health of the 193 residents and examining their clinical records. A survey of the facilities’ management staff was undertaken to obtain information about policies and procedures within the facilities relating to the management of residents’ vision and vision impairment.

The Foundation has also reviewed the legislative and regulatory environment for residential aged care, and the current reform agenda for aged care in Australia.

This report identifies that more than three-quarters (78%) of the 193 residents examined had some form of eye disease requiring ongoing monitoring or treatment noted in their clinical records. Once tested by the study orthoptist and ophthalmologist, at least 141 residents (73%) were found to have some form of eye disease, and this number is likely to be higher as glaucoma was not always able to be diagnosed through testing on-site. Fifty-six of these residents were found to have untreated cataracts. Of particular note was that up to 68% of the residents tested had some degree of age-related macular degeneration.

These are extraordinary findings given that a vision disorder was the primary health condition in only 4.8% of all residential aged care admissions across Australia in 2015, and was not identified as the primary health condition of any of the 193 residents studied. It suggests that eye disease is a significant co-morbidity of residents of RACFs in Australia.

Importantly, a significant proportion of the residents tested did not provide reliable information about their eye health or vision, and nor were the RACF records a reliable or consistent source of information about eye diseases of residents, with eye disease diagnosed by the study orthoptist and ophthalmologist under-reported in the clinical record. This leads to a conclusion that care and management plans for residents should be based on other sources such as doctor and optometrist records and post-admission low vision assessments. However, the report also identifies that optometrist and medical specialists’ reports are usually communicated to the resident’s general practitioner rather than the RACF and none of the RACFs offered a low vision assessment to residents with low vision.

Accordingly, recommendations are made on a ‘model of vision care’ and how this might be incorporated into the routine personal and clinical care of residents in RACFs.

The report provides further evidence of under-utilisation of low vision aids by those who would benefit, despite the wide array of options available. Sadly, lack of access to vision services, aids, equipment and assistive technology is a continuing issue for residents in RACFs, as it is for all older people whose vision impairment is diagnosed after the age of 65 years and who are therefore ineligible for the National Disability Insurance Scheme (NDIS). This issue continues to fall between the silos of disability and aged care, leaving those in need in a highly disadvantageous, unfair and inequitable position.

The establishment of a national low vision aids, equipment and assistive technology scheme is recommended, that is available to all older people where they are receiving aged care services or not and is agnostic to where aged care is delivered, in keeping with current reform directions.
The report identifies that systems and processes for management of personal and clinical care within RACFs are driven by the regulatory environment and legislated requirements. Recommendations are therefore made on improving the quality framework for residential aged care, including to legislation, guidance materials for assessing RACFs against mandatory standards and education and resources for residential aged care providers and their staff.

Given the importance in the aged care reform agenda of consumers driving quality and innovation, recommendations are also made to increase the awareness and knowledge of best practice for eye health and management of vision loss in RACFs amongst consumers and their families.

Residential aged care is costly, both to government and consumers, and every effort should be made to ensure that the care provided maximises the well-being of consumers and minimises the risk of harm and of incurring further cost to the health and aged care systems.

There is an urgent need to reform vision care within the aged care system. With the aged care system undergoing major reform, the time is right to ensure that current and future users of the aged care system have access to appropriate vision care.
2. Key findings

Prevalence of eye disease in residents
Of the 193 residents included in the study, 151 residents (78% of total) had some form of eye disease requiring ongoing monitoring or treatment noted in their clinical records within the RACF. This included people with any age-related macular degeneration (AMD), diabetic retinopathy (including diabetic macular edema), other retinal conditions, glaucoma, elevated intraocular pressure (IOP), or untreated cataract. Sixty residents (31%) had more than one of the above eye diseases.

After vision and eye health testing conducted as part of this study, a similar number of residents were found to have some form of eye disease, although the distribution of the conditions varied considerably from the clinical records. Of the 193 residents tested, 141 (73%) were diagnosed with at least one of macular degeneration, other retinal pathology, glaucoma, raised IOP or diabetic retinopathy or untreated cataract in one or both eyes.

While 119 residents (62%) were diagnosed with some degree of macular degeneration, only 46 of these were noted in the facility's clinical record for the patient. A further 12 residents were identified in clinical records as having AMD, but this was unable to be verified by the study orthoptist or ophthalmologist as the residents' physical limitations or frailty prevented taking adequate quality photos or scans. If it is assumed that the 12 residents did indeed have AMD, a total of 131 residents or 68% had some degree of AMD.

Thirteen residents were diagnosed with glaucoma or elevated IOP in the study vision and eye health testing but only six of these were noted in the facility records. Another 21 residents had a clinical record noting a diagnosis of glaucoma, but due to limited on-site testing conditions this was unable to be confirmed. Combining the testing and clinical record, it is possible that up to 34 people (17%) had glaucoma or raised IOP.

Significantly, 49 people (25%) had vision worse than 6/12 in the better eye, classifying them as having low vision. Eight people (4%) were legally blind.

Urgent treatment needs identified
Two of the residents with wet AMD were recommended to have an urgent (within one week) appointment with an ophthalmologist, and overall, 28 residents (15%) were recommended to receive further professional follow up (optometrist or ophthalmologist) outside their normal regular check-up.

Management of low vision and other vision impairment
Six of the eight RACFs have policies and procedures to manage residents with low vision and other vision impairment. This management is recorded in several locations including the care plan and nursing notes which reflect daily management of the resident, medical notes and the communication and sensory assessment form. There did not appear to be a central location where this information was stored in any of the facilities, making quick or reliable access difficult.

Management of vision impairment is reviewed when the care plan is reviewed.
Significantly, none of the RACFs offered a low vision assessment to residents with low vision. Facilities in the study typically do not provide Amsler grids to people for self-testing of changes in vision.

**Accuracy, upkeep and utilisation of clinical information**
A significant proportion of the 193 residents included in the study did not provide reliable information about their eye health or vision and their RACF records were not a reliable or consistent source of information about eye diseases, with diagnosed eye disease under-reported.

Eye disease diagnosed pre-admission will most likely be recorded in admission documentation. However, undiagnosed eye disease or new eye disease developed after admission may not be known to RACF staff if the resident or family do not report it, the findings of optometry reports are not communicated to staff, ophthalmologists’ reports are not received or admission documentation is not updated.

All facilities in this study utilised a visiting optometry service to provide basic vision care and eye checks. However, if optometrists identify eye disease, they will typically report this to the resident's general practitioner. They may also provide a hard copy report to the RACF however it is unclear whether this is routinely communicated verbally to RACF management and whether it is acted upon by the RACF.

**Staff training and education**
Five of the eight RACFs reported providing education for staff on vision care. However, vision education was not mandatory and staff competencies were not assessed. Face to face training about vision and eye health was undertaken by RACF staff including by the registered nurse. External vision care providers were involved in staff education in three facilities and online training resources were also used.

**Access to low vision aids**
All facilities reported making adjustments for low vision residents and most reported offering low vision aids. It is not known however what low vision technology is available and utilisation of low vision aids other than spectacles was very low with only 8 residents (16.3% of those with low vision) reporting that they used low vision aids. Aids that are being used are regular and handheld electronic magnifiers as well as a table top large screen magnifier and a computer.

Residents with AMD had very low levels of low vision assessment and use of aids, with only one of 22 residents with AMD and low vision using a low vision aid.

Of critical importance, aids, equipment and assistive technology to assist with management of vision loss are not included in the specified care and services for residential care in aged care legislation. Further, residents of government-funded residential aged care are ineligible for state and territory based aids and equipment and assistive technology schemes, which provide some, but varying, access to vision aids and assistive technology.

Residents typically had spectacle lenses and frames in good condition and five out of the eight RACFs had a hard copy policy for the management of spectacles. The overall good situation for glasses is consistent with the relative frequency of optometry visits in these RACFs, and that the primary purpose of their visits relates to checking glasses.
However, there was no standard method for identifying residents’ spectacles. Several facilities did not have a formal process while others had more than one method of identifying glasses.

**Access to ophthalmology**

Only a quarter of all residents had an ophthalmology consultation recorded in their clinical records. Of these residents, 96% had an identified eye disease but an ophthalmology report was available in only 60% of cases.

The major barriers to seeing an ophthalmologist were identified as transport to the ophthalmologists’ rooms, cost and gaining family/carer consent.

**Regulation and quality assurance**

Current regulation of residential aged care facilities does not pay sufficient attention to ensuring best practice in identification and management of residents’ eye health. There are few specific requirements of residential aged care facilities in relation to the eye health of their residents.

The Quality of Care Principles, a legislative instrument under the *Aged Care Act 1997* require facilities to provide assistance to residents to address difficulties arising from impaired vision and to access treatment, health practitioner services, rehabilitation support and individual and specialised therapy services as needed but do not specify what assistance might be provided in relation to impaired vision, other than cleaning spectacles.

The Results and Processes Guide for the current mandated Accreditation Standards for residential aged care facilities contains more detailed information on processes for managing sensory loss including vision loss but these processes are very general and are not requirements of residential aged care providers.

However, achieving accreditation is a requirement for becoming an approved residential aged care provider, and the study findings suggest that systems and processes within RACFs follow closely guidance materials from the Australian Aged Care Quality Agency, currently the sole assessing agency.

These guidance materials are currently under review, due to the Australian Government decision to develop a single quality framework for aged care, including a single set of standards to apply to all aged care services. There is therefore an opportunity to ensure that guidance materials are more specific about best practice vision and eye health care in RACFs.
3. Recommendations

Management of vision and eye health in residential aged care

1. That the model of care for the management of vision and eye health at Appendix 1 be adopted by residential aged care facilities (RACFs) to ensure:
   - strengthened arrangements for the provision of optometry services covering referral requirements, routine and ad hoc attendance, clinical assessment frequency, documentation, reporting, referral to ophthalmologist notification, service reminders, provision of glasses and communication with family/carers for new and existing residents about vision and eye disease
   - enhanced communication about eye appointments and vision management between the RACF and family/carers and eye healthcare providers
   - a formal request to the ophthalmologist to visit the RACF when appropriate transport is not available for a resident to attend an external ophthalmology appointment
   - awareness of vision as a risk factor for falls, mobility issues and increasing dependency in activities of daily living and the importance of referral to an optometrist for an eye health test
   - the offer of a low vision assessment to the resident/family/carers when visual acuity is less than 6/12 in both eyes
   - a systematic approach to the identification of residents' spectacles and subsequent documentation
   - use of the Amsler grid on a weekly basis for those diagnosed with age-related macular degeneration as part of a care plan.

Clinical and care plan documentation

2. That comprehensive record keeping (resident's vision and eye health status) be commenced on entry to the RACF including diagnosed eye disease, ophthalmologist's details and optometry visits along with consistent and routine updating.
3. That eye health information be included in the Care Plan and on the Sensory & Communication Form
4. That RACFs arrange with residents and/or their families and carers to obtain ophthalmology reports from residents' GPs or ophthalmologists
5. That components of the model of care be included in any commercial contract with optometric service providers.

Vision & eye health training and education for staff

6. That relevant RACF staff including nursing, care assistants and activities staff undertake mandatory vision and eye health education at orientation with annual refreshers and complete an annual ‘assessment of vision and eye health’ knowledge test.
7. That routine vision and eye health education includes:
   - information about common eye diseases
   - an explanation of key terminology used in vision and eye health reports
   - awareness and early detection for eye disease and low vision
   - impact of low vision on quality of life and independence
• low vision aids and technology education

8. That the Aged Care Workforce Strategy Taskforce be provided with a copy of this report to inform its consideration of requirements for new workforce training and continuing professional development in aged care.

9. That RACFs are made aware of resources available from the Foundation for eye health and low vision education, including through the Australian Government Aged Care Channel and the Australian Aged Care Quality Agency annual Better Practice conferences.

Regulation and accreditation

10. That guidance material for the single quality standards to apply to all aged care services in Australia be developed with reference to the above recommendations.

11. That further specification of the assistance to be provided with vision care be included in the specified care and services in the Quality of Care Principles when these are next reviewed.

12. That the National Screening and Assessment Form and supplementary assessment tools be reviewed in relation to their adequacy in assessing eye health.

13. That consideration be given to including the incidence of falls in the National Quality Indicator Program, as this may be an indicator of the effectiveness of resident’s vision care.

14. That consideration be given to developing a quality of life indicator for inclusion in the National Quality Indicator Program, given the impact of vision loss on quality of life and independence.

Consumer education

15. That the My Aged Care website include up to date and accessible information on eye health in older people and the information that consumers and their families require to determine if residential aged care facilities are following best practice vision care.

Access to vision aids and assistive technology

16. That the My Aged Care website service finder contain accurate and updated information on low vision service providers

17. That a nationally funded, accessible, affordable and consistent low vision aids, equipment and assistive technology program be established to replace the current state/territory government programs.

18. That consistent access to appropriate vision aids and equipment and assistive technology be established across the aged care system regardless of where the care is delivered.

Funding model for residential aged care

19. That the Resource Utilisation and Classification Study in residential aged care consider the extent to which vision loss, as a significant co-morbidity of aged care residents, drives costs of care or potentially drives costs of care in residential aged care.
4. Vision loss and eye disease in older Australians

Definitions of low vision and blindness

A number of terms are used to describe a reduction in normal visual performance. Definitions can vary depending on context and the country.

Vision impairment, vision loss or reduced vision

These are non-specific terms to describe anyone with a reduction in the level of their functional vision.

Low vision

The definition of low vision used in this report is ‘a best corrected visual acuity of less than 6/12 in the better eye that cannot be corrected with spectacles or surgery’. This level of vision loss (6/12 or worse) is the level at which morbidity and mortality increases, and is recognised for the social and economic restrictions it places on people. Vision acuity of less than 6/12 has been found to result in a greater likelihood of falls, nursing home admission, and emotional and functional difficulties.

There is good evidence that people with a visual acuity of worse than 6/12 in the better eye can benefit from low vision aids, equipment and assistive technology. If ignored, this level of vision loss can impact morbidity, mortality and quality of life.

Legal blindness

In Australia, and in the context of central vision loss, legal blindness is most simply defined as visual acuity worse than 6/60 in the better eye. (That is, both eyes have vision worse than 6/60).

A more complete definition of legal blindness, to include loss of peripheral vision is:

a. Corrected visual acuity (that is, with appropriate spectacles or contact lenses) on the Snellen Scale must be less than or equal to 6/60 in both eyes; or

b. Constriction to within 10 degrees or less of arc of central fixation in the better eye, irrespective of corrected visual acuity (i.e. visual fields are reduced to a measured arc of 10 degrees or less); or

c. A combination of visual defects resulting in the same degree of visual impairment as that occurring in the above points.

For the purpose of accessing a blind pension, legal blindness must be formally diagnosed by an ophthalmologist.

Visual acuity and function

Unfortunately, in some people, the measurement of visual acuity does not accurately reflect the extent of functional vision impairment. For example, some people can have a small central 'window' enabling the eye chart to be read - one letter at a time - however the person may be unable to read at an acceptable speed as this requires central acuity that can see several letters or even words ahead.
### Risks associated with vision loss in older people

People with vision loss are significantly more likely to access the aged care system\(^1\), and the rate of vision loss amongst people in aged care facilities is significantly higher than in older people living in the community\(^2\).

Impaired vision for residents of residential aged care facilities (RACFs) can have many negative consequences, including significantly increasing the risk of falls\(^3\). Falls are more common amongst RACF residents than the general population, with up to half of all residents falling at least once a year\(^4\).

With regard to the provision of care to people with vision impairment, a recent study\(^5\) reported that diagnosis of causes of vision impairment may not be recorded in RACF’s care plans and that many staff do not feel confident to identify residents with low vision.

### Detection of vision loss

Early detection is essential to prevent vision loss associated with many eye diseases and can only be achieved by regular, comprehensive eye examinations, including examination of the macula at the back of the eye. Such examinations must be conducted by optometrists or ophthalmologists using specialised equipment.

### Common eye diseases and conditions in older people

Many eye diseases and conditions affect older Australians, including residents in aged care. The most common conditions that can lead to major vision loss or blindness are age-related macular degeneration, glaucoma, diabetic retinopathy, untreated cataract and uncorrected refractive error.

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3. Australian Commission on Safety and Quality in Healthcare (2009, August) Preventing Falls and Harm from Falls in Older People: Best Practice Guidelines for Australian Residential Aged Care Facilities.


Causes of blindness in Australia

Age-related macular degeneration
The leading cause of legal blindness and severe vision loss in Australia is age-related macular degeneration or AMD. It is a progressive, chronic disease of the macula, the central part of the retina, at the back of the eye. AMD leads to a loss of central vision, affecting the ability to read, drive, recognise faces and perform activities requiring detailed vision. Although it affects central vision, it does not produce total or black blindness.

Key facts
- 50% of all legal blindness is due to macular degeneration
- The prevalence of macular degeneration increases with age
- The prevalence of macular degeneration is 4 times that of dementia and more than half that of diabetes.
- Approximately 1 in 7 Australians over 50 (1.25 million people in 2017) have some evidence of macular degeneration
- The number of people with some evidence of macular degeneration will increase to 1.7 million by 2030, in the absence of effective prevention and treatment measures.
- In 2017, 12% of people over 50 years (1,048,000) have early signs of macular degeneration
- In 2017, 2% of people over 50 years (214,000) have late stage macular degeneration which included 81,000 with late stage dry macular degeneration and 133,000 people with wet macular degeneration
- Over 14% of people over 80 years (156,000) have vision loss or blindness from age-related macular degeneration
- The total cost of vision loss associated with macular degeneration was estimated at approximately $5 billion in 2010.
- The socio-economic impacts of macular degeneration include lower employment rates, higher use of services, social isolation, emotional distress and an earlier need for nursing home care.

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7 Deloitte Access Economics and Macular Degeneration Foundation (now Macular Disease Foundation Australia), 2011, Eyes on the Future - A clear outlook on age-related macular degeneration.
The impact of macular degeneration on quality of life is equivalent to cancer or coronary heart disease.

**Types of age-related macular degeneration**

AMD is categorised as either early stage, typically with little or no impact on vision, or late stage disease where vision may be significantly affected. Late stage disease is further sub-divided into:

- atrophic (dry) AMD where certain retinal cells atrophy and die, or
- neovascular (wet) AMD where new, leaky blood vessels form under the retina.

Dry AMD tends to progress over many years or decades, whereas wet AMD can appear suddenly, even overnight.

**Treatment of age-related macular degeneration**

There is currently no medical or surgical treatment for early or dry AMD, although certain diet and lifestyle changes can slow down the disease and reduce the risk of progression to vision loss.

Highly effective treatment for wet AMD is now available with the use of ongoing injections of an anti-vascular endothelial growth factor (VEGF) drug into the eye. Injections are initially given a month apart for at least 3 months, with subsequent injections spaced at a frequency determined by an individual's response. Ongoing injections are typically spaced between every four to twelve weeks, and may be required for life.

Successful treatment of wet AMD is highly dependent on early detection and rapid initiation of injections. Ideally, injections should start no more than a week or two after the blood vessels start leaking. In most cases, treatment will be required on a regular, ongoing basis, to ensure maintenance of functional vision. Without treatment, or if treatment is started late or stopped prematurely, vision will almost always deteriorate rapidly with legal blindness being a common outcome.

