Royal Commission
into Aged Care Quality and Safety

MEDIUM- AND LONG-TERM PRESSURES ON THE SYSTEM: THE CHANGING DEMOGRAPHICS AND DYNAMICS OF AGED CARE

BACKGROUND PAPER 2

MAY 2019

The Royal Commission into Aged Care Quality and Safety was established on 8 October 2018 by the Governor-General of the Commonwealth of Australia, His Excellency General the Honourable Sir Peter Cosgrove AK MC (Retd). Replacement Letters Patent were issued on 6 December 2018.

The Honourable Richard Tracey AM RFD QC and Ms Lynelle Briggs AO have been appointed as Royal Commissioners. They are required to provide an interim report by 31 October 2019, and a final report by 30 April 2020.

The Royal Commission intends to release consultation, research and background papers. This background paper has been prepared by Dr David Cullen, with the assistance of staff of the Office of the Royal Commission, for the information of Commissioners and the public. The views expressed in this paper are not necessarily the views of the Commissioners.

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Introduction

This paper outlines how demographic, social and economic pressures will impact on aged care in Australia. It has been prepared by Dr David Cullen with the support of staff of the Office of the Royal Commission for the information of Commissioners and the public. This paper does not represent a direction or position of the Royal Commission in relation to these areas. Any views expressed in it are not necessarily the views of the Commissioners.

Ageing affects every person throughout their lifespan at different rates and in different ways as every individual is unique. It is inescapable, normal and not necessarily an indication of frailty. Normal ageing slows functionality, but age-related physical, emotional and social changes can be anticipated and managed by understanding the ageing process, adopting a healthy approach to ageing throughout life, and adapting to specific changes. Care available from within the community can support adaptation. However, chronic conditions such as obesity, dementia, and arthritis can diminish functionality. Supportive environments and integrated care systems can help ensure that older people whose capacity has diminished live with dignity and grow personally.[1]

Older people, like everyone, need many different types of assistance at different times and for differing periods. These can include:

- income assistance—including funds for basic living, from public or private pension arrangements, and superannuation and investment concessions;
- medical assistance—such as treatment or nursing care for an illness, injury or chronic condition;
- rehabilitation and support—to help restore function and independence after an illness, surgery, accident or a disruption to living arrangements;
- functional assistance—because they are no longer able to perform activities of daily living, such as bathing, dressing, eating, shopping, or keeping appointments;
- psychological assistance—for loneliness, depression, anxiety, memory loss, confused thinking and other situations;
- behavioural assistance—including help to manage aggression, wandering, disorientation, withdrawal, or compulsive behaviour;
- help with social needs—arising from a lack of interaction with people, isolation from family or friends, or an inability to participate spiritual and cultural activities; and
- housing-related assistance—for home maintenance, gardening, modification or relocation to enable the person to manage with a disability

Older people needing help rarely require one form. Also, their needs change over time. Some of the conditions associated with advanced age become progressively worse—for example, Alzheimer's disease—while older people can benefit from short-term rehabilitation and support to improve or restore their independence when they have other conditions. However, the emphasis in treating older people with chronic conditions is often necessarily on caring, rather than curing.

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[1] World Health Organization (WHO), *Global strategy and action plan on ageing and health*, 2017, Geneva: WHO, 2017.

The Organisation for Economic Co-operation and Development (OECD) defines long-term care as 'care for people needing support in many facets of living over a prolonged period of time'.[2] In Australia, the term aged care is used to describe long-term care when the focus is on the management of the chronic conditions associated with ageing.

Aged care has a number of characteristics that both connect it to and separate it from other health care. Firstly, much of aged care is about social functioning. It is providing help needed to cope when physical and mental disabilities impair the capacity to perform everyday activities such as eating, bathing, dressing, shopping and managing money. While these disabilities can be the consequence of diseases such as osteoporosis, cardiovascular illnesses, multiple sclerosis and Alzheimer's disease, aged care has been principally about managing and reducing functional impairments rather than managing disease processes. Thus, a great deal of aged care has tended not to involve highly technical medical services that need to be provided by physicians or registered nurses and social services have been provided by relatively low-level trained staff members who account for the majority of paid carers.

At the same time, aged care needs to connect with primary and acute care. People with long-term care needs are not necessarily sick and do not necessarily require intensive medical services most of the time, but they tend to see the doctor more often and are high level users of acute care services. Consequently, coordination and integration with the medical care sector is very important to meet the needs of older people with disabilities.

Finally, the receipt of aged care services is intensely personal. This is because it can involve fundamental and intimate tasks like being bathed, dressed and 'toileted' over extended periods. It becomes integral to how people live their lives.

For many, particularly the very elderly (over the age of 85), advancing age brings with it an increasing need for care and support. Australia's population is ageing and the proportion of very old people is increasing so there is likely to be an increase in demand for aged care services in coming decades. However, it is not possible to predict the level of future demand for aged care services, or the nature of the services that will be demanded solely on changes in the make-up of the population. A number of other factors, discussed below, will affect the level of demand for aged care services, the types of services required service delivery—who will deliver them, who will pay, and where they will be delivered.

Changing Demographics

Population Ageing

Older Australians are living longer, and this trend is expected to continue.[3] In 1980–82, life expectancy at age 65 was 13.8 years for men and 18.0 years for women. By 2000–02, it had increased to 17.4 years for men and 20.8 years for women. By 2015–17, it had increased

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[2] F Colombo, A Llena-Nozal, J Mercier, and F Tjadens, *Help Wanted?: Providing and Paying for Long-Term Care* (2011) OECD Health Policy Studies. Paris: OECD Publishing.

[3] Except where otherwise indicated, population statistics in this paper are drawn from the publications of the Australian Bureau of Statistics (ABS) www.abs.gov.au.
ABS, *Australian Historical Population Statistics, 2014*. Canberra: ABS, 2014.
ABS, *Life Tables, States, Territories and Australia, 2015–2017*. Canberra: ABS, 2018.
ABS, *Population Projections, Australia, 2017 (base)—2066. Canberra: ABS,* 2018.
The analysis is based on the Series B projections, which assume no change in the total fertility rate and the net overseas migration rate, and a moderate increase in life expectancy over the next 50 years.

further to 19.7 years for men and 22.3 years for women. Reflecting this increase in life expectancy post age 65 years, the number of the very elderly is expected to rise especially sharply, in the context of a population which, as a whole, is becoming more concentrated in the older age brackets.[4]

In the last 40 years, the number of Australians aged 85 years and over increased significantly in absolute terms and as a share of the Australian population—from 91,640 in 1978 (0.6% of the Australian population) to 503,685 (2.0% of the Australian population) in 2018. On current demographic projections, the number of Australians aged 85 years and over will continue to increase to more than 1.5 million in 2058 (3.7% of the Australian population).

Although the projected increases are significant, it is important to note that the rates of increase in the absolute number of Australians aged 85 years and over, and in the share of the Australian population aged 85 or older, will both be lower in the next 40 years than in the last 40 years—the share of the Australian population aged 85 or older will increase by 83% in the next 40 years compared with 216% in the last 40 years. That is, although the magnitude of population ageing is such that there will have to be significant adjustments to the Australian economy and systems that support older people over the next 40 years, the size of these are unlikely to be any greater than those that have occurred over the last 40 years.

The Population Pyramids in Figure 1 below illustrate how the relativities between the traditional working age population and the older and younger populations are changing. In