Early detection of wet AMD is assisted by the regular use of an Amsler grid between optometry visits and is commonly recommended to help people detect symptoms of central vision loss or sudden changes in vision, which may trigger the need for urgent review.

**Diabetic retinopathy**

Diabetic retinopathy is a serious disease resulting from damage to the small retinal blood vessels at the back of the eye due to the high blood glucose levels seen in people with diabetes. The damaged vessels leak blood and fluid and can cause swelling of the central retina (macula) leading to vision loss. In very serious cases, many leaky new blood vessels form in the retina which can bleed into the middle of the eye causing scarring and pulling on the retina, which can also cause a retinal detachment. Without timely treatment, this can cause total blindness.

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Diabetic retinopathy occurs in about a third of people with diabetes, and the longer one has had diabetes, the higher the risk of retinopathy.

Most importantly, the disease is often without any obvious symptoms until the latest stages, so that regular eye tests of people with diabetes are essential.

**Treatment of diabetic retinopathy**

It is critical to control diabetes as well as possible in order to reduce the chance of retinopathy developing. At a certain stage of retinopathy, treatment is essential, using medication, and sometimes eye injections and/or laser treatment, depending on the nature and extent of the disease.

**Glaucoma**

Glaucoma is a chronic, potentially blinding disease that results in progressive damage to the nerves at the back of the eye. It initially affects the peripheral (outside) vision, but if not treated effectively, vision loss gradually moves inwards to eventually affect central vision.

- Approximately 300,000 Australians have glaucoma.
- 2 in 100 Australians will develop Glaucoma in their lifetime
- 1 in 8 Australians aged over 80 years will develop glaucoma
- First degree relatives of people with glaucoma have an up to 10-fold increased risk of developing the disease
- Currently, about 50% of people with glaucoma remain undetected⁹.

High intraocular pressure (pressure inside the eye) is a major risk factor for glaucoma, and treatment typically involves one or more measures to reduce pressure. Treatment may involve any or all of daily eye drops, laser treatment or surgery.

Treatment is usually very effective in reducing vision loss. If drops are used, they are normally required for life and must be used daily to be effective.

**Cataracts**

A cataract occurs when the normally clear lens inside the eye becomes cloudy or opaque, reducing the amount and sharpness of light that reaches the retina. Symptoms include a loss of clarity and acuity, washed out colours, increased glare and distortion. It can be like looking through a thick fog.

Cataracts are very common in older people. By the age of 80, almost everyone will have some degree of cataract formation.

Treatment involves the surgical removal of the cloudy lens, with replacement by a new plastic lens implant. Surgery is considered a routine procedure and is extremely effective in almost all cases. Cataract surgery is essentially a cure for the condition, although some people may need some minor laser treatment months or years after surgery to remove cells that grow on the bag that holds the lens in place.

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Unlike treatment for wet macular degeneration, the timing of cataract surgery is normally not critical. Cataract surgery can usually be delayed until vision loss impacts daily activities.

**Uncorrected refractive error**

Refractive error (myopia, hyperopia, astigmatism or presbyopia) is almost universal in older people, resulting in poor focusing and blurred vision. While refractive error can easily be corrected with appropriate prescription spectacles, a surprisingly large number of people endure poor vision due to an incorrect or outdated prescription or some cases, by not wearing glasses at all. This may be because glasses have been lost or damaged and not replaced. In RACFs, some residents may inadvertently pick up and keep someone else's glasses. It is therefore critical that:

- RACFs label and/or keep a photographic record of residents' glasses, and occasionally check that residents are using their own glasses
- RACFs ensure residents' vision is checked at least annually by an optometrist, and glasses are updated as required.
5. Residential aged care in Australia

Overview of residential aged care

Residential aged care in Australia is subsidised by the Commonwealth Government and is governed by the *Aged Care Act 1997* (the Act).

Government-subsidised residential aged care is a $17.4 billion per annum industry in Australia, with Government contributing $11.6 billion, residents paying $4.5 billion towards operating costs and other income generating $1.3 billion in 2016\(^{10}\). In addition, residents and their families make a substantial contribution to the capital development of aged care facilities by providing interest free loans to residential aged care providers through refundable accommodation deposits and/or by making rental-type payments.

Australian government-subsidised residential aged care services provide permanent care and respite care. The types of services provided depend on the needs of the resident. All residents receive accommodation, support services (cleaning, laundry and meals) and personal care services, and those with greater needs might also receive nursing care, continence aids, basic medical and pharmaceutical supplies and therapy services.

In 2015-16, 227,819 older people utilised permanent residential aged care nationally, occupying 195,825 residential aged care operational places\(^{11}\). At 30 June 2015, 59% of people in permanent residential aged care were aged 85 and over and two-thirds (68%) of people in permanent residential aged care were women. The average age of permanent residents in 2015 was 84.6 years. The average age for a man in permanent residential aged care at 30 June 2015 was 81.7, compared with 85.9 for a woman\(^{12}\).

To access government-funded residential aged care services, a person must first be approved as a care recipient through a comprehensive assessment undertaken by an Aged Care Assessment Team (ACAT, or ACAS in Victoria), using the National Screening and Assessment Form (NSAF). Supplementary, clinically-validated assessment tools are included as part of the NSAF and may be used by an assessor to inform a holistic assessment of a client’s needs, but these tools do not include any vision assessment tools\(^{13}\).

In 2015-16, the average annual Australian Government subsidy for a permanent residential aged care resident was $59,926\(^{14}\). The annual subsidy varies according to clients’ level of overall dependency which is assessed using the Aged Care Funding Instrument (ACFI). The ACFI measures need based on the level of dependency in each of three domains: Activities of Daily Living, Behaviours and Complex Health Care. Residents’ care needs may change and residents are reappraised using the ACFI as required.

The ACFI assessment records up to three diagnosed medical conditions in the order that they most affect people's care needs. At 30 June 2015, the most common health condition affecting


care needs of people who had a current ACFI assessment at 30 June 2015, was a nervous system disorder, which was the primary driver of the care needs of 44% of assessed people. Endocrine or metabolic disorders (such as diabetes) and cardiovascular disease were also common, at 17% and 12%, respectively. A vision disorder was the primary care needs driver of 4.8% of assessed people.15

All residents contribute to their living costs such as power, meals and laundry by paying a basic daily fee, which is set at 85% of the single person rate of the basic age pension. Residents are also means tested to determine their contribution to accommodation and care costs.

Aged care reform 2012 to date
Following a review of aged care undertaken by the Productivity Commission in 2011 and representations from the aged care sector, a range of reforms were announced in 2012, supported by the Aged Care (Living Longer Living Better) Act 2013. The reforms are being implemented progressively over 10 years.

Reforms to date include a phased increase in the aged care provision ratio and an increased proportion of home care places compared to residential care places; introduction of new home care package levels; introduction of Consumer Directed Care for home care package recipients and increased consumer choice of home care providers.

The My Aged Care website and contact centre were established to provide a clear entry point to the aged care system, with consumers needing to register with, and be screened by, My Aged Care before being able to access government-subsidised services. My Aged Care also provides information about aged care to consumers, family members and carers; information for service providers; online service finders that provide information about aged care service providers and assessors; and online fee estimators for pricing on home care packages and residential care. Screening and assessment processes have been standardised and client records have been centralised.

The Australian Aged Care Quality Agency, the Aged Care Pricing Commissioner and the Aged Care Financing Authority were also introduced.

The Commonwealth Home Support Programme which provides low-level support has replaced the Home and Community Care program. An announced intention to integrate home care packages (which provide higher-level support) with the Commonwealth Home Support Programme from 2018, and thereby achieve a continuum of home care based on need with common subsidies and consumer contributions, has been deferred until 2020.

Residential aged care reforms
Changes to how residential aged care is funded and delivered commenced from 2013. The changes were aimed at improving the sustainability of the residential aged care sector, and therefore safeguarding supply of residential care, as well as improving transparency and choice for the consumer.

The means test to determine residents’ contribution to their accommodation and care costs was expanded to include assets in addition to income, with annual and lifetime caps on any contributions. Changes were made to how accommodation payments could be paid by allowing these to be paid through a refundable lump-sum deposit or daily, rental-type payments or a combination of both. Residential care providers were permitted to charge additional payments or fees for a higher standard of accommodation or additional services.

The Aged Care Pricing Commissioner, established in 2013, was empowered from January 2014 to approve proposed accommodation payments higher than the maximum amount determined by the Minister for Aged Care (the Minister), and from 1 July 2014 to approve proposed extra service fees.

The maximum accommodation payment determined by the Minister is $550,000. From 31 January 2014 to 30 June 2015, the Aged Care Pricing Commission gave approval to providers to charge higher accommodation payments for 12,780 rooms or 6.64% of all aged care places.

In addition, the former distinction between low care and high care places in permanent residential aged care was removed, allowing any person with a permanent residential aged care approval to be admitted to any residential aged care place, subject to availability and the provider’s agreement. The removal of the low or high care place distinction also allows residents to ‘age in place’ within an aged care facility.

Transparency was improved for consumers by requiring providers to publish the maximum amount they charge for accommodation and extra services, which also improved the level of information available to consumers on which to base choice of provider. Allowing providers to charge higher accommodation payments and additional fees for higher standards of accommodation and extra services is also seen as improving choice for consumers and contributing to sustainability of the residential aged care sector.

A voluntary, national Quality Indicator Program has also been introduced for residential aged care. This initiative, and other changes to quality assurance for residential aged care are discussed below.

Future aged care reform

The Aged Care (Living Longer Living Better) Act 2013 provided that a comprehensive review of the reforms be undertaken after the first three years. The review, known as the Aged Care Legislated Review, commenced on 22 September 2016 following the appointment of Mr David Tune as the independent reviewer and was completed on 31 July 2017. The report must be tabled in both Houses of Parliament by 15 September 2017. The report may recommend further changes to the funding and delivery of aged care.

Work is also being undertaken by the Australian Government to investigate alternative approaches to determining residential care funding, and as part of this work has engaged the Australian Health Services Research Institute at the University of Wollongong to undertake a Resource Utilisation and Classification Study (RUCS) of residential aged care. The purpose of this study is to determine the characteristics of residents that drive residential care costs, and use this information to inform the Government’s consideration of future reform options, which may include a new resident classification tool.

The 2017-18 Federal Budget included $2 million over two years from 1 July 2017 to establish an aged care industry-led taskforce to develop an aged care workforce strategy. The Senate Community Affairs References Committee report into the future of Australia’s aged care workforce, which reported in June 2017, will “feed in” to the strategy. The Senate report recommended among other things that the aged care workforce strategy taskforce work with Australian Skills Quality Authority to establish nationally consistent minimum standards for aged care sector.

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training and accreditation, and that consistent workforce and workplace regulation be considered for all carer service sectors, including a continuing professional development requirement and workplace regulation of minimum duration for new worker training\textsuperscript{18}.

The Government’s Aged Care Sector Committee has also produced an Aged Care Roadmap which provides the Committee’s views on the short, medium and long-term actions “required to transform the current aged care system into a sustainable, consumer-driven and market-based system”\textsuperscript{19}. The Aged Care Roadmap proposes a future where Government will no longer regulate the number or distribution of services, with providers required to meet core standards based on their registration category and scope of practice and where consumers drive quality, price and innovation by exercising informed choice as to which provider/s they use.

**Care requirements in residential aged care**

The *Aged Care Act 1997* (the Act) requires approved providers of residential aged care homes to comply with User Rights’ Principles, Quality of Care Principles and Accreditation Standards.

**Quality of Care Principles**

The specified care and services to be provided to care recipients and the Accreditation Standards are set out in the Quality of Care Principles 2014, a legislative instrument made under the Act\textsuperscript{20}.

Part 2 of Schedule 1 of the Quality of Care Principles specifies the care and services to be provided for all care recipients in residential care services who need them. These include:

- Assistance with daily living activities, including personal assistance with “communication, including to address difficulties arising from impaired hearing, sight or speech, or lack of common language (including fitting sensory communication aids), and checking hearing aid batteries and cleaning spectacles.”

- Rehabilitation support, including individual therapy programs designed by health professionals that are aimed at maintaining or restoring a care recipient’s ability to perform daily tasks for himself or herself, or assisting care recipients to obtain access to such programs.

- Treatments and procedures that are carried out according to the instructions of a health professional or a person responsible for assessing a care recipient’s personal care needs, including supervision and physical assistance with taking medications, and ordering and reordering medications, subject to requirements of State or Territory law.

- Assistance in obtaining health practitioner services, including arrangements for aural, community health, dental, medical, psychiatric and other health practitioners to visit care recipients, whether the arrangements are made by care recipients, relatives or other persons representing the interests of care recipients, or are made direct with a health practitioner.


practitioner. For the purposes of the Quality of Care Principles, ‘health practitioners’ include optometrists.\textsuperscript{21}

- Assistance in obtaining access to specialised therapy services, including making arrangements for speech therapists, podiatrists, occupational or physiotherapy practitioners to visit care recipients, whether the arrangements are made by care recipients, relatives or other persons representing the interests of care recipients.

Part 3 of Schedule 1 of the Quality of Care principles specify the care and services for all care recipients who need them but where fees may apply to non-exempt residents. These care and services cover a range of nursing services, bedding, furnishings, maintenance therapy, and also goods to assist care recipients to move themselves, to assist staff to move care recipients and to assist with toileting and incontinence management. Residents exempt from fees include those with a high domain category in any Aged Care Funding Instrument (ACFI) domain; with a medium domain category in at least two ACFI domains; or who do not yet have an ACFI classification, and residents subject to grandfathering clauses.

Goods to be provided free of charge to exempt residents include
- Bed rails, incontinence sheets, ripple mattresses, sheepskins, tri-pillows, and water and air mattresses appropriate to each care recipient’s condition.
- Crutches, quadruped walkers, walking frames, walking sticks, and wheelchairs (excluding motorised wheelchairs and customised aids).
- Mechanical devices for lifting care recipients, stretchers, and trolleys.
- Absorbent aids, commode chairs, disposable bed pans and urinal covers, disposable pads, over-toilet chairs, shower chairs and urodomes, catheter and urinary drainage appliances, and disposable enemas.

Charter of Care Recipients’ Rights and Responsibilities - Residential Care
Schedule 1 of the Aged Care Act 1997, sets out User Rights Principles. For residents of residential aged care services, these include the rights to quality care appropriate to his or her needs and to full information about his or her own state of health and about available treatments.

Accreditation Standards
Residential care facilities must demonstrate their compliance with the Accreditation Standards to become an approved provider of Government-subsidised residential care services. Compliance is assessed by the Australian Aged Care Quality Agency (the Quality Agency). This involves periodic full audits, as well as unannounced visits. Each facility receives at least one unannounced assessment visit every year.

The Accreditation Standards comprise four Standards, four Principles and 44 expected outcomes. All Standards are high level standards and are intended to provide a structured approach to the management of quality by representing clear statements of expected performance. They do not prescribe actions for satisfying expectations but “opportunities to pursue quality in ways that best suit the characteristics of each individual residential care

service and the needs of its care recipients”\textsuperscript{22}. Therefore, it is not expected that all residential care services should respond to a standard in the same way.

The Quality Agency has produced a Results and Processes Guide\textsuperscript{23} (the Guide) to assist assessors in identifying and considering relevant results and processes when assessing the performance of residential aged care homes against the Accreditation Standards. The Quality Agency emphasises the Guide does not include everything that should be looked at during assessments nor does it constitute a list of the steps to be taken by a residential aged care home to comply with the Accreditation Standards. Nevertheless, the Guide does provide useful, if informal, direction to residential aged care homes on how they might demonstrate compliance with the Standards and undertake a program of continuous improvement against the Standards.

Standard 2 relates to ‘health and personal care’ in general with vision loss specifically addressed by expected outcome 2.16 which requires that ‘care recipients’ sensory losses are identified and managed effectively’.

In relation to expected outcome 2.16, the Guide includes the following considerations\textsuperscript{24}:

- How does the home ensure regular assessments of care recipients’ sensory losses are conducted and communicated as per the general care process? For example, does this include:
  - consideration of the care recipients’ vision, hearing, smell, taste and touch including consideration of other medical conditions and other risk factors (such as other treatments, pain and checking of ear canals)
  - identification of the use and type of any aids
  - identification of the use of any medications which may aid sensory stimulation (including antibiotics)
  - consultation with care recipients/representatives about care recipient needs and preferences
  - consultation with relevant health professionals (such as optometrists, audiologists and skin care specialists) about the effective management of sensory loss and needs?
- How is care planning in relation to sensory loss conducted and communicated to the relevant staff as per the general care planning process? For example, does this include:
  - the use and type of aids, their maintenance and storage – preferred communication strategies where appropriate – the environment of the home and any safety hazards that may affect care recipients with sensory losses – sensitivity in providing care recipients with sensory experiences to stimulate their sensory systems?
- Are care recipients’ sensory losses reported to their medical officers?
- Is the care delivered consistent with plans to effectively manage sensory loss? For example:
  - care plans make it clear to staff which ear to insert the hearing aid
  - procedures are in place for the care and maintenance of hearing aids, spectacles/glasses, limb protectors, splints and other aids.

\textsuperscript{22} Australian Government Aged Care Quality Agency, Results and processes guide 2014, p7

\textsuperscript{23} Australian Government Aged Care Quality Agency, Results and processes guide 2014

\textsuperscript{24} ibid, p63
• How does the home regularly evaluate and review the management of sensory loss to determine effectiveness in meeting the needs of each care recipient? For example: − Are staff practices monitored including in relation to the use of assessment tools, equipment, and methods of managing sensory loss? − Is the home’s environment monitored?
• Are individual care recipients' sensory needs and preferences reviewed along with the care given and its effect including in relation to specific hygiene practices such as the cleaning of ears, eyes, skin and care recipients’ mouths?
• Are assessment tools monitored for effectiveness and appropriateness?

The Guide also acknowledges that achievement of outcome 2.16 is linked to other expected outcomes, including all other outcomes of Standard 2 ‘health and personal care’, as well as outcomes under Standard 3 ‘care recipient lifestyle’ and Standard 4 ‘physical environment and safe systems’.

**Education and promotion activities of the Quality Agency**

The Quality Agency functions include providing information and training for aged care providers and promoting quality. Activities to promote quality include a regular newsletter and the annual Better Practice awards and Better Practice conferences held across Australia.

**Reform of quality assurance of aged care**

As part of reforms to the aged care system, the Australian Government is changing the quality assurance system for aged care through development of a single quality framework. This includes developing a single set of aged care standards for all aged care services, to replace the current four sets of standards for different aged care services. Other aspects of the single quality framework include streamlining the assessment of provider performance against quality standards and improving information on quality for consumers.

A draft single set of aged care quality standards to apply to all aged care services was subject to public consultation in March – April 2017, together with options for assessing providers against standards. There are eight draft standards covering: consumer dignity, autonomy and choice; ongoing assessment and planning with the consumer; delivering personal care and/or clinical care; delivering lifestyle services and supports; service environment; feedback and complaints; human resources; and organisational governance.

While the draft standards are being finalised, the Quality Agency is working to produce detailed guidelines to support the implementation of the new draft standards. Information is also being developed for consumers to help them to understand the standards and what they can expect. These draft resources will be developed in parallel with the piloting of the draft standards, expected to occur over the remainder of 2017.

On 1 January 2016, the National Aged Care Quality Indicator Program commenced for residential aged care facilities. Participation in the program is voluntary, with participating facilities collecting data and reporting on three quality indicators for residential aged care: pressure injuries; use of physical restraint; and unplanned weight loss. Participating facilities are noted on the My Aged Care website; however, performance against the indicators is not reported publicly. Quality indicators for consumer experience and quality of life have also been
piloted in home care and residential aged care facilities, although a decision has yet to be made about their inclusion in the quality indicator program.

From 30 June 2017, the Quality Agency has introduced a new report, the Consumers’ Experience of the Quality of Care and Services: Aged Care Homes (Consumer Experience Report). The consumer experience reports are published alongside the audit reports, currently published on its website following re-accreditation audits of residential aged care facilities.

The Australian Government is also working with the National Aged Care Alliance on how other information on quality can be provided to consumers to inform their choice of provider, and drive quality improvement.

**Assessment of eye health care requirements in residential aged care**

There are few specific requirements of residential aged care facilities in relation to the eye health of their residents. The Quality of Care Principles do require facilities to provide assistance to residents to address difficulties arising from impaired sight and to access treatment, health practitioner services, rehabilitation support and individual and specialised therapy services as needed but do not specify what assistance might be provided in relation to eye health, other than cleaning spectacles.

The Guide for the current Accreditation Standards for residential aged care facilities contains more detailed information on processes for managing sensory loss including vision loss, however these processes are very general and in the view of the Foundation, do not provide sufficient guidance on routine vision monitoring and assessment that should be undertaken within RACFs, or arranged by RACFs for residents. There is no clear statement on how regularly residents should have their vision and eye health assessed by an optometrist or how vision loss can be routinely assessed within the RACF, in order to trigger reporting to residents’ medical practitioners.

As discussed below, early detection of some eye diseases is critical to effective treatment and management, as is early detection of a change to an already diagnosed eye disease.

Processes for residents with diagnosed eye disease are not specified separately to processes for managing vision loss in general.

While these processes are not requirements, achieving accreditation is a requirement for becoming an approved residential aged care provider, and the study findings suggest that systems and processes within RACFs follow closely guidance materials from the Australian Aged Care Quality Agency.

These guidance materials are currently under review, due to the Australian Government decision to develop a single quality framework for aged care, including a single set of standards to apply to all aged care services. There is therefore an opportunity to ensure that guidance materials are more specific about best practice vision and eye health care in RACFs.

**A critical issue is that in the residential aged care system, there are no established policy mechanisms for residents to access low vision aids and technologies.**
Despite Part 2 of the Quality of Care Principles 2014, stating that care recipients' sensory losses are to be identified and managed effectively, residential aged care facilities are not required to provide low vision aids and technologies as part of their service. Under Part 3 of the Quality of Care Principles 2014, only walking sticks and frames, wheelchairs, lifting equipment and continence aids are required to be provided free of charge to eligible residents by residential aged care facilities.

State and territory aids and equipment programs do not provide a viable alternative source of low vision aids and technologies for aged care residents. These programs are inconsistent across the country, with different eligibility criteria, requiring different levels of co-payment, and providing different types of aids. Many of these programs either exclude aged care residents or do not provide any low vision aids and technologies.25

Access to specialist low vision services by older people is also limited and inequitable. Despite considerable reform to aged care in Australia, the issue of access and affordability of low vision aids, equipment and assistive technologies for older people with vision loss and blindness has not been addressed. Unfortunately, this issue continues to fall between the silos of disability and aged care, leaving those in need in a highly disadvantageous, unfair and inequitable position.

Appendix 7 provides a list and indicative cost of low vision aids, equipment and assistive technology that should be subsidised and made available through a national low vision aids, equipment and assistive technology scheme.

There are numerous reviews underway in the aged care policy arena. The Aged Care Funding Instrument (ACFI) review will provide the opportunity to consider what health conditions or what combination of health conditions and residents’ characteristics drive RACF costs. However, if health conditions are not accurately identified, their contribution to costs will be hidden, or costs may not be incurred at all. It is therefore important that the ACFI review include a prospective study residents’ health conditions to identify the extent of under-reporting.

The development of a workforce strategy also presents an opportunity to consider RACF staff training, education and professional development requirements in relation to vision and eye-health.

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25 Macular Disease Foundation Australia 2017, Low vision, quality of life and independence: A review of the evidence on aids and technologies
6. Overview of vision and eye health care study in residential aged facilities

Background
In 2015, Macular Disease Foundation Australia (the Foundation) received a grant from the Australian Government Department of Social Services for a project which aims to ‘reduce the incidence and impact of vision impairment’ in residential aged care facilities (RACFs). The project is funded for two and a half years.

The overall aim of the project is to improve the eye health of residents in RACFs as there is clear evidence that they have more vision issues which are not adequately managed compared to similarly aged people living in their own home.

Specific objectives are to:

- Undertake comprehensive eye testing of approximately 200 residents to demonstrate the prevalence of eye disease in RACFs
- Gain a comprehensive knowledge base of current practices regarding the diagnosis, monitoring and recording of eye conditions in participating RACFs
- Identify how the management of residents is adjusted based on their vision status. This will include an understanding of the legislative environment and different corporate policies and procedures
- Develop a practical guide to best-practice eye care for RACFs which could include an online education program, publications or DVD programs based on the audit results and ‘minimum standards of care’ recommendations
- Launch and disseminate resources
- Identify changes in practice following the introduction of best-practice resources by reauditing participating RACFs
- Prepare and publish results

The first three objectives of the project have been achieved through a study undertaken in eight RACFs (seven from three different providers - Estia Health, Presbyterian Aged Care, BaptistCare - plus one independent provider – Allambie Heights). The study entailed a detailed audit of eye health practices, policies and procedures and clinical records of the eight RACFs and vision and eye health testing of 193 residents across the eight facilities.

These facilities covered a range of service levels in different socioeconomic areas in Sydney, New South Wales, Australia. Head office and senior management approval was provided for participation in the project.

As part of the project’s fourth objective, a draft ‘model of care’ has been developed using key findings and recommendations in consultation with the expert reference group established for the study.

Future activities will include:

a) Testing/piloting of the proposed model of care in the trial facilities with modifications as required
b) Development of a document with corresponding training resources to facilitate implementation of the model of care at other facilities

c) Promulgation of the new model of care including endorsement by the national bodies representing residential aged care facilities, and the major chains.

**Study design**
The study comprised four components:

1. **The use of an expert reference group to guide the project.**
   This group comprised a GP, optometrist, orthoptist, low vision expert and Foundation staff (Appendix 2). This group met from time to time to provide guidance and discuss results.

2. **The development of a current evidence base by using a descriptive element (audit).**
   This comprised two components:
   
   i. The use of a **clinical record audit tool** (Appendix 3) to determine what information was recorded in clinical records by the facility regarding residents' vision and eye health, both on entry to the facility and subsequently.

   ii. The use of a **facility audit tool**, (Appendix 4) to clarify the legislative requirements and processes used to determine:
      - a resident's vision status on entry to the facility
      - any policies or procedures within the facility designed to obtain information about residents' eye health
      - policies/procedures to ensure appropriate follow-ups with appropriate eye health providers to diagnose new disease, or monitor or treat existing disease
      - training of staff, residents and their families regarding eye health matters
      - any efforts to modify the management of people with vision issues, such as steps taken to reduce falls risk
      - any efforts to provide specialist low vision assessment and support for people with permanent vision loss

3. **Vision and eye health assessment**: a prospective determination of the vision status of a sample of residents within the facilities.

   The clinical record audit tool (Appendix 3) was based on the survey questionnaire used in the Blue Mountains Eye Study provided by Professor Paul Mitchell, the Foundation's national research advisor, and Chief Investigator of the Blue Mountains Eye Study.

   The vision and eye health assessment was performed by the study orthoptist who conducted a routine comprehensive eye examination of participating residents within each facility. All test results were reviewed by a qualified ophthalmologist (medical retina specialist) to confirm the study orthoptist's initial diagnosis. This enabled an accurate estimation of the proportion of residents with significant eye issues.

   It should be noted that the population tested were elderly, and many had significant mobility issues whilst some had mild to moderate cognitive impairment. As such, certain tests (e.g. Humphrey field analysis) were considered impractical for this study and were not used.
Results of these tests were given to the resident (if appropriate), their designated family member or guardian, clinical staff in the facility and noted in the residents’ personal records at this facility. They were also provided to the resident’s normal GP and eye specialist (ophthalmologist).

4. **Comparison of the vision and eye health testing results with the clinical audit of resident records** held by the facilities. It was hypothesised that there may be a significant shortfall in recording of vision loss or eye disease in the records held by the facilities, meaning that many residents may not be receiving the ongoing care that their condition requires.

**Ethics and safety considerations**
The study was approved by the Bellberry Health Ethics Research Committee. This is a national, independent, not-for-profit organisation which is certified by the National Health and Medical Research Council and recognised in the recent McKeon Review of Australian Medical Research as providing best practice.

If the eye examination found any issues that required closer examination and possible treatment, the staff at the facility (in consultation with the person conducting the tests, and/or GP) arranged for the individual to have further specialist tests and treatment as required.

Any additional tests and treatment that may have been required were not part of this study. This had been discussed with residents when obtaining consent. There was no cost to the resident for the vision and eye health assessment. A subsequent assessment and treatment with the specialist not as a result of the study may require payment.

The eye tests performed in the study are all considered standard care and posed negligible risk to the residents' health. No injections were given, and no mydriatic (dilating) eye drops were used. Where required, residents were accompanied by facility staff or the study orthoptist to and from their tests.

**Study Coordination**
The study was coordinated by a dedicated manager employed by the Foundation in liaison with the Foundation's Research & Policy Director and Chief Executive Officer.

Prior to the commencement of testing, the following start up tasks were completed:

- An Expert Reference Group (ERG) was established and convened. The ERG met by teleconference as required to provide input and guidance on the progress of the study. It also provided commentary on the key deliverables including the pre-audit report, the audit, key recommendations, draft model and resources
- Senior corporate management from the RACFs identified a facility coordinator to ensure cooperation from facility staff, communication to residents and/or their families/guardians.
- Informed consent forms for residents (or their family/guardian) and the RACF were developed.
• Identification of equipment required to test vision and eye health to be provided on loan and transported between RACFs by Optimed in accordance with an agreed schedule.

• A lockable testing room to accommodate the equipment was identified in all facilities. It had the capacity to be completely darkened either independently or using black plastic sheeting.

• A fully qualified, registered orthoptist with significant experience working with elderly people was recruited to undertake the vision and eye health testing. This avoided any potential conflict of interest that could occur by using the RACFs’ visiting optometrists. It also ensured consistency of measurement and data integrity.

• An ophthalmologist (retina specialist) reviewed all images taken during testing and provided additional validation of the study orthoptist’s diagnoses and recommendations for follow up.

• A data coding and entry specialist was contracted to work with the study team to develop data entry and data analysis protocols, and enter data from the vision and eye health testing undertaken by the study orthoptist.

• Identification of lockable storage at the Foundation offices to store paper survey forms.

• Organising the establishment of a secure restricted section of the network to store scanned and electronic results.

• Results were kept for analysis with any identifying details (such as the residents’ names) removed and replaced with numbers for analysis.

Study Methodology

Sample size and recruitment of residents

A planned sample size of 200 residents was based on a recommendation by Professor Paul Mitchell, the Chief Investigator of the Blue Mountains Eye Study. Professor Mitchell stated that this number should enable a clear indication of the extent of detected and undetected significant eye disease, given the expected overall prevalence of pathology in this age group. Eligibility criteria for participation were determined as:

• Residents who have consented to participate in the study. In some cases, informed consent may have been required from a carer/family member/guardian

• Participants are fluent in English or interpreters will be available.

Residents were excluded from the study if they were non-English speaking and no interpreter services were readily available, if they (or their guardian) were unwilling to sign an informed consent form, if they had severe dementia, extreme frailty or other condition making testing impractical or impossible or if they were terminally ill.

The study was advertised in participating RACFs by a flyer and talks by the study manager at resident meetings. A total of 193 eligible residents across the eight RACFs agreed to take part in the study and informed consent was obtained by the study manager. In some instances, the family or guardian provided informed consent. The consent form used for the project is at Appendix 5.

26 A slit lamp with puff test attachment, OCT, retinal camera, electronic LogMAR test adjustable for distance and luminance, multi-spot pinhole, MN reading chart, vertometer, autorefractor, trial lenses, trial frames and a contrast sensitivity chart
27 Optimed is a supplier of ophthalmic equipment
Vision and eye health assessment of participating residents
After obtaining individual informed consent, the study manager provided each facility with a testing schedule and each participating resident was given an appointment time. The testing schedule allowed one hour per resident which enabled a maximum of seven residents to be tested per day.

Testing of participating residents commenced on 6 June 2016 and was completed on 11 August 2016. Residents were then tested by the study orthoptist using the following standard non-invasive tests:

- visual acuity (near and distance)
- contrast sensitivity
- simple refraction (using autorefraction)
- check of existing glasses using a vertometer
- slit lamp examination (desk) or torch examination when slit lamp exam not possible
- non-mydriatic (undilated) fundus (retinal) photography
- optical coherence tomography (OCT)
- intra-ocular pressure test ("puff" test)
- confrontational visual field test (Donder's test)

Test results were recorded and reviewed by the study orthoptist. This included a preliminary diagnosis and any recommendations for follow-up. Test results and scans for any resident considered to require urgent review were sent by email to the study ophthalmologist on the same day. All other test results and scans were sent to the ophthalmologist on a weekly basis on a USB drive.

The ophthalmologist reviewed test results and provided a report on findings. Ophthalmology reports were coded and entered into the vision and eye health assessment database.

The testing schedule allowed an hour however most individuals’ test took approximately 30-40 minutes. Those with mobility, musculo-skeletal issues and/or cognitive impairment could take an hour to assess and in some instances, it was not possible to conduct all tests.

Clinical record audit
The study manager reviewed the clinical records held by the facility for the 193 people who agreed to have an eye test. This enabled a comparison of the data about eye health and disease held in the residents’ clinical records with the data generated by the study's prospective testing procedure.

Facility audit
A senior staff member from each RACF, being either the Executive Director or the Care Manager, was interviewed by the study coordinator about their policies and procedures relating to documentation, the management of vision and eye health and the education of their staff. The facility policy and procedure assessment tool is at Appendix 4. Questions required single or multiple responses.
Data analysis
Data comprised:

1. **The facilities’ clinical records** which were reviewed for information captured including diagnosed eye disease and optometry and ophthalmology consultations

2. **Orthoptist/ophthalmologist’s reports** on vision and eye health assessment of residents by the study orthoptist resulted in a report with digital images for review by the study ophthalmologist who then provided the ophthalmologist’s report.

3. **Residents’ responses** to questions about whether they had any eye disease, past eye surgery or had any concerns about their vision.

4. **Facility policies and procedures:** Senior clinical or management staff in eight RACFs were surveyed about their policies and procedures relating to the management of vision and vision impairment

All data were coded and entered into two Microsoft Excel spreadsheets for analysis.
7. Study results

Review of RACF clinical records

Demographics
Average age of residents tested was 86 years with an average two years’ residence in the facility (Table 1). 65% of residents tested were female whilst 35% were male. 42% of residents were 90 years or older (Fig.1).

Table 1: Average age & years in the RACF

<table>
<thead>
<tr>
<th></th>
<th>No.</th>
<th>Average age (yrs)</th>
<th>Range (yrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>193</td>
<td>86</td>
<td>52-103</td>
</tr>
<tr>
<td>Female</td>
<td>126 (65%)</td>
<td>86</td>
<td>63-103</td>
</tr>
<tr>
<td>Male</td>
<td>67 (35%)</td>
<td>88</td>
<td>52-101</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resident in RACF</th>
<th>No. (yrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>&lt;1 to 14</td>
</tr>
<tr>
<td>Average</td>
<td>2</td>
</tr>
<tr>
<td>Median</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 1: Residents' Age (5-year groupings)
Department of Veterans' Affairs (DVA) entitlement
Residents’ entitlement to a DVA health card which could provide financial assistance for approved services and technology was also captured. 41 of the 193 residents tested (21%) had some level of DVA entitlement.

RACF C and F with 13 (37%) and nine (38%) respectively, had the most tested residents in their facility with DVA cover whilst RACF G the least with 1 (3%) (Fig. 2)

Figure 2: DVA entitlement by RACF

Diagnosed eye disease in RACF clinical records
151 residents (78%) (Fig.4) had a diagnosed eye condition noted in their clinical record with many residents having more than one condition or more than one eye affected. This was recorded in clinical records in a variety of locations i.e. admission documentation, care plans, nursing and medical progress notes, communication and sensory assessment forms and in available optometry and ophthalmology reports. There did not appear to be a central location where this information was stored in any of the facilities, making quick or reliable access difficult.

Age-related macular degeneration (AMD)
The review of the clinical records identified 62 residents with AMD. This is 32 % of the study records reviewed. These residents had early, late/dry, wet or unspecified AMD.

Diabetic retinopathy
Diabetes was identified in the clinical records as a co-morbidity for 43 residents (22%) whilst only two residents had non-proliferative diabetic retinopathy noted in the facility's clinical record.

Cataract
When auditing the clinical records, the identification of an intraocular lens (IOL) led to the recording of cataract as well as cataract surgery (IOL).

Cataract in one or both eyes was recorded for 123 residents with 94 of these having had cataract surgery to insert an IOL. Thirty-three residents were recorded as having untreated cataract in one or both eyes.

Glaucoma and elevated intraocular pressure (IOP)
27 residents had glaucoma recorded in their clinical records. No resident was recorded as having raised IOP (defined as IOP >21 mmHg in either eye).
Figure 3 provides an overview of diagnosed eye disease noted in the clinical records of the study population.

Figure 3: Diagnosed eye disease from clinical record

Vision and other co-morbidities on entry into RACF
Residents are admitted to care in a RACF for many reasons. The review of the clinical record aimed to capture whether vision impairment was involved as well as co-morbidities both pre- and post-admission. No evidence was found to suggest that vision impairment was a predisposing factor for admission:

- 18% of residents with a stroke or transient ischaemic attack were diagnosed pre-admission however there was no record of whether the stroke affected vision.

- 22% of residents had diabetes with 21% diagnosed pre-admission. Two of these residents had non-proliferative diabetic retinopathy noted in the record.

- 54% of residents had a history of recurrent falls with 47% of residents having had a fall in the last twelve months. A fall was a frequent reason for admission however there was no specific evidence recorded of low vision being a factor in the falls leading to admission (Fig. 4).

- There was a suggestion that people with low vision may have had a slightly higher falls risk. 53% of people with low vision (BE < 6/12)\(^2\) experienced a fall in the last 12 months, compared to 44% of people who did not have low vision.

\(^2\) Best corrected visual acuity (BCVA) less than 6/12 in the better eye.
Ophthalmology and Optometry Consultations
The audit of the clinical records identified whether an optometrist or ophthalmologist had seen the resident for their eyes, for glasses or for any other treatment, when this occurred and whether there was a report.

Facilities' recording of both optometry and ophthalmology consultations and subsequent reports were inconsistent. Findings included that:

- Almost two thirds of all residents (64%) had an optometry consultation recorded and a report was identified for 85% of these consultations. 87% of those who had an optometry consultation had eye disease identified in their clinical record. In total, 45% of residents did not have any optometrist report available.

- Only a quarter of all residents had an ophthalmology consultation recorded with 60% of these having an ophthalmologist's report available. 96% of those who consulted an ophthalmologist had eye disease identified in their clinical record. In total, however, 85% of residents did not have any detailed ophthalmologist report available.

- Residents are more likely to have a report of their optometry consultation than their ophthalmology consultation.

When comparing facilities, the proportion of the facility's residents for whom there was a record of an optometry consultation either as a report or in clinical notes ranged from 23% to 87%. When an optometrist had been seen, most facilities had copies of optometrists' reports for a majority of those consultations, however only two facilities (RACF A & H) had reports for all of their residents seen by the optometrist (Fig 5).
Frequency of optometry visits
As stated above, 124 residents (64%) had a record of being seen by an optometrist and 123 of these records included a date when the resident was seen. 106 (85%) of those seen had a report. Three residents’ records were excluded from analysis (outliers) as dates recorded for the optometry visits were more than five years previously. When questioned by the study orthoptist, those residents did not know when they had last had their eyes tested. It is likely that they may have been seen more recently given that optometry services are provided regularly at the RACFs, but that the visit had not been recorded.

It is recommended by Optometry Australia and RANZCO and supported by a Medicare rebate that people over the age of 65 years should have their vision tested every 12 months, or more frequently when there are vision issues (as occurred in the majority of these residents). When a record of an optometrist visit was available, tests were mostly at a frequency consistent with this recommendation, i.e. at least every 12 months (Table 2):

- 98% of residents with an optometry visit and date noted were over 65 years of age and
- Excluding outliers, 81% of these residents had a record that they had been seen within 12 months
- The average and median time between visits was 6 and 7 months respectively for those seen within 12 months.

Optometry visits recorded with a date in the clinical record (3 residents with dates greater than 5 years were excluded from analysis) are outlined in Table 2.
Table 2: Optometry visits recorded in the clinical record with a date

<table>
<thead>
<tr>
<th>Test</th>
<th>Area</th>
<th>Months</th>
<th>No.</th>
<th>% Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optom visit with date</td>
<td></td>
<td></td>
<td>124</td>
<td>64.25%</td>
</tr>
<tr>
<td>Optom visit with date (outliers excl.)</td>
<td></td>
<td></td>
<td>120</td>
<td>62.18%</td>
</tr>
<tr>
<td>Av. Time optom visit &amp; exam</td>
<td></td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Med. Time optom visit &amp; exam</td>
<td></td>
<td></td>
<td></td>
<td>7.03</td>
</tr>
<tr>
<td>&gt; 65 with date (outliers excl.)</td>
<td></td>
<td></td>
<td>117</td>
<td>97.50%</td>
</tr>
<tr>
<td>Av. Time optom visit &amp; exam</td>
<td></td>
<td></td>
<td></td>
<td>8.91</td>
</tr>
<tr>
<td>Med. Time optom visit &amp; exam</td>
<td></td>
<td></td>
<td></td>
<td>7.00</td>
</tr>
<tr>
<td>&gt; 65 yrs seen in 12 months (outliers excl.)</td>
<td></td>
<td></td>
<td>95</td>
<td>81.20%</td>
</tr>
<tr>
<td>Av. Time optom visit &amp; exam</td>
<td></td>
<td></td>
<td></td>
<td>6.06</td>
</tr>
<tr>
<td>Med. Time optom visit &amp; exam</td>
<td></td>
<td></td>
<td></td>
<td>6.70</td>
</tr>
</tbody>
</table>

Vision & eye health assessment - orthoptist/ophthalmologist reports

Quality of scans and photos
The accuracy of a diagnosis is highly dependent on the quality of diagnostic images. Given the nature of this patient population, and certain ethical considerations, a number of compromises were required in the testing protocol including using a torch examination when a slit lamp could not be used with the resident. It would also have been ideal to use pupil dilation (mydriasis) to improve the quality of retinal photos, especially in people with cataract, however to maximise safety, mydriatic drops were not used. In some residents, it was simply not possible to perform some tests due to physical limitations or frailty, while others did not understand basic instructions.

Table 3: Quality of Images

<table>
<thead>
<tr>
<th>Test</th>
<th>Area</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCT</td>
<td>Macula</td>
<td>Good quality scans in both eyes 75%</td>
</tr>
<tr>
<td>OCT</td>
<td>Macula</td>
<td>Good quality scans in at least one eye 79%</td>
</tr>
<tr>
<td>OCT</td>
<td>Macula</td>
<td>Poor in 9%</td>
</tr>
<tr>
<td>OCT</td>
<td>Macula</td>
<td>Not done in 14%</td>
</tr>
<tr>
<td>OCT</td>
<td>Optic Disc</td>
<td>Good quality scans in both eyes 64%</td>
</tr>
<tr>
<td>OCT</td>
<td>Optic Disc</td>
<td>Good quality scans in at least one eye 74%</td>
</tr>
<tr>
<td>OCT</td>
<td>Optic Disc</td>
<td>Poor in 14%</td>
</tr>
<tr>
<td>OCT</td>
<td>Optic Disc</td>
<td>Not done in 17%</td>
</tr>
<tr>
<td>Retinal Photo</td>
<td>Macula</td>
<td>Good quality photos in both eyes 34%</td>
</tr>
<tr>
<td>Retinal Photo</td>
<td>Macula</td>
<td>Good quality photos in at least one eye 47%</td>
</tr>
<tr>
<td>Retinal Photo</td>
<td>Macula</td>
<td>Poor in 45%</td>
</tr>
<tr>
<td>Retinal Photo</td>
<td>Macula</td>
<td>Not done in 15%</td>
</tr>
<tr>
<td>Retinal Photo</td>
<td>Optic Disc</td>
<td>Good quality photos in both eyes 37%</td>
</tr>
<tr>
<td>Retinal Photo</td>
<td>Optic Disc</td>
<td>Good quality photos in at least one eye 49%</td>
</tr>
<tr>
<td>Retinal Photo</td>
<td>Optic Disc</td>
<td>Poor in 41%</td>
</tr>
<tr>
<td>Retinal Photo</td>
<td>Optic Disc</td>
<td>Not done in 16%</td>
</tr>
</tbody>
</table>
**Visual acuity (Distance vision)**

As would be expected in a population with an average age of 86, many people had a reduction in vision.

**Table 4: Visual acuity (distance vision)**

<table>
<thead>
<tr>
<th>Visual Acuity (distance vision)</th>
<th>Residents (No.)</th>
<th>Residents (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/6 in both eyes</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>6/6 in better eye</td>
<td>21 (incl. above)</td>
<td></td>
</tr>
<tr>
<td>&lt;6/6 but &gt; 6/12 in better eye</td>
<td>123</td>
<td>64</td>
</tr>
<tr>
<td>&lt;6/12 but &gt; 6/24 in better eye</td>
<td>30</td>
<td>16</td>
</tr>
<tr>
<td>&lt;6/24 but &gt; 6/48 in better eye</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>&lt;6/48 but &gt; 6/60 in better eye</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>&lt; 6/60 in better eye (legally blind)</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

Significantly, 49 people (25%) had vision worse than 6/12 in the better eye, classifying them as having low vision. Eight people (4%) were legally blind.

**Reading vision**

When testing near reading vision (both eyes open) with their current glasses, 50 people (26%) were worse than N8 (ie N10 or worse). N8 equates to 6/12 distance vision, that is, low vision. This finding corresponds very closely to the findings for distance vision from Table 4.

By these measures, 35 people (18%) had moderate reading vision impairment (N10 to N18) and 15 people (8%) had severe reading impairment (N24 or worse).

**Table 5: Reading vision**

<table>
<thead>
<tr>
<th>N4</th>
<th>N5</th>
<th>N6</th>
<th>N8</th>
<th>N10</th>
<th>N12</th>
<th>N14</th>
<th>N18</th>
<th>N24</th>
<th>N36</th>
<th>N37</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>48</td>
<td>45</td>
<td>36</td>
<td>17</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>2</td>
<td>8</td>
<td>5</td>
<td>193</td>
</tr>
</tbody>
</table>
Diagnosed eye disease
In summary 141 (73% of those tested) were diagnosed with at least one of macular degeneration, other retinal pathology, glaucoma, raised IOP, diabetic retinopathy or untreated cataract.

Age-related macular degeneration
Following vision and eye health testing, 119 of 193 residents (61.7%) were diagnosed with some degree of macular degeneration. Of these:

- 85 (44% of all residents or 71% of those with AMD) had early AMD in at least one eye.
- 20 (10% of all residents or 17% of those with AMD) had late stage ‘dry’ AMD (geographic atrophy). 12 of these cases were bilateral.
- 14 (7% of all residents or 12% of those with AMD) had ‘wet’ or neovascular AMD. Four of these cases were bilateral. Five of the 14 residents diagnosed with wet AMD stated that they receive injections.

As stated earlier, it was not possible to take retinal photos or conduct OCT scans in several residents, making a diagnosis of retinal conditions difficult or impossible. As such, the above rates of disease are likely to be an underestimate.

Comparison of vision testing data with information recorded in the clinical notes identified that:

- Of the 119 residents (62%) diagnosed with AMD only 46 of these residents had this noted in the facility’s clinical record. That is, only 39% of people who tested positive for AMD actually had this stated in their clinical record.
- All 14 residents who had a diagnosis of wet AMD by the study ophthalmologist did have a record of macular degeneration in the facility records, although in only six did this record specifically state that the person had wet AMD. The other eight records stated the person had early or dry AMD or it was unspecified.
- Following testing, two of the residents with wet AMD were recommended to have an urgent (within one week) appointment with an ophthalmologist, one within a month, and two were recommended to see an optometrist within a month.

As noted earlier in the discussion about the quality of images it was sometimes not possible to take good quality retinal photos and OCTs or the resulting images were poor making diagnosis impossible. It was identified that:

- A further 16 residents with a diagnosis of AMD recorded in the facility’s notes, were not diagnosed by the study orthoptist or ophthalmologist.
- In 12 of these 16 residents, images were poor or unavailable making diagnosis impossible.
- One of these 16 residents was recorded as having wet AMD, and stated he/she had received injections but this was not diagnosed by the orthoptist or ophthalmologist, as it was not possible to perform retinal photos or OCT scans in this person.
- If it is assumed that the 12 residents in whom adequate quality photos and OCT scans were not taken did indeed have AMD, then a total of 131 residents (68% of residents in study) had some degree of AMD.
It was noted that the vision of residents with AMD was worse than those without the disease. 30% of those with AMD had vision worse than 6/12 in the better eye, compared to only 18% of those without AMD.

**Other retinal conditions**
32 residents had some other retinal condition, including 15 who also had concurrent AMD.

**Glaucoma and elevated IOP**
While 13 residents were given a diagnosis of glaucoma or elevated IOP in the study vision and eye health testing, only six of these were noted in the facility records.

Of significance however, was that 21 additional residents had a clinical record noting a diagnosis of glaucoma which was not detected in the study testing. The low rate of diagnosis in the study testing may be related to a number of factors: Testing was performed as a one-off (standalone) procedure and did not use evidence from the facility's records, the use of IOP-lowering medication or the residents' comments to make a diagnosis. A diagnosis of glaucoma would normally take previous testing results into consideration.

A reliable diagnosis of glaucoma typically requires several visits with multiple tests.

Over half the patients stated to have glaucoma in the clinical record had poor quality or no photos of the optic disc, making the detection of changes to the disc difficult or impossible.

It was considered unreasonable to use the standard Humphrey's visual field test in this patient population, given their age, frailty, immobility and high rate of dementia. Although simple testing of visual field by confrontation (Donder's test) was used, this is an inadequate test on which to base a diagnosis. As the test can be confusing, it may have been inappropriate in this population.

While intraocular pressure was measured, at least nine of the residents with glaucoma (according to the facility records) were using pressure lowering drops, potentially lowering their pressure to the 'normal' range.

**Diabetic eye disease**
Diabetes was identified in the clinical notes as co-morbidity for 43 residents (22%) whilst only two residents had non-proliferative diabetic eye disease noted in the facility's clinical record. Both of these residents were diagnosed with late (dry) AMD but not diabetic retinopathy in the ophthalmologist's report.

Four residents including three with diabetic macular oedema (DME) were identified in the study testing.

**Cataracts and intraocular lenses (IOL)**
On examination, 183 residents (95%) were found to have already had cataract surgery, or had untreated cataracts:

- 127 (66%) had received cataract surgery in both eyes
- 16 had received cataract surgery in one eye only and had an untreated cataract in the other eye
- 40 (21%) had untreated cataracts, 39 in both eyes and one in one eye.
Of the 143 residents who had an intraocular lens (IOL) or lenses detected by the study orthoptist and ophthalmologist it was found that only 94 (66%) had facility records indicating they had received cataract surgery in one or both eyes.

One resident had cataract surgery in their clinical record, but no IOLs were noted on testing. As cataract surgery (with IOL placement) is essentially curative, a lack of recording of IOLs is not necessarily an issue.

Residents’ eyes were examined using a slit lamp or torch to identify the presence of cataract or an intraocular lens (IOL).

**Combined effect of AMD and cataract**

Of the 119 residents diagnosed with AMD in the vision testing phase, 74 had cataract surgery (IOL implants) in both eyes and a further 11 in one eye only.

In particular:

- All of the 11 residents with AMD and an IOL in one eye also had an untreated cataract in the other eye
- 27 of the people with AMD had untreated cataract in both eyes
- In total, 38 people with AMD had an untreated cataract in one or both eyes

Importantly, vision testing identified that 59% of the 27 people with AMD and untreated cataract in both eyes had a visual acuity of less than 6/12 in the better eye. This compares to 25% of the total study population having VA of less than 6/12 in the better eye, and highlights the significant impact of bilateral untreated cataract and AMD.

**Recommended for professional follow-up**

Overall, 28 residents (15%) were recommended to receive further professional follow-up (optometrist or ophthalmologist) outside of the normal, regular check-ups.

**Refraction and prescription glasses**

Following vision and eye health assessment it was recommended that 23 (12%) residents be referred to an optometrist for correction of glasses. The majority of these were because visual acuity or reading improved by a line or more with autorefraction or pinholing, suggesting a change of script may be appropriate.

The exceptions to this were:

- if there was only improvement in their worse eye and therefore there would not have been a noticeable improvement using both eyes
- they already had an upcoming appointment with their optometrist
- they were booked for cataract surgery or were told by their ophthalmologist that they would be booked in for it soon
- if they did not actually wear their current glasses and said they were happy without glasses

**Spectacles – lenses and frames**

Residents frequently knew if they had glasses/spectacles, what type they were and commented on whether they actually wore them (Fig.7).
164 residents (85%) had glasses including four residents who said they did not wear them. There were five types of glasses identified with 39% owning bifocals, 32% with single vision reading only and 12% with separate distance and reading glasses.

Current glasses worn by residents were predominately under two years old and the lenses and frames appeared to be in good condition:

- 63% of residents reported how long they had had their current glasses with over two thirds (69%) reporting that they were between one and two years old (Fig.8). It is not clear how accurate these estimates were.
- The study orthoptist stated that 99% of lenses were in good condition or slightly scratched with 96% of frames in good condition (Fig. 9)
- The overall good situation for glasses is consistent with the relative frequency of optometry visits in these RACFs, and that the primary (current) purpose of their visits relates to checking glasses.
Resident concerns about their visual function

Residents were asked a number of questions about whether their visual function impacts on their perceived quality of life and whether they were concerned about it.

- 70% were not aware of their vision worsening in one or both eyes and 12% didn’t know if there was any deterioration
- 92% thought their eyesight did not interfere with their daily living at all or only occasionally
- 86% didn’t worry about their eyesight at all or only occasionally
- 84% reported adequate lighting in their rooms
- 80% either had no difficulty or occasional difficulty in reading due to their vision
Low vision and visual aids
49 residents were assessed by the study orthoptist as having low vision, defined as visual acuity of less than 6/12 in the better eye. Only five of those responded positively to having had a low vision assessment. These assessments were undertaken in a low vision clinic (1) or Vision Australia (4). One of the Vision Australia clients also saw a second agency.

Utilisation of low vision aids other than spectacles was very low with only 8 residents (16.3% of those with low vision) responding positively. Aids that are being used are regular and hand held electronic magnifiers as well as a table top large screen magnifier and a computer.
Residents with AMD had very low levels of low vision assessment and use of aids. 22 residents with early AMD had low vision, yet only one stated they had had a low vision assessment and were using a low vision aid. Of the two residents diagnosed with wet AMD and low vision, only one had had a low vision assessment and was using a low vision aid.

**Hearing and Hearing Aids**

The questions about hearing and hearing aids were included in the study because it is known that combined hearing and vision loss interferes with communication and can lead to increased depression, anxiety, lethargy, social dissatisfaction and a general reduction in quality of life.

94% of residents tested completed the hearing and hearing aid sections. Findings included:

- 41% feel they have hearing loss with 92% who have loss in both ears seeking professional assessment
- 51% of these are having treatment for the loss or are being followed by a doctor for their hearing or another ear condition
- Hearing aids have been recommended for 36% of residents however just over half (55%) actually wear them
- Checking the hearing aid and supplying the batteries are predominately done by the audiologist and to a lesser extent by the family and carers (Fig.13)
- 53% of residents stated that they change their own hearing aid batteries with some (19%) receiving support from the audiologist
- 16 of 65 people (25%) prescribed hearing aids also have low vision (less than 6/12 in the better eye). This was the same rate of low vision as people who were not prescribed hearing aids.
- Over 8% of people in the study experienced significant dual sensory loss.

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Recommendations from the vision and eye healthcare assessments

The study orthoptist assessed vision and eye healthcare and made recommendations based on findings. These recommendations and images (retinal photographs and OCT images) were forwarded to the study ophthalmologist for review. The ophthalmologist’s recommendations were then grouped and coded noting that duplicate responses were possible. For example, the resident may be recommended for routine ophthalmology follow up but also need to see the optometrist for glasses (Fig. 14).

When reviewing the recommendations across eye disease categories captured, the majority were for routine follow up with the ophthalmologist/optometrist followed by a recommendation to review earlier if visual acuity or vision changes.
An important finding was that 36 residents (19%) were new referrals to the optometrist/ophthalmologist. Two new referrals for wet AMD were urgently referred to the ophthalmologist to be seen in a week with a further one to be seen within one month (Fig. 15).

The ophthalmologist recommended two residents one with early AMD and one with dry AMD in both eyes be referred for low vision assessment.

**Resident responses to questions about eye disease**

While people with severe dementia were excluded from the testing, some participants had varying levels of memory loss, confusion or behavioural challenges that may have interfered with the conduct of some tests or their ability to answer some questions. As such, and as expected, the responses from many residents were of questionable reliability. This reinforces the need for the facility to keep accurate records of residents' health, appointments etc as the resident cannot be depended on for this information.

While the comments of residents should always be respected, it was hypothesised that there would be a poor correlation between residents' perception of their vision versus the reality. It was also hypothesised that there would be a low self-awareness of any eye conditions. If these were true, it would have significant implications on how staff manage residents.

For example, if a resident incorrectly states their vision is good, and this is accepted at face value by staff, it would be reasonable to assume that the person does not need better lighting, large textbooks, magnification etc. However, knowledge of the person's actual vision status would (or should) ensure appropriate remedial measures can be taken.

If a person is unaware or forgets they have a particular eye condition, they are totally dependent on the staff or the facility's recall systems to ensure they have check-ups or tests at the appropriate frequency. While the resident's family may sometimes take responsibility for arranging doctor visits and follow-up, this cannot be assumed. In addition, some residents do not have family to arrange visits, so it is incumbent on the facility to routinely manage a recall system, involving the family where appropriate. Ultimately, these systems should reduce overall workload for the facility staff. When residents have better vision (or better management of
reduced vision) they should be safer, more engaged, less stressed and generally easier to manage.

Before conducting the various eye tests, the study orthoptist asked residents a number of questions regarding their vision, the impact of any vision issues on their quality of life and their knowledge of previous diagnoses of a range of conditions.

It was clear that:

- Most residents had a poor understanding (or recall) of any eye diseases they may have had. For example:
  - Only 23 of 119 patients who tested positive for AMD could recall that they had been told by their doctor that they had macular degeneration
  - In addition, only 5 of the additional 16 residents with AMD noted in the clinical record but who could not be diagnosed in the testing could recall they had been told they had AMD
  - In total, 28 of 135 (21%) with a definite or likely diagnosis of AMD could recall having been told they had the disease.

- Many residents did not appreciate the extent of their vision loss. For example, when tested specifically for near reading vision (both eyes open), 19 of 50 people with corrected reading vision of n10 or worse (requiring a 24 point font size) stated they had no problem reading. It is not clear whether these people were embarrassed to say they had difficulty reading, or simply did not recognise the problem, or some other reason.

In summary, a significant proportion of residents tested do not provide reliable information about their eye health or vision. This is not surprising given the age of the population, and the varying levels of cognitive impairment that may be experienced. It is thus essential that external sources of information are obtained and recorded about residents' general health status, tests needed and vision issues.

Numerous other questions were asked of residents however the results will not be provided in detail here as the responses are of limited reliability.

**Conclusions on accuracy of data sources for eye disease**

It can reasonably be assumed that a comprehensive eye exam by the study orthoptist with validation by the ophthalmologist provided the most complete indication of the prevalence of macular degeneration, cataract surgery, untreated cataract and other retinal disorders, providing good quality retinal photos and OCT scans could be taken.

In contrast, the facilities' records of their residents substantially understated the amount of these diseases. While it is possible that some residents may have acquired these diseases following their admission to the facility, most of these diseases progress slowly and are likely to have been present for many years. For the purpose of estimating an overall prevalence of macular degeneration however, there were 16 cases found in the facilities' records that were not detected in the eye testing stage. 12 of these 16 cases were in residents with unreadable photos/scans or in whom it was not possible to take photos/scans. It could reasonably be assumed that these were indeed true cases.
For glaucoma, which typically relies on multiple tests of IOP, multiple Humphrey's field tests over several visits and good quality photos/OCTs of the optic disc, this single study test was inadequate to provide an accurate estimate of disease prevalence. Nonetheless, the eye testing found seven people with suspected glaucoma or elevated IOP which were not noted in the facilities' records.

Information provided by the residents, regarding their vision and eye health was unreliable and in general, should be viewed with caution. Care and management plans for residents should therefore be based on other sources such as doctor and optometrist records.

Facility audit
All RACFs in the study record their clinical and administrative/quality management information electronically and in hard copy. Different modules in the same software systems or different software systems were used by facilities to capture this information. All included variously named electronic communication and sensory management procedure and assessment screens for vision. RACF quality management systems reflect the Accreditation Standards.

Five RACFs responded that visiting GPs documented both in hard copy and electronically whilst six responded that visiting optometrists recorded their findings in hard copy. Nurses in all but one RACF record electronically. At the time of interview one RACF was preparing to move into a new purpose-built facility at which time nurses would be recording electronically.

Diagnosed eye disease
Responses indicate that six RACFs ‘always’ document diagnosed eye disease with the remaining two only documenting it ‘sometimes’. There are multiple sources of this information and all RACFs sourced it from resident admission documentation i.e. a hospital discharge summary and the Aged Care Client Record (ACCR) submitted through My Aged Care. The assessment of the resident on admission (5 facilities) and the GP current medical history (6 facilities) were both also considered sources and to a lesser extent the family or resident (2 facilities) (Fig. 16).

The ACCR is derived from the ACAT assessment and there may be a time lag of up to 12 months between the assessment and admission to a RACF, so information about eye disease may not be current.
Once identified from entry documentation and assessment, all RACFs recorded a resident’s eye disease in documentation used for daily management of the resident i.e. the Care Plan/Intervention for Care documentation. All but one RACF also recorded in the medical progress notes and the variously titled electronic communication and sensory assessment form which documents vision.

External medical specialists including ophthalmologists
The details of a resident’s external medical specialists are documented in a variety of locations (Fig.21) and details of their ophthalmologist, if applicable, are not ‘always’ documented. It is more likely the response was ‘sometimes’ or ‘rarely’ (Fig.18). The RACF does not always receive feedback from the ophthalmologist after consultation, with only one RACF ‘always’ receiving a letter from the ophthalmologist. One corporate provider provides an external specialist feedback form for use across its facilities. On review of the clinical notes this form was either poorly completed or absent.
The resident’s GP will refer to the ophthalmologist and as such it is normal practice for the GP to receive the feedback, not the RACF. Four of eight RACFs ‘rarely’ receive a report following a resident’s visit to the ophthalmologist (Fig. 19).

In seven facilities, the RACF staff and the resident’s family/carer predominately manage the resident’s ophthalmology appointments. Several barriers to seeing an ophthalmologist were identified. These include transport to and from the ophthalmologist’s rooms (6 facilities), cost (5 facilities) and obtaining family/carer consent (5 facilities). If the family/carer cannot transport the resident to their appointment then several options will be considered, some of which involve additional costs for the resident, for example hiring a carer with a car from a Care Agency. (Fig 20).
Figure 20: Transport options if family is unavailable

![Graph showing transport options](image)

**Optometry Services**

All RACFs in the study have a regular optometry service, being a mix of corporate providers (5 facilities), independent optometrists (2 facilities) and both (1 facility). Facilities have a service contract with their optometric provider, either corporation wide or as an individual facility. Four RACFs initiate the routine visits by the optometrist whilst both the optometric service and the RACF do this in three RACFs. The intention is that residents are routinely seen every six months or annually and visits by the optometrist tend to be staggered across the year so all residents are seen. One corporate optometry service provider requires a list of 14 -15 residents prior to attending. Ad hoc visits are triggered by family concern and on request of the RACF. Six RACFs reported their residents were seen at the nominated frequency. Five RACFs have reminder mechanisms in place for routine optometric visits which are on the request of the RACF (4 facilities) and the optometric service (3 facilities) either jointly or singularly. Residents’ families and carers as well as newly admitted residents can also trigger an optometry visit.

Newly admitted residents’ vision testing is typically managed by adding them to the list for the next routine visit (7 facilities). The family may also organise a visit to the resident’s external optometrist (7 facilities).

The need for a referral to an optometrist or ophthalmologist is also triggered within the RACF by certain events or resident behaviour. For example, all eight RACFs would organise for a referral if there was damage to spectacles, the resident complains about their vision or the family were concerned. Six RACFs would also refer if the resident was knocking into objects or couldn’t see the food on their plate (Fig. 21)
The optometrist provides a hard copy report of their findings and the visit is also ‘sometimes’ recorded in the clinical record by the nursing staff. Six RACFs responded that optometrists do not manage residents’ eye health outside routine visits, however seven RACFs have a process for referral to an ophthalmologist if required (Fig. 22). This process varies and is multifaceted. It is a known process which is not always documented. It can include the RACF informing the GP once an optometrist report has been received (6); the optometrist verbally informs the RACF (6), the GP (1) and/or the family/carer. There is anecdotal evidence that the terminology in the reports is not well understood by the RACF.

Low Vision and Vision Impairment
Six RACFs have policies and procedures to manage residents with low vision and vision impairment. This management is recorded in several locations including the care plan and nursing notes which reflect daily management of the resident, medical notes and the
communication and sensory assessment form. Management of vision is reviewed when the care plan is reviewed, usually every three or four months and/or following an incident and can be dependent on the level of care (Fig. 23).

Significantly, none of the RACFs offered a low vision assessment to residents with low vision.

**Figure 23: Vision impairment and low vision management**

![Graph showing documentation and management review](image)

**Spectacles**
Six RACFs identify residents’ spectacles whilst two facilities either didn’t identify spectacles or didn’t know if they did. Of those who did identify spectacles, different methods and more than one method was used (Fig. 24).

**Figure 24: Identification of spectacles**

![Graph showing spectacles identification](image)

**Adjustments for low vision**
All RACFs made adjustments for residents with low vision in particular offering large print books (8 facilities), audio books (7 facilities), de-cluttering their room (7 facilities) and cleaning glasses regularly (8 facilities) (Fig. 25). Six facilities had low vision aids or technology for residents however when asked if low vision aids were available in the facility, only five answered ‘yes’.
The survey asked a general question about the availability of low vision aids and technology but not specifically which technology was available. Anecdotal evidence suggests low vision technology such as CCTVs and electronic magnifiers may not be readily available.

**Use of the Amsler grid**
The Amsler grid is a simple and useful device to help people detect symptoms of central vision loss, and in particular, to detect sudden changes of vision. It is commonly recommended for people with macular degeneration to pick up changes which may indicate the progression to 'wet' disease, which may benefit from immediate treatment. Only one RACF ‘rarely’ used an Amsler Grid. It was noted that it would be organised if the family requested it.

**Dietary modifications**
There is evidence that certain dietary modifications can help to reduce the risk of progression of macular degeneration. Six RACFs did not adjust the diet of residents with diagnosed AMD although two reported that this could occur ‘rarely’ if the family requested it.

**Figure 25: Adjustments made for low vision**

![Bar chart showing adjustments made for residents with low vision (n=8)](chart)

**Staff training and education**
Responses to the survey questions about education for staff were variable. It was reported that education and training usually revolved around resident care and assessments for care.

Three RACFs reported that they educated their staff but didn’t provide education about vision despite responding partially to some questions. For purposes of analysis of vision education the responses from five RACF were used.

Analysis of five RACFs showed that:

- Vision education was not mandatory and staff competencies were not assessed. They identified the staff category trained and the method used. It was noted that care assistants were predominately enrolled nurses or assistants in nursing and as such were considered nursing staff.
• Face to face training about vision and eye health was undertaken by RACF staff including the registered nurse and external vision care providers i.e. the optometrist (1 facility) and low vision agencies (2). Online training resources were also used. It is unclear whether the RACFs using the Aged Care Channel DVD or on-line modules were currently subscribing to the Aged Care Channel. (Fig.26).

Figure 26: Vision education - method

• Content of vision education: the identification of the residents who had difficulty locating their room, locating objects in their room and seeing small objects is taught in all five facilities whilst identifying the resident no longer reading, watching TV and participating in social activities due to low vision is taught in three RACFs only (Fig. 27).

Figure 27: Vision education – content

• Frequency of training: four RACFs undertook annual refresher training with two of these also providing vision education during initial orientation (Fig. 28)
• Education resources used were those provided by non-government vision agencies (4 facilities), low vision aids (3) and Aged Care Channel and DVDs (2) (Fig.29).

Policies and Procedures
Policy and procedures are driven by the facility’s software which in turn is driven by the Aged Care Quality Standards.

RACF software systems reflect the standards in general and specifically for Standard 2.16 with variously named and designed ‘communication and sensory assessment’ forms requiring completion within a month of the resident’s admission.

Hard copy versions of policies tend to be printed from the electronic system unless using a specialist quality management system such as one provided by the Joanna Briggs Institute.

The same questions were asked for hard copy and electronic policies and procedures except for ‘referral to optometry’. This question was only asked in the hard copy section with one RACF having a hard copy policy.
Five out of eight RACFs had a hard copy policy for the management of spectacles and four had a hard copy policy for the management of residents with low vision.

The following procedures or documentation were recorded in the ‘other’ category as hard copy and electronic policy and procedures:

- online *Communication and Sensory Assessment* form which documents vision assessment completed on entry to the RACF and available in hard copy) (Appendix 6)
- local work instructions
- service contract with external provider

**Figure 30: Policies & Procedures**
8. Summary of results

The average age of residents in RACFs being studied was 86 years with an average two years residence in the facility. 65% of residents were female whilst 35% were male. 42% of residents were 90 years or older.

Forty-one residents (21%) had a DVA entitlement which could possibly provide financial assistance for approved services and technology.

No recorded evidence was found to suggest that vision impairment was a predisposing factor for admission when co-morbidities such as stroke, diabetes and falls and fractures were considered.

This is a population at high risk of falling. There was some evidence that people with low vision may have had a slightly higher falls risk. 53% of people with low vision (BE < 6/12) experienced a fall in the last 12 months, compared to 44% of people who did not have low vision.

The study ophthalmologist's reports of clinical findings showed that the RACF records were not a reliable or consistent source of information about eye diseases with diagnosed eye disease underreported.

Based on the facilities’ clinical records, 151 residents (78% of total) had some form of eye disease requiring ongoing monitoring or treatment. This included people with any AMD, diabetic retinopathy (including diabetic macular edema), other retinal condition, glaucoma, elevated intraocular pressure, or untreated cataract. Cataract treated with IOL replacement surgery was not considered an eye disease as it is essentially cured. 60 residents (31%) had more than one of the above eye diseases.

One hundred and forty-one residents (73% of those tested) were diagnosed with retinal eye disease ie at least one of macular degeneration, other retinal pathology, glaucoma, raised IOP or diabetic retinopathy, and 56 residents had untreated cataracts in one or both eyes.

Forty-nine people (25%) had low vision, defined as visual acuity of worse than 6/12 in the better eye. (This means the other eye may have been even worse than this.)

Eight people (4%) were legally blind (visual acuity worse than 6/60 in the better eye.)

One hundred and nineteen residents (62%) were diagnosed with some degree of macular degeneration. Only 46 of these were noted in the facility's clinical record for the patient.

A further 16 residents had a clinical record of AMD but were not diagnosed by the orthoptist or ophthalmologist. In 12 of these 16 residents, it was not possible to take acceptable retinal photos or OCT scans during the study testing. It is reasonable to assume that at least in these 12 people, a diagnosis of AMD is likely. If these people are included, 131 residents (68%) had a diagnosis of AMD.

Of the 119 residents diagnosed with AMD during the study, 85 had early, 20 had dry (with 12 bilateral cases) and 14 had wet AMD (with four bilateral cases). Five of the residents with wet AMD stated they were receiving injections.
All 14 residents diagnosed with wet AMD by the study ophthalmologist had AMD recorded in clinical records. However, only six resident’s records specifically stated that the resident had ‘wet’ AMD. This is less than half of those with AMD recorded.

Two of the residents with wet AMD were recommended to have an urgent (within one week) appointment with an ophthalmologist.

People with AMD had significantly worse vision on average than people without AMD. 30% of people with AMD had vision worse than 6/12 in the better eye, compared to 18% of those without AMD.

Significantly, more than half (59%) of residents with both bilateral untreated cataract and AMD had low vision (visual acuity less than 6/12 in the better eye) compared to 25% of the study population.

Following a single test, 12 people had a preliminary diagnosis of glaucoma and/or raised intraocular pressure (IOP >21 mmHg), however only six of these residents had a diagnosis in the clinical record. Of note however was that an additional 21 residents had a clinical record of glaucoma that was not detected in the study testing. This discrepancy is likely due to full field testing not being performed and the fact that a glaucoma diagnosis typically requires several tests over multiple visits. Combining the testing and clinical record, it is possible that up to 33 people (17%) had glaucoma or raised intraocular pressure.

Most (74%) residents had received cataract surgery in at least one eye.

Seventeen people had an untreated cataract in one eye only, while 39 had untreated cataract in both eyes. A recommendation for follow-up for possible cataract surgery was only made for four residents.

Diabetes was identified in the clinical notes as a co-morbidity for 43 residents (22%). Only four residents received a diagnosis of diabetic retinopathy (three with non-proliferative and one with proliferative disease). Three of these people also had diabetic macular edema.

Overall 28 residents (15%) were recommended to receive further professional follow up (optometrist or ophthalmologist) outside the normal regular check up.

All facilities in this study utilised a visiting optometry service to provide basic vision care and eye checks. These were either a corporate service or an individual practitioner.

The optometry service was routine and regular which resulted in:

- Most residents over 65 years of age had an eye check within the recommended 12 months.
- Almost two thirds of all residents (64%) had an optometry consultation recorded; a report was identified for 85% of these residents. 87% of those who had an optometry consultation had an identified eye disease.
- Residents typically had spectacle lenses and frames in good condition. 69% of residents reported that their glasses were between one and two years old; 99% of lenses were assessed by the study orthoptist to be in good condition or only slightly scratched and 96% of frames were in good condition.
If optometrists identify eye disease, they will typically report this to the resident's GP. They may also provide a hard copy report to the RACF however it is unclear whether this is routinely communicated verbally to RACF management and whether it is acted upon by the RACF.

The optometry service processes in the RACFs were known but were not documented in records audited. Processes varied by RACF and included processes for initiating a routine visit or for a new resident, reminder mechanisms, triggers for onward referral to an ophthalmologist, reporting requirements and communication of findings.

Eye disease diagnosed pre-admission will most likely be recorded in admission documentation. Undiagnosed eye disease or new eye disease developed after admission may not be known to RACF staff if the resident/family/carer doesn’t complain, the findings of the optometry report are not communicated to staff, ophthalmologists reports are not received or admission documentation is not updated.

Only a quarter of all residents had an ophthalmology consultation recorded and 96% of these had an identified eye disease but a report was available in only 60% of cases.

The major barriers to seeing an ophthalmologist were identified as transport to the ophthalmologist’s rooms, cost and gaining family/carer consent.

There is no standard method of identification of spectacles. Several facilities did not have a formal process while others had more than one method of identifying glasses.

The majority of residents were not overly concerned about their vision and its effect on their daily living. 92% of residents thought their eyesight did not interfere with their daily living at all or only occasionally; 84% reported adequate lighting in their rooms and 80% stated that they either had no difficulty or occasional difficulty in reading due to vision. This indicated that care should be taken when interpreting resident responses as their actual (objective) visual performance did not necessarily match their personal (subjective) perception of vision.

All facilities reported making adjustments for low vision residents and most reported offering low vision aids. It is not known however what low vision technology is available and anecdotal evidence and observation suggest that technology such as CCTVs and electronic magnifiers are not readily available.

Low vision assessments are not currently offered by these RACFs to people with low vision.

Facilities in the study typically do not provide Amsler grids to people for self-testing of changes in vision.

Diet was not adjusted for residents with diagnosed aged-related macular degeneration unless requested by the resident's family.
9. Appendices

Appendix 1 Draft model of care for vision and eye health in residential aged care facilities

Appendix 1

Vision Health in RACFs - Proposed Model of Care

Resident documentation
Eye health medical history (sources include GP, optometrist, pharmacist, ophthalmologist, Hospital discharge form, Resident/family comments)
On entry to facility, record information on:
• Visual acuity (distance and reading)
• Eye diseases or issues
• Management/treatment of eye disease, low vision
• Spectacles – photo record
• Frequency of professional follow-up needed
• Contact details for optometrist, ophthalmologist
• If macular degeneration present, confirm type (wet/dry). If wet, note if injections are needed.
• If history of falls, confirm if poor vision was involved
• If diabetes, confirm retinopathy status
• Low vision assessment for people with visual acuity less than 6/12.
• If information not available from last 12 months, arrange comprehensive eye test.

Care notes
Include information on:
• Resident vision issues and care needs
• Photo of glasses
• Check and clean glasses
• Weekly use of Amsler grid if AMD
• Timing of next eye test

Event management
• Increase in falls
• Not interested in TV, reading, games
• Difficulty with meals, taking pills
• Resident or family request
• Change in Amsler grid
• Low vision assessment for people with visual acuity less than 6/12.

Eye test
At least 12 monthly, more if requested

Report
Photo if new glasses

Trigger
Update
Update
Specialist visit if needed
## Appendix 2 Expert Reference group

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Organisation</th>
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<tbody>
<tr>
<td>Julie Heraghty (Chair)</td>
<td>Chief Executive</td>
<td>Macular Disease Foundation Australia (MDFA)</td>
</tr>
<tr>
<td>A/Prof Gerald Liew</td>
<td>Ophthalmologist</td>
<td>Chatswood</td>
</tr>
<tr>
<td>Peter Hewitt</td>
<td>Optometrist</td>
<td>Mosman</td>
</tr>
<tr>
<td>Dr Meri Vukicevic</td>
<td>Orthoptist</td>
<td>Discipline of Orthoptics, La Trobe University</td>
</tr>
<tr>
<td>Dr Mary-Anne (Anne) Sutherland</td>
<td>General Practitioner</td>
<td>Marrickville</td>
</tr>
<tr>
<td>Tim Connell</td>
<td>Low Vision Equipment supplier</td>
<td>Quantum - Thornleigh</td>
</tr>
<tr>
<td>Rob Cummins</td>
<td>Director Research &amp; Policy</td>
<td>MDFA</td>
</tr>
<tr>
<td>Jan Steen</td>
<td>Project Officer</td>
<td>MDFA</td>
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# Vision & Eye Healthcare in Residential Aged Care Facilities Study

## Vision & Eye Healthcare Assessment Sheet

<table>
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<tr>
<th>Chief Investigators</th>
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<td>Julie Heraghty</td>
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<tr>
<td>Rob Cummins</td>
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<td>Dr Gerald Liew</td>
<td>Ophthalmologist</td>
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<tr>
<td>Jan Steen</td>
<td>Senior Project Officer</td>
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<tr>
<td>Larissa Andersen</td>
<td>Research Orthoptist</td>
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| Equipment supplied           | Optemed                           |

VERSION: Final
Date: 20 July 2016
SECTION 1: Completed by Project Officer from Clinical Records

Identity

1-1 ID number

1-2 Residential Aged Care Facility Name

1-3 Residential Aged Care Facility ID

1-4 Surname

1-5 First name (s)

1-6 Sex: □ Female  □ Male

1-7 Date of birth ……/…../……….. (dd/mm/yyyy)

1-8 Date of Admission……/……/…………(dd/mm/yyyy)

1-9 Does the resident have a Department of Veterans Affairs entitlement? □ Y  □ N

Optometrist

1-9.1 Has an Optometrist seen the resident for their eyes, for glasses or any eye treatment?
   □ Y  □ Not recorded  (go to 1-10.1)

1-9.2 When did the Optometrist last see the resident? (dd/mm/yyyy)……/……/…….. □ Not recorded

1-9.3 Is there a report of findings? □ Y  □ N  (If no, go to 1-10.1)

1-9.4 If yes, what tests are recorded (can have more than one test):

   - Lens Analyzer for glasses……………… □ 1
   - Autorefraction .......................... □ 2
   - Best corrected visual acuity – near…… □ 3
   - Best corrected visual acuity – distance…. □ 4
   - Retinal exam…… □ 5
   - Intraocular pressure ........................ □ 6
   - Retinal photography ........................ □ 7
   - Optical Coherence Tomography ........ □ 8
   - Lens examination □ 9

1-10.1 Has an ophthalmologist seen the resident for their eyes?
SECTION 1: Completed by Project Officer from Clinical Records

Yes [ ] 1  Not recorded [ ] 9 (go to 1-11)

1-10.2 When did the Ophthalmologist last see the resident? (dd/mm/yyyy)…../…../………

Not recorded [ ] 9

1-10.3 Is there a report from the Ophthalmologist in the record? [ ] Y 1 [ ] N 2

1-11 Does the resident have diagnosed eye disease?

Y [ ] 1  Not recorded [ ] 9 (go to 2)

If yes, what (tick appropriate box - can have more than one eye disease)

1-11.1 Macular degeneration - early [ ] 1
1-11.2 Macular degeneration - dry [ ] 2
1-11.3 Macular degeneration – wet [ ] 3
1-11.4 Macular degeneration – unspecified [ ] 4
1-11.5 Raised intraocular pressure [ ] 5
1-11.6 Glaucoma [ ] 6
1-11.7 Diabetic retinopathy – non-proliferative [ ] 7
1-11.8 Diabetic retinopathy - proliferative [ ] 8
1-11.9 Diabetic retinopathy – diabetic macular oedema [ ] 9
1-11.10 Cataract - left [ ] 10
1-11.11 Cataract - right [ ] 11
1-11.12 Cataract surgery - left [ ] 12
1-11.13 Cataract surgery - right [ ] 13
1-11.14 Other [ ] 14

Please specify (which eye and condition)

……………………………………………………………………………………………………
SECTION 1: Completed by Project Officer from Clinical Records

Medications – all residents

1-12 Medication List

Please photocopy the medication chart and attach securely

Review medication chart for the following:

☐ 1 Glaucoma drops
☐ 2 Ocular lubricants
☐ 3 Other eye drops
☐ 4 Hypertension meds
☐ 5 Cholesterol meds
☐ 6 Diabetic meds
☐ 7 Insulin
☐ 8 Plaquetin / Chloroquine
☐ 9 Steroids e.g. Prednisolone
☐ 10 Thyroid meds
☐ 11 Warfarin
☐ 12 Macuvision / Lutein-vision
☐ 13 Antidepressants
☐ 14 Parkinsons meds
☐ 15 Dementia meds
☐ 16 Antipsychotics
☐ 17 Other
SECTION 2: Completed by Research Orthoptist

Medical and Surgical History

Medical Conditions

Does the clinical record note that the resident has any of the following conditions…….

2-1 Stroke/ TIAS

If yes,
2-1.1 When was it diagnosed? 

2-1.2 Did it have an effect on vision? 

2-2 Diabetes

If yes,
2-2.1 When was it first diagnosed? 

2-3 Dementia

If yes,
2-3.1 When was it first diagnosed? 

2-4 Hypertension?

If yes,
2-4.1 When was it first diagnosed? 

Falls and Fractures

Does the clinical record note any falls or fractures as a result of a fall?

3-1 Has the resident fallen in the last 12 months? 

3-2 Does the resident have a history of recurrent falls? 

3-3 If yes, did they occur (tick all boxes which apply)

3-4 Have the falls caused a fracture?
Identity
4-1 ID number
4-2 Residential Aged Care Facility Name
4-3 Residential Aged Care Facility ID
4-4 Surname
4-5 First name (s)
4-6 Sex: female 1 Male 2
4-7 Date of birth
4-8 Exam Date
4-9 Start Time

Mobility
Thank you for attending the Eye Study. Before we commence the eye exam, I would like you to tell me how you got to the appointment today?
5-1 How did you get to the study today? (Tick most appropriate answer)

Walked unaided 1
Walked with stick 2
Walked with frame 3
Wheelchair…….. 4
Other………. 5

Tests done
SECTION 2: Completed by Research Orthoptist

6-1  OPTICAL COHERENCE TOMOGRAPHY (OCT)

<table>
<thead>
<tr>
<th></th>
<th>Good</th>
<th>Poor</th>
<th>Not done</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>RE Mac</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>RE Disc</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LE Mac</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LE Disc</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

6-2  RETINAL PHOTOGRAPHY

<table>
<thead>
<tr>
<th></th>
<th>Good</th>
<th>Poor</th>
<th>Not done</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>RE Mac</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>RE Disc</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LE Mac</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LE Disc</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

6-3  IOP

6-3.1  Time taken..........................(12 hour clock)

6-3.2  Right eye............................. (mm Hg – 2 digits and 1 decimal place)

6-3.3  Left eye............................... (mm Hg – 2 digits and 1 decimal place)

6-3.4  Right eye was it...                Left eye - was it...
       reliable ..................          reliable ..................  1
       unreliable .................  2
       not done ....................  3
SECTION 2: Completed by Research Orthoptist

Now I would like to collect information about your vision and glasses and then test your eyes. The information you provide is strictly confidential. If you have any queries or don’t understand any of the questions please ask.

Visual Function and change in visual function

7-1 How long ago was your last eye test? ……………………(months) □ DK 88 (go to 7-3)

7-2 If known, who tested your eyes? Optometrist □ 1 Ophthalmologist □ 2 Other □ 3 Never had one □ 3 □ DK8

Use of Glasses

7-3 Do you wear glasses of any kind? □ Y 1 □ N 2 (go to 7-6) □ Owns doesn’t wear 3 □ DK 8 (go to 7-6)

7-4 If yes, are they:
- single vision distance glasses only........ 1 □ DK □ 8
- single vision reading glasses only........ 2
- separate reading and distance glasses..... 3
- bifocals............................................... 4
- multi-focals............................................ 5

7-5 How long have you had your current glasses? Glasses are..............years old (if less than 1 year ago use 01 years) □ DK 8

7-6 How much difficulty do you have reading (books, newspapers, labels etc) with or without glasses?
- No difficulty □ 1 Occasional difficulty □ 2 moderate □ 3 severe □ 4
cannot read due to eyesight □ 5 does not read for other reasons □ 6 □ DK 8

7-7 If you cannot read due to eyesight, when were you last able to do this?.......... years ago (if less than 1 year ago use 01 years) □ DK 8

7-8 Do you have adequate lighting in your room? □ Y 1 □ N 2 □ DK 8

7-9 How much do you feel your eyesight interferes with daily tasks? e.g. Getting around, making a cup of tea, hobbies.
- Not at all □ 1 occasionally □ 2 some of the time □ 3
- most of the time □ 4 all of the time □ 5 □ DK 8

7-10 How much do you worry about your eyesight? Not at all □ 1 occasionally □ 2 some of the time □ 3 most of the time □ 4 all of the time □ 5 □ DK 8

7-11 Non-functioning eye/prosthesis?

RE □ 1 Y □ 2 N
LE □ 1 Y □ 2 N
BE □ 1 Y □ 2 N
# SECTION 2: Completed by Research Orthoptist

**Eye Symptoms**

8-1  Are you aware of a deterioration of vision in **one or both** eyes?

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, R eye only</td>
<td>1</td>
<td>(go to 8-2)</td>
</tr>
<tr>
<td>Yes, L eye only</td>
<td>2</td>
<td>(go to 8-3)</td>
</tr>
<tr>
<td>Yes, both eyes</td>
<td>3</td>
<td>(go to 8-2 &amp; 8-3)</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>(go to 8-4)</td>
</tr>
<tr>
<td>DK</td>
<td>8</td>
<td>(go to 8-4)</td>
</tr>
</tbody>
</table>

8-2  When did your right eye worsen? ............mths ago

8-3  When did your left eye worsen? ............mths ago

8-4  For the past 3 months or longer, have you had dry eyes? (foreign body sensation with itching and burning, sandy feeling, not related to allergy)

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>DK</td>
<td>8</td>
</tr>
</tbody>
</table>

8-5  **If** yes, which eye was affected?

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right</td>
<td>1</td>
</tr>
<tr>
<td>Left</td>
<td>2</td>
</tr>
<tr>
<td>Both</td>
<td>3</td>
</tr>
<tr>
<td>DK</td>
<td>8</td>
</tr>
</tbody>
</table>
SECTION 2: Completed by Research Orthoptist

Eye Disease

I would now like to ask you some questions regarding your eye health.

Cataract

9-1 Have you ever been told by a doctor that you had a cataract in one or both eyes?
   □ Y 1 □ N 2 (go to 9-3) □ DK 8 (go to 9-3)

9-2 If yes, in which eye?  Right eye □ 1  left eye □ 2  both eyes □ 3

<table>
<thead>
<tr>
<th>Cataract</th>
<th>Right Eye</th>
<th>Left Eye</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-2.1 In what year were you first told? (record year as yyyy)</td>
<td>............ □ DK 8</td>
<td>............ □ DK 8</td>
</tr>
<tr>
<td>9-2.2 Have you had an operation for cataract? (if yes, tick yes box and go to 9-3)</td>
<td>Yes □ 1  No □ 2 □ DK 8</td>
<td>Yes □ 1  No □ 2 □ DK 8</td>
</tr>
<tr>
<td>9-2.3 If no, are you on a public hospital waiting list</td>
<td>Yes □ 1  No □ 2 □ DK 8</td>
<td>Yes □ 1  No □ 2 □ DK 8</td>
</tr>
<tr>
<td>9-2.4 If yes, how long have you been waiting?</td>
<td>............months □ DK 8</td>
<td>............months □ DK 8</td>
</tr>
</tbody>
</table>

Macular Degeneration

9-3 Have you ever been told by a doctor that you have macular degeneration?
   □ Y 1 □ N 2 (go to 9-4) □ DK 8 (go to 9-4)

9-3.1 If yes, in which eye?  Right eye only □ 1  Left eye only □ 2  Both eyes □ 3

<table>
<thead>
<tr>
<th>Macular degeneration</th>
<th>Right Eye</th>
<th>Left Eye</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-3.2 In what year were you first told? (yyyy)</td>
<td>............ □ DK 8</td>
<td>............ □ DK 8</td>
</tr>
<tr>
<td>9-3.3 Have you had injections into your eye/s for macular degeneration?</td>
<td>Yes □ 1  No □ 2 □ DK 8</td>
<td>Yes □ 1  No □ 2 □ DK 8</td>
</tr>
<tr>
<td>9-3.4 Do you use the Amsler Grid?</td>
<td>□ Y 1 □ N 2 □ DK 8</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 2: Completed by Research Orthoptist

Glaucoma
9-4 Have you ever been told by a doctor that you have glaucoma in one or both eyes? 
☐ Y 1 ☐ N 2 (go to 9-5) ☐ DK 8 (go to 9-5)

9-4.1 If yes, in what year were you first told?..........................(year)

9-4.2 Have you used eyedrops or other medications for glaucoma? 
☐ Y 1 ☐ N 2 ☐ DK 8

9-4.3 Have you had Laser treatment for glaucoma? ☐ Y 1 ☐ N 2 ☐ DK 8

Diabetes
9-5 Have you ever been told by a doctor that you have eye disease or eye damage related to diabetes (diabetic retinopathy)? 
☐ Y 1 ☐ N 2 (go to 9-6) ☐ DK 8 (go to 9-6)

9-5.1 When were you first told?.............................yrs ago ☐ DK 8

Eye trauma
9-6 Have you had any serious eye injuries requiring doctor's care? 
☐ Y 1 ☐ N 2 (go to 9-7) ☐ DK 8 (go to 9-7)

9-6.1 If yes, which eye was affected? 
☐ Right 1 ☐ Left 2 ☐ Both 3 ☐ DK 8

Other Eye Conditions
9-7 Have you ever been told that you have any other eye problem? e.g. retinal detachment, vessel blockage or bleeding? 
☐ Y 1 ☐ N 2 (go to 9-8) ☐ DK 8 (go to 9-8)

9-7.1 If yes, specify Which eye? RE ☐ 1 LE ☐ 2 BE ☐ 3

9-7.2 Condition: ............................................

9-8 Any eye surgery I haven’t asked you about? ☐ Y 1 ☐ N 2 ☐ DK 8

9-8.1 If yes, RE ☐ 1 LE ☐ 2 BE ☐ 3

9-8.2 Condition (please specify): ............................................
SECTION 2: Completed by Research Orthoptist

Vertometry

10-1 Did you bring your glasses with you? □ Y 1 □ N 2 (if no, go to 11)

Current glasses (Refer to Q 7-4 for type of glasses):

RIGHT
10-2 sph..........................
10-3 cyl..........................
10-4 axis.........................
10-5 reading add..............
10-6 sph. equiv..................

LEFT
sph..........................
cyl..........................
axis.........................
reading add..............
sph. equiv..................

separate readers, if worn (code 2 or 3 at Q 7.4):

RIGHT
10-7 sph.........................
10-8 cyl.........................
10-9 axis.........................

LEFT
sph.........................
cyl.........................
axis.........................

What is the condition of the spectacles?

10-10 Spectacle lenses?

Good □ 1
Slightly scratched □ 2
Very scratched □ 3
Failed coating □ 4

10-11 Spectacle frames?

Good condition □ 1
Poorly fitting □ 2
Uncomfortable to wear □ 3
Broken arm □ 4
Broken elsewhere □ 5
### SECTION 2: Completed by Research Orthoptist

**Visual Acuity, Contrast sensitivity and AutoRefraction**

*I am now going to test your vision with your glasses, if you wear them.*

**Logmar visual acuity score**

11-1 At what distance was chart read? .............................................(mtrs)

11-2 **Tested wearing current Distance Glasses?**  Yes [ ] 1  No [ ] 2

<table>
<thead>
<tr>
<th>Right eye</th>
<th>Left eye</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logmar VA</td>
<td>Logmar VA</td>
</tr>
</tbody>
</table>

11-4 Pinhole

<table>
<thead>
<tr>
<th>Right eye</th>
<th>Left eye</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pinhole</td>
<td>Pinhole</td>
</tr>
</tbody>
</table>

If vision < 6/120 (refer to VA protocol for code)

11-5 Right [ ]  Left [ ]

**Logmar VA E chart (replaces 11-3 if unable to read chart or speak English)**

11-6 R ................ L ...................... test not done [ ]

11-7 **If one eye weaker (2 line difference) ask:**

- Has your Right/Left eye always been weaker?
  - right eye -yes.......... [ ] 1  DK [ ] 8
  - left eye -yes.......... [ ] 2  N/A (no 2 line difference) [ ] 4
  - no......................... [ ] 3

11-8 **Tested wearing current Reading glasses?**  Yes [ ] 1  No [ ] 2

**Near reading chart** (with current readers if has a pair, or without if doesn’t have readers)

11-9 BEO .......................

11-10 Did mental disability or dementia prevent measurement of VA?

[ ] Y 1  [ ] N 2  [ ] DK 8
SECTION 2: Completed by Research Orthoptist

Contrast Sensitivity
11-11 BE......... dB ☐ test not completed

VISUAL ACUITY WITH AUTOREFRACTION
11-12 Logmar VA Right .......... Logmar VA Left ..........

Near reading chart (add age adjusted plus lens to trial frames)
11-13 BEO........................

Autorefraction (only complete if test is done)

<table>
<thead>
<tr>
<th>RIGHT</th>
<th>LEFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-14 sph..............</td>
<td>sph...................</td>
</tr>
<tr>
<td>11-15 cyl................</td>
<td>cyl....................</td>
</tr>
<tr>
<td>11-16 axis................</td>
<td>axis...................</td>
</tr>
<tr>
<td>11-17 reading add........</td>
<td>reading add...........</td>
</tr>
<tr>
<td>11-18 sph.equiv.........</td>
<td>sph.equiv............</td>
</tr>
</tbody>
</table>

11-19 test not done ☐

Confrontation Field
11-20 RE ☐ Y 1 performed LE ☐ Y 1 performed
☐ N 2 not performed ☐ N 2 not performed

11-21 If performed tick all boxes which apply
☐ 1 R upper temporal quadrant defect ☐ 1 L upper temporal quadrant defect
☐ 2 R lower temporal quadrant defect ☐ 2 L lower temporal quadrant defect
☐ 3 R upper medial quadrant defect ☐ 3 L upper medial quadrant defect
☐ 4 R lower medial quadrant defect ☐ 4 L lower medial quadrant defect
☐ 5 R central defect ☐ 5 L central defect
☐ 6 No defect ☐ 6 No defect
SECTION 2: Completed by Research Orthoptist

Slit lamp examination

Anterior Segment Abnormalities

12-1  Any significant findings on slit lamp examination?

☐ Y 1  ☐ Not Done 3 (go to 13)

☐ N 2 (go to 12-2)  ☐ Torch examination 4

12-1.1 If yes, record finding (e.g., cataract, pseudophakic, corneal opacity, pterygium, lid lesion etc)

........................................................................................................................................................................
........................................................................................................................................................................

12-2  Is the anterior chamber of the eye judged open or shallow (Code 1, 2 or 4 in 12-1)?

Right Eye  Left Eye

☐ Open 1  ☐ Shallow 2  ☐ DK 8  ☐ Open 1  ☐ Shallow 2  ☐ DK 8
SECTION 2: Completed by Research Orthoptist

Hearing (Omit part 13 and 14 if resident is tired)

13-1 Do you feel you have hearing loss or are hard of hearing?
   ✔ Y 1  ☐ N 2 (go to 14.1)  ☐ DK 8 (go to 14.1)

13-2 If Yes, does it affect your: right ear alone ☐ 1  left ear alone ☐ 2
   ☐ Both ears 3  ☐ DK 8 8

13-3 Has a professional assessed your hearing loss?
   ✔ Y 1  ☐ N 2 (if no go to 13-5)  ☐ DK 8 (go to 13-5)

13-4 If yes, in which year…………….. (yyyy) ☐  DK 8

13-5 Are you currently being treated or followed by a doctor for any hearing or ear condition?
   ✔ Y 1  ☐ N 2  ☐ DK 8

Hearing Aids

14-1 Has a hearing aid/aids been recommended for you?
   ✔ Y 1  ☐ N 2 (go to 15-1)  ☐ DK 8 (go to 15-1)

14-2 If yes, do you wear the hearing aid/aids recommended for you?  ✔ Y 1  ☐ N 2 (go to 14-3)

If yes. [Can tick multiple reasons]

14-2.1 Who checks it?
   Resident  ☐ 1  ☐ DK 8
   Aged care facility staff  ☐ 2
   Family member/carer  ☐ 3
   Audiologist  ☐ 4
   Other  ☐ 5

14-2.2 Who supplies the batteries?
   Aged care facility staff  ☐ 1  ☐ DK 8
   Family member/carer  ☐ 2
   Audiologist  ☐ 3
   Other  ☐ 4

14-2.3 Who changes the batteries?
   Resident  ☐ 1  ☐ DK 8
   Aged care facility staff  ☐ 2
   Family member/carer  ☐ 3
   Audiologist  ☐ 4
   Other  ☐ 5

14-3 If you have a hearing aid/aids but don’t wear them, why not? [Can tick multiple reasons]
   doesn’t help me to hear  ☐ 1
   too uncomfortable  ☐ 2
   hearing aid whistles  ☐ 3
   unable to put it on  ☐ 4
   batteries are too expensive  ☐ 5
   not working  ☐ 6
   don’t like the appearance  ☐ 7
   not sure  ☐ 8
   other reason  ☐ 11
Low Vision Aids

Is there a visual disability e.g. FV loss, or reduced VA (<6/12) in both eyes (Codes 8-28 refer to question 11-3)

☐ Y 1 ☐ N 2

If yes ask:

15-1 Have you had an assessment for low vision aids?

☐ Y 1 ☐ N 2 (go to 15-3) ☐ DK 8 (go to 15-3)

15-2 If yes, who performed the assessment?

Low vision clinic ☐ 1 Vision Australia ☐ 2 Guide Dogs ☐ 3 Other agency ☐ 4 DK ☐ 8

15-3 Apart from glasses, are you currently using any aids or technology to assist you with your vision?

☐ Y 1 ☐ N 2 ☐ DK 8

15-4 If yes, which aids or technology do you use? *Tick all that apply*

Special lighting ☐ 1
Regular magnifier ☐ 2
Electronic magnifier (hand held) ☐ 3
Big screen tabletop magnifier ☐ 4
Tablet Computer (e.g. iPad) ☐ 5
Computer (e.g. laptop or tabletop) ☐ 6
Reading machine (i.e. text to voice) ☐ 7
None of the above ☐ 8
**Recommendations from findings**

**Glasses recommendation**
16-1 Refer to an optometrist for correction to glasses [ ] Y 1 [ ] N 2 [ ] 9 N/A

**Recommendation for professional management (Tick one box only)**

16-2 Urgent referral one day [ ] 1

Refer to optometrist within one week [ ] 2

Refer to optometrist within one month [ ] 3

Refer to optometrist within six months [ ] 4

Refer to ophthalmologist within one week [ ] 5

Refer to ophthalmologist within one month [ ] 6

Refer to ophthalmologist within three months [ ] 7

Refer to ophthalmologist within six months [ ] 8

No referral required [ ] 9

**NOTES**
## VISION & EYE HEALTHCARE STUDY IN RESIDENTIAL AGED CARE FACILITIES (RACF)

### STAFF INTERVIEW

<table>
<thead>
<tr>
<th><strong>RACF Name:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(ID)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>RACF Interviewee:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name and Title</td>
<td></td>
</tr>
</tbody>
</table>

| **RACF No. Residents (including DSU):** |  |

| **RACF No. Unfunded/supported residents:** |  |

| **Accreditation date:** |  |

| **Administration Software – name & version** |  |

| **Interview date:** |  |

| **Interviewer:** | Jan Steen, Senior Project Officer MDFA |

VERSION: Final  
DATE: 19 October 2016
1. How does the RACF manage its records?  
   - Electronically □ 1
   - Hard copy □ 2
   - Both □ 3

2. Does the RACF identify & document the diagnosed eye disease of its residents?  
   - Always □ 1
   - Sometimes □ 2
   - Rarely □ 3
   - Never □ N 4

2.1 If yes, from where is the information sourced? (tick all relevant boxes)
   - Hospital discharge summary □ 1
   - Admission documentation (ACCR) □ 2
   - Admission Assessment □ 3
   - GP current medical history (external GP) □ 4
   - Other (please specify) □ 5

2.2 If yes, where is it documented? (tick all relevant boxes)
   - Intervention for Care/Care Plan □ 1
   - Electronic vision assessment form on admission □ 2
   - Nursing progress notes □ 3
   - Medical Admission form (completed by GP) □ 4
   - Medical progress notes □ 5
   - Other (please specify) □ 6

2.3 If yes, when (tick all relevant boxes)........ on entry to RACF
   - Within first month □ 1
   - Healthcare provider visit □ 2
   - When a problem arises □ 3
3.1 How are GP consults recorded?
- Electronically 
  - 1
- Hard copy 
  - 2
- Both 
  - 3

3.2 How are nursing notes recorded?
- Electronically 
  - 1
- Hard copy 
  - 2
- Both 
  - 3

3.3 How are RACF clinical records updated by visiting optometrists?
- Electronically 
  - 1
- Hard copy report 
  - 2
- Both 
  - 3

3.3.1 Do RACF nursing staff/ care assistants note the optometry visit in clinical records?
- Always 
  - 1
- Sometimes 
  - 2
- Rarely 
  - 3

3.4 Are details of a resident’s external medical specialists documented?
- Always 
  - 1
- Sometimes 
  - 2
- Rarely 
  - 3

3.4.1 If yes where?
- Admission documentation (ACCR) 
  - 1
- Admission Assessment 
  - 2
- Intervention for Care/Care Plan 
  - 3
- Vision assessment form on admission 
  - 4
- Nursing progress notes 
  - 5
3.4.2 Does this include details of the resident’s ophthalmologist?

- 1 Always
- 2 Sometimes
- 3 Rarely

N 4

3.4.3 Does the ophthalmologist provide a report to the RACF following a resident’s consultation?

- 1 Always
- 2 Sometimes
- 3 Rarely

N 4

3.4.4 If yes, is this

- a letter from the ophthalmologist? 1
- a form provided by the RACF for the ophthalmologist to complete? 2

Other (please specify)? 3


4 Are there barriers to visiting an ophthalmologist

- Y 1
- N 2
- DK 8

4.1 If yes, are these barriers due to (tick all relevant boxes)..........

- Family/carer consent 1
- Obtaining a referral 2
- Making an appointment 3
- Transport to and from the ophthalmologist visit 4
- Cost 5

Other (please specify) 6
Who manages ophthalmology appointments? (tick all relevant boxes)

- RACF staff [ ]
- Family/Carer [ ]
- GP [ ]
- Other (please specify) [ ]

5.1 If neither the resident nor the family/carer can transport the resident to an ophthalmology appointment, then who does (tick all relevant boxes)?

- RACF transport [ ]
- Volunteers/Community transport [ ]
- Care Agency with vehicle and carer [ ]
- Ambulance organized by RACF [ ]
- Taxi [ ]
- Other (please specify) [ ]

6 Does an optometrist attend the RACF on a regular basis? [ ]

6.1 If yes, who initiates the optometry visit?

- On request of RACF [ ]
- On request of the optometry service [ ]
- Both [ ]

6.2 If yes what is the frequency? (tick all relevant boxes)

- Six monthly [ ]
- Annually [ ]
- Ad hoc - on request of RACF [ ]
- Ad hoc - on request of the optometrist [ ]
- Ad hoc – family concern [ ]
- Staggered across the year so all available residents can be seen [ ]
- Other (please specify) [ ]
6.3 How is the newly admitted resident’s vision testing managed? (tick all relevant boxes)

- Added to list for next routine visit by optometrist
- RACF notifies optometrist which triggers an ad hoc visit
- Family organizes to visit own external optometrist?
- Other (please specify)

6.4 Is every resident with consent provided seen at the nominated frequency? Y 1 N 2 DK 8

6.4.1 If no, what would prevent a consenting resident from being seen on this regular basis?

- RACF considers it no longer appropriate
- Unwell
- On leave from RACF
- Other (please specify)

6.5 Is the optometric service a corporate provider? 1

- an independent practice? 2
- Both? 3

6.6 Is there a reminder mechanism for future visits by the optometrist? Y 1 N 2 DK 8

6.6.1 If yes, what is it (tick all relevant boxes)

- On request of RACF
- On request of optometric service
- RACF notifies optometrist when a new resident is admitted
- Residents family/carer initiate
- Other (please specify)

6.7 Does the RACF optometric service monitor/manage any of your residents with diagnosed eye disease (e.g. for diabetic retinopathy, glaucoma) more frequently than for routine vision testing? Y 1 N 2 DK 8
If the optometrist identifies a reason for referral to an ophthalmologist is there a process to ensure this occurs?  

6.8.1 If yes what is it (tick all relevant boxes)?  

- Optometrist refers directly to the ophthalmologist [ ]
- On receipt of optometry report the RACF informs the GP verbally about the need for a referral [ ]
- Optometrist informs the RACF verbally [ ]
- Optometrist informs the GP verbally about the need for a referral [ ]
- Optometrist informs the Family/carer [ ]
- Other (please specify) [ ]

Does the RACF have any policies or procedures for managing the resident with vision impairment (VI) or low vision?  

7 Where is the management of VI and low vision documented for each resident?  

- Intervention for care/Care plan [ ]
- Nursing notes [ ]
- Other (please specify) [ ]

7.2 How often is this management reviewed? (tick all relevant boxes)  

- Three monthly [ ]
- Six monthly [ ]
- Annually [ ]
- Following an incident related to vision impairment [ ]
- Depends on level of care [ ]
- Other (please specify) [ ]

Are spectacles identified by individual resident?  

8
8.1 If yes, how are spectacles identified (tick all relevant boxes)?

- Labelled with resident’s name [ ]
- Room number [ ]
- Photograph [ ]
- Colour code [ ]
- Other (please specify) [ ]

9 Is the diet of residents with diagnosed macular degeneration adjusted to include recommended eye health foods e.g. dark leafy greens, oily fish, nuts

- Always [ ]
- Sometimes [ ]
- Rarely [ ]

9.1 Are residents encouraged/supervised to check an Amsler Grid daily (if have AMD) or weekly?

- Always [ ]
- Sometimes [ ]
- Rarely [ ]

10 What adjustments are made for residents with VI/low vision?

- Reducing glare [ ]
- Colour contrast [ ]
- Task lighting [ ]
- Low vision aids or technology [ ]
- Large print books [ ]
- Audio books [ ]
- Cleaning glasses regularly [ ]
- Decluttering the room [ ]
- None [ ]
- Other (please specify) [ ]

10.1 Are residents with VI and low vision offered a low vision assessment?

- Yes [ ]
- No [ ]
- Don’t know [ ]
10.2 Are there low vision aids (e.g. CCTV, electronic magnifier, talking books) available in the RACF?  
Y 1  N 2  DK 8

11 What will trigger the need for referral to the optometrist or an ophthalmologist by the RACF (tick all relevant boxes)?

- Damage to spectacles 1
- Fall 2
- Knocking into objects 3
- Decreased mobility 4
- Not seeing food on the plate 5
- Resident complains about a change in vision 6
- Increase in ADL dependency 7
- Not partaking of social & recreational activities 8
- Family/carer concern 9
- Optometrist’s report after vision testing 10
- Other (please specify) 11

12 Does the RACF communicate concerns about a resident’s eye health to their family/carer?  
Y 1  N 2  DK 8

13 Do the staff listed below undertake/receive education/training about the management of residents with vision VI/low vision (tick all relevant boxes)?

- Nursing staff 1
- Care assistants 2
- Activities staff 3

13.1 How is education provided (tick all relevant boxes)?

- Hard copy training manual 1
- In-service from low vision agency/ Vision NGO 2
- Training by RACF staff member 3
13.2 Is VI/low vision education/training mandatory?  
- Y 1  
- N 2  
- DK 8

13.3 What does education/training include (tick all relevant boxes)?

- Overview of common eye diseases of aging and how they affect vision?  
- Identification of the resident  
  - who has difficulty locating their room  
  - who has difficulty locating objects in their room  
  - who has difficulty seeing small objects  
  - who is no longer reading, watching TV, participating in social activities?  
- Knowledge of interventions to manage glare, colour contrast, care of glasses, task lighting  
- Knowledge of available low vision aids  
- Other (please specify)  

13.4 If yes, what is the frequency of this training? (tick all relevant boxes)

- Initial orientation and induction  
- Annual refresher  
- One off  
- Other (please specify)  

13.5 Are staff competencies in the management of VI/low vision assessed?  
- Y 1  
- N 2  
- DK 8

13.6 If yes, how are they assessed? Please specify

- Education material from vision NGOs  

14 What resources does the RACF use to educate staff about vision and eye health? (tick all relevant boxes)

- Education material from vision NGOs  

Low vision aids □ 2
None □ 3
Other (please specify) □ 4 …………………

15 Does the RACF have written (hard copy) policies for the following (tick all relevant boxes)?

Arrangements for routine optometry attendance □ 1
Referral for optometry □ 2
Optometrist documentation requirements □ 3
Responsibility for onward referral to an ophthalmologist □ 4
Responsibility for receiving an ophthalmologist report □ 5
Management of glasses □ 6
Management of residents with identified low vision □ 7
Management of visits to external medical specialists □ 8
Training/education for vision impairment and low vision □ 9
Other (please specify) □ 10

15.1 ………………………………

16 Does your electronic records administration system have embedded policies for any of the tasks below (tick all appropriate boxes)?

Arrangements for routine optometry attendance □ 1
Optometrist documentation requirements □ 2
Responsibility for onward referral to an ophthalmologist □ 3
Responsibility for receiving an Ophthalmologist report □ 4
Management of glasses □ 5
Management of residents with identified low vision □ 6
Management of visits to external medical specialists □ 7
Training/education for vision impairment and low vision □ 8
Other (please specify) □ 9

…………………………………
Participant information sheet and consent form

Study: Reducing the incidence and impact of vision loss in residential aged care facilities

Principle investigator: Macular Disease Foundation Australia
Project sponsor: Australian Government Department of Social Services

This document has two parts:

- Information Sheet (to share information about the study with you)
- Consent form (for signatures if you choose to participate)

You will be given a copy of the full Informed Consent Form

Version: #1.2(a)
Date: 22/03/2016
Information Sheet

Introduction

The Macular Disease Foundation Australia ("the Foundation"), is an independent, not-for-profit, non-government organisation dedicated to reducing the incidence and impact of a range of eye diseases, with particular emphasis on disease of the macula at the back of the eye.

The Foundation has received funding from the Australian Government to work with several residential aged care facilities, including BaptistCare Dorothy Henderson Lodge, Cooinda Court and Yallambi Centre, to investigate ways in which the eye health of people living in such facilities can be improved. This is being done because there is good evidence from several studies showing that residents of aged care facilities are more likely to have undiagnosed or untreated vision problems compared to people of the same age living in their own home.

This sheet will give you information about this study and invite you to be part of this research. You do not have to decide today whether or not you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research.

This consent form may contain words that you do not understand. Please feel free to ask any questions that will help you to understand this form or the study itself. If you have questions later, you can ask any of the people listed below.

Purpose of the study

Many people living in aged care facilities can have problems with their vision. Sometimes, these problems have not been diagnosed or treated, or the staff are unaware that the person has vision problems and needs certain types of help. We want to find out ways that this can be improved.

To do this, we firstly need to get an estimation of how many people in aged care facilities have vision problems that could be fixed or helped. We then need to work with the management and staff of the facility to find the reasons why some people are not getting the help they need. We will then develop new ways to ensure that the facilities can ensure that residents receive regular eye tests and if necessary, the extra treatment or help they may need. At the end of the project, we will develop an instruction manual that can be used by other facilities all over Australia.

Type of Research Intervention

Most of the research will involve discussion with the management and staff to assess procedures, staff training and so on. We would however like to see how many residents have eye problems that are not diagnosed, or are not recorded.

If you agree to participate in the study, you will have a standard eye examination performed by a fully qualified eye professional (an optometrist or an orthoptist) using high quality, modern equipment. The tests are ones that would normally be done in a modern eye clinic, but will be done in this facility to make it easier for you. The tests will not require the use of any injections or eye drops.

Some of the test results may be sent to an eye specialist for closer examination.

There will be no additional cost to you to have these tests performed.
If any problems are found that could benefit from treatment, this will be discussed with you and/or your guardian, and the various options discussed. If you decide to have treatment, appropriate arrangements will be made by the facility for this to happen. If you require treatment, this will not be done as part of this study. The costs for any additional tests or treatment will be your responsibility.

**Participant Selection**

You are being invited to take part in this study because we need to get a good understanding of the eye health of as many people as possible in this facility.

**Voluntary Participation**

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. If you choose not to participate, all the services you receive at this facility will continue and nothing will change. You can also decide to withdraw from the study at any time if you wish.

**Procedures**

If you agree to participate in the study, a suitable time will be made for the eye examination to take place, here in the facility. The tests will include:

a) reading an eye chart, and a normal printed page

b) testing the focusing of your eyes

c) testing the prescription of your reading glasses (if used).

d) a retinal scan (photo) of the back of each eye

e) a test to measure the pressure inside each eye

f) the use of a special kind of microscope to look inside the eye

g) an OCT scan which gives a cross-sectional photo of the retina at the back of the eye.

The test results will be recorded and reviewed by the examiner. If the examiner finds any potential issues, he or she may send the results to an ophthalmologist (eye specialist) for closer analysis. The results of your tests will be given to you, the clinical staff in the facility, your GP, and noted in your personal records at this facility. Your results will also be kept for analysis in this study however any identifying details (such as your name) will be removed and replaced with a number for analysis purposes. This will complete your personal involvement in the study.

The eye tests will take place in a private room in this facility and other residents will not be present in the room at the same time. It is recommended, though not essential, that someone from your family or your guardian is present when you have the tests performed.

If the eye examination finds any issues that require closer examination and possible treatment, the staff at this facility will arrange for you to have further tests and treatment as required. Any additional tests and treatment that may be required are not part of this study.

**Duration**

Your eye examination should take approximately 20 to 30 minutes to complete. You will only need to have one eye exam for this study. You should however, continue to have regular eye exams in the future, but these will not be part of this study.
Risks

The tests that will be performed in the study are all considered standard care and pose essentially no risk to your health. No injections are given and no eye drops will be placed in your eye.

If this eye exam finds any issues, you may require further tests and possibly treatment. These additional tests will not be part of this study. These additional tests or treatments may have potential side effects, risks and costs, which would be discussed with you at the time of the additional testing or treatment.

Benefits

By participating in this study, you will receive a thorough eye examination in the comfort of this facility at no personal cost. If the tests reveal any problem, the facility will arrange for further tests and possible treatment which may help to improve your vision or at least slow down any further deterioration.

It is also anticipated that this study will help this and other facilities around Australia to improve their procedures, thereby improving the eye health of other people in similar situations.

Reimbursements

You will not be paid to participate in this study, although the tests will be provided at no cost.

(Remember that if you need additional tests or treatment beyond this study, these will be your responsibility.)

Confidentiality

The results of your eye examination will be provided to the nursing management of the facility, your GP and kept in your personal records. If necessary, your results will be discussed with the designated member of your family or your guardian. Where appropriate, and with permission, the results will be provided to your normal eye specialist (ophthalmologist and/or optometrist). If you do not have an ophthalmologist, your GP or optometrist will be able to refer you to one.

Your personal information will not be shared to anyone outside of this facility, your nominated family/guardian, medical team or the research team. The individual information that we collect from this research project will be kept private. Any information about you will have a number on it instead of your name. Only the researchers will know your number.

Sharing the Results

The knowledge that is gained from this project will be used to develop an instruction manual to help other residential aged care facilities to improve their procedures in order to ensure regular eye tests are performed.

It is also planned to publish the findings in a medical journal, present them at medical meetings, and publish them on the Macular Disease Foundation Australia's website and other locations.

Your personal details will never be revealed to anyone other than your guardian, the clinical staff at the facility and your own medical providers.

Voluntary Participation/Right to Refuse or Withdraw

You do not have to take part in this research if you do not want to. Your choice will not affect your conditions, fees or care in this facility in any way. You may refuse to have the eye tests on the day even if you sign this agreement beforehand. You can ask further questions about the study, including your participation in it, at any time.
Illness or Injury

If, as a result of being in this study, you become ill or are injured, please immediately contact your study coordinator. She or he will then give you all necessary information and treatment and will inform the trial sponsor.

Compensation for Injury

If you are injured as a result of your participation in this study you may be entitled to compensation. Sponsors of clinical investigations in Australia have agreed that the guidelines developed by the industry body, Medical Technology Association of Australia (MTAA), will govern the way in which compensation claims from injured participants are managed by sponsors. However, as guidelines, they do NOT in any way dictate the pathway you should follow to seek compensation. The sponsor is obliged to follow these guidelines. These guidelines are available for your inspection on the MTAA website (www.mtaa.org.au) under Policy Initiatives – Clinical Investigations. Alternatively, your study coordinator can provide you with a hard-copy of the guidelines. It is the recommendation of the independent ethics committee responsible for the review of this investigation that you seek independent legal advice before taking any steps towards compensation for injury.

Investigators Benefits

Your study optometrist is being remunerated to conduct your eye exam. He/she will not allow a conflict of interest to compromise their position or this research study.

Who to Contact

If you have any questions about the study, you can ask either of the following:

[Head of clinical services, or equivalent at the particular facility], or
Rob Cummins, Research & Policy Manager at Macular Disease Foundation Australia
(ph 1800 111 709 or rob@mdfoundation.com.au)

Ethics approval

The Bellberry Human Research Ethics Committee has reviewed and approved this study in accordance with the National Statement on Ethical Conduct in Human Research (2007) incorporating all updates. This Statement has been developed to protect the interests of people who agree to participate in human research studies. Should you wish to discuss the study or view a copy of the Complaint procedure with someone not directly involved, particularly in relation to matters concerning policies, information or complaints about the conduct of the study or your rights as a participant, you may contact the Committee chair, Bellberry Human Research Ethics Committee 08 8361 3222.
Study Title: Reducing the incidence and impact of vision loss in residential aged care facilities

Consent form

(Participant Information Sheet MUST be attached)

I, the undersigned, hereby voluntarily consent to my involvement in the research project titled "Reducing the incidence and impact of vision loss in residential aged care facilities."

I acknowledge that the nature, purpose and risks of the research project and alternatives to participation have been fully explained to my satisfaction by _______________________________.

Specifically, the details of the procedure(s) proposed and the anticipated length of time it will take, the frequency with which the procedure(s) will be performed and an indication of any discomfort that may be expected have been explained to me.

• I freely agree to participate in this research project according to the conditions in the Participant Information Sheet which I confirm has been provided to me.

• I understand that my involvement in this study may not be of any direct benefit to me.

• I have been given the opportunity to have a member of my family or another person present while the study is explained to me.

• I have been told that no information regarding my medical history will be divulged to unauthorised third parties and the results of any tests involving me will not be published so as to reveal my identity.

• I understand that access may be required to my medical records for the purpose of this study as well as for quality assurance, auditing and in the event of a serious adverse event.

• I understand that I am free to withdraw from the study at any stage without prejudice to future care or treatment. If I decide to withdraw from the study, I agree that the information collected about me up to the point when I withdraw may continue to be processed.

• I am 18 years of age or over.

• I consent to my treating doctor/s and optometrist being notified of my participation in this study and of any clinically relevant information noted by the trial doctor in the conduct of the trial.

• I declare that all my questions have been answered to my satisfaction.

• I have read, or have had read to me in a language in which I am fluent, and I understand the Participant Information Sheet, version 1.2 dated 22/03/2016.
NAME OF STUDY PARTICIPANT:______________________________________________

SIGNATURE OF STUDY PARTICIPANT OR LEGAL GUARDIAN: Where consent is provided by a legal guardian, the participant should also be informed as to the purpose of the study, the procedures and the risks and benefit, and assent provided.

_______________________________________

DATE: ________________________________

Declaration by senior researcher*:

A verbal explanation of the research project, its procedures and risks has been given to the participant and I believe that the participant has understood that explanation.

NAME OF SENIOR RESEARCHER: ______________________________________

SIGNATURE OF SENIOR RESEARCHER: _________________________________

Date: ________________________________

* A senior member of the research team must provide the explanation and provision of information concerning the research project.
RESIDENT NAME: ______________________________ DOB: __________________

HEARING

Any medical or surgical history that may affect or impact on the ability to hear?

☐ Deafness
☐ Recurrent ear infections
☐ Head Trauma
☐ Other: ____________________________________________

Conduct assessment by standing 1 meter behind the resident. Clap softly, increasing volume until the resident is able to hear. Do this from the centre, right and left side. If resident normally wears an aid, conduct the assessment with the aid on. If he/she normally does not wear the aid, conduct the assessment without the aid.

<table>
<thead>
<tr>
<th></th>
<th>Centre</th>
<th>Left side</th>
<th>Right Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft clap</td>
<td>Yes / No</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Moderate clap</td>
<td>Yes / No</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
<tr>
<td>oud clap</td>
<td>Yes / No</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
</tbody>
</table>

Does the resident have any sensitivity to noise? Yes / No If yes, comment:

______________________________________________________________

Evaluation/Plan:

Left ear ☐ no deficit ☐ mild deficit ☐ moderate deficit ☐ profound deficit ☐ unable to ascertain

Right ear ☐ no deficit ☐ mild deficit ☐ moderate deficit ☐ profound deficit ☐ unable to ascertain

If deficit present how does this impact on care needs:

______________________________________________________________

Hearing aids required: ☐ yes ☐ no If yes ☐ Left ear ☐ Right ear ☐ both
Chooses to wear aids: □ yes □ no □ N/A

Hearing with aids insitu: □ good □ limited □ poor □ N/A

Hearing without aids insitu: □ good □ limited □ poor □ N/A

Maintenance, fitting and storage to be attended by: □ resident □ staff □ N/A

Audiologist review required? □ yes □ no

Approach from: □ left side □ right side □ direct (face-on) □ Any direction

☐ speak louder than normal □ allow additional time to respond □ gain attention by touching resident

☐ gain eye contact □ repeat / rephrase statements □ sign language

☐ facial expressions □ use body language / hand gestures

☐ picture board □ word cards

Additional management strategies: _______________________________________________________________

VISION

Any medical or surgical history that may affect or impact on the ability to see?

☐ Cognitive deficit □ Cataracts □ Glaucoma

☐ Diabetes □ Macular degeneration □ CVA

☐ Optic neuritis □ Other:______________________________________________________________

Place the following items on a table in front of the resident. If the resident normally wears an aid, conduct the assessment with the aid on. [Poor cognitive / communication state will alter effectiveness of this assessment].

Is the resident able to see the following?

<table>
<thead>
<tr>
<th>Colours:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Yes / No</td>
<td>Yellow Yes / No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Small items</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Small button Yes / No</td>
<td>Small safety pin Yes / No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Large items</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Spoon Yes / No</td>
<td>Cup Yes / No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Very large items</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair Yes / No</td>
<td></td>
</tr>
</tbody>
</table>
Evaluation/Plan:

Colour deficit present: □ red colour    □ yellow colour    □ blue colour    □ nil    □ unable to ascertain

Vision with aids insitu: □ good    □ limited    □ profound deficit    □ unable to ascertain

Vision without aids insitu: □ good    □ limited    □ profound deficit    □ unable to ascertain

If deficits (including colour deficit) present how does this impact on care needs:
______________________________________________________________________________________________

Optometrist review required? □ yes    □ no

Glasses required: □ yes    □ no    If yes used for: □ all times    □ reading only    □ long vision    □ short vision

Chooses to wear glasses: □ yes    □ no

Other vision aid(s) required: □ magnifying glass    □ good lighting    □ cane

□ Other:_____________________________________________________________________________________

Approach from: □ left side    □ right side    □ direct (face-on)    □ Any direction

Maintenance, fitting and storage of visual aids to be attended by: □ resident    □ staff

Additional management strategies: _________________________________________________________________

COMMUNICATION AND SPEECH

Any medical or surgical history that may affect or impact on the ability to communicate / speak?

□ Cognitive deficit    □ Dysphasia    □ CVA
□ Aphasia    □ Other:__________________________________________________________________________

Is the resident able to speak clearly? □ yes    □ no

Does the resident have a jumbled sentence structure? □ yes    □ no

Is the resident slow to form words? □ yes    □ no

Does the resident make incomprehensible sounds when communicating? □ yes    □ no

Does the resident have poor concentration? □ yes    □ no
Does the resident have rapid / pressured speech? □ yes □ no

Does the resident stutter? □ yes □ no

Does the resident have difficulty finding words? □ yes □ no

What is the resident primary language spoken? □ English
Other: __________________________________________

Is a translator required? □ no □ yes If yes, Name________________________ Phone No:________

Evaluation

If deficits are identified, how does this impact on care needs:
________________________________________________________________________________
________________________________________________________________________________

Management strategies:

□ facial expressions □ use body language / hand gestures

□ picture board □ word cards □ use questions that require yes / no answer

□ allow additional time to respond □ use short simple sentences

Additional management strategies:
________________________________________________________________________________
________________________________________________________________________________

** Consult with Lifestyle staff regarding deficits identified and how this may impact on activities the resident is involved in. Lifestyle staff to consider appropriate activities to stimulate hearing and vision (e.g. Snoezelen Therapy, Sensory Garden, Music Therapy). **

RN signature: _________________________ Print name: _________________________

Date: _________________________
Appendix 7: Indicative list of possible low vision aids, equipment and assistive technology for subsidies in RACFs

<table>
<thead>
<tr>
<th>Category</th>
<th>Device Type</th>
<th>Price Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td><strong>Optical</strong></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Magnifiers</td>
<td>Optical Magnifiers</td>
<td>$7</td>
</tr>
<tr>
<td></td>
<td>Screen Magnifiers</td>
<td>$625</td>
</tr>
<tr>
<td></td>
<td>Portable Handheld Magnifiers</td>
<td>$395</td>
</tr>
<tr>
<td><strong>Non Optical</strong></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Braille Displays</td>
<td></td>
<td>$3,095</td>
</tr>
<tr>
<td>Braille Embossers</td>
<td></td>
<td>$1,000</td>
</tr>
<tr>
<td><strong>Electronic Assistive Technologies</strong></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Magnifiers</td>
<td>Handheld Electronic Magnifiers</td>
<td>$395</td>
</tr>
<tr>
<td></td>
<td>Electronic Desktop Magnifiers</td>
<td>$2,890</td>
</tr>
<tr>
<td></td>
<td>Magnification With Speech</td>
<td>$3,310</td>
</tr>
<tr>
<td>Reading Machines</td>
<td>Audio Reader</td>
<td>$460</td>
</tr>
<tr>
<td></td>
<td>Book Readers</td>
<td>$475</td>
</tr>
<tr>
<td></td>
<td>Stand Alone Reading Machines</td>
<td>$1,130</td>
</tr>
<tr>
<td></td>
<td>Camera Based Readers</td>
<td>$1,195</td>
</tr>
<tr>
<td></td>
<td>Talking GPS Devices</td>
<td>$395</td>
</tr>
<tr>
<td>Devices Utilising Home Computers</td>
<td>Low Vision Keyboards</td>
<td>$60</td>
</tr>
<tr>
<td></td>
<td>Low Vision Software</td>
<td>$490</td>
</tr>
<tr>
<td></td>
<td>Computer Based Devices</td>
<td>$2,509</td>
</tr>
<tr>
<td>Deaf Blind Communicators</td>
<td>Deaf Blind Communicator</td>
<td>$6,279</td>
</tr>
<tr>
<td><strong>Other Devices</strong></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Specialised lighting</td>
<td>Desk Lamps</td>
<td>$145</td>
</tr>
<tr>
<td></td>
<td>Floor Lamps</td>
<td>$319</td>
</tr>
<tr>
<td></td>
<td>Portable Lamps</td>
<td>$60</td>
</tr>
<tr>
<td></td>
<td>Magnifying Lamps</td>
<td>$319</td>
</tr>
<tr>
<td>Health and Medication</td>
<td>Low Vision Medication Cases</td>
<td>$82</td>
</tr>
<tr>
<td></td>
<td>Talking Alarm Clock and Medication</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reminder</td>
<td>$65</td>
</tr>
<tr>
<td>Clocks and Watches</td>
<td>Vibrating Watches</td>
<td>$149</td>
</tr>
<tr>
<td></td>
<td>Talking Watches and Alarms</td>
<td>$65</td>
</tr>
<tr>
<td></td>
<td>Low Vision Clock and Calendar</td>
<td>$215</td>
</tr>
<tr>
<td>Calculators</td>
<td>Large Display Calculators</td>
<td>$520</td>
</tr>
<tr>
<td></td>
<td>Calculators with Speech</td>
<td>$670</td>
</tr>
</tbody>
</table>

Note - some of the above more complex devices also require in-home consultation for setup and instructional sessions. These consultation services range from $175 - $195, depending on location.
10. Acknowledgements

This project was made possible due to funding from the federal Department of Health.

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Collaboration with other scientists or research institutions

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Excellent cooperation and support was provided by all facilities, who all expressed a keen desire to participate in a project that was aimed to improve the management and quality of life for residents.
## 11. Acronyms and Abbreviations

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<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ACCR</td>
<td>Aged Care Client Record</td>
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<tr>
<td>AMD</td>
<td>Age-related macular degeneration</td>
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<tr>
<td>BE</td>
<td>Better eye</td>
</tr>
<tr>
<td>DVA</td>
<td>Department of Veteran Affairs – entitlement to healthcare support</td>
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<tr>
<td>ERG</td>
<td>Expert reference group</td>
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<tr>
<td>IOL</td>
<td>Intra-ocular lens</td>
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<td>LV</td>
<td>Low vision</td>
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<td>OCT</td>
<td>Optical coherence tomography</td>
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<tr>
<td>RACF</td>
<td>Residential Aged Care Facility</td>
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<tr>
<td>VI</td>
<td>Vision impairment</td>
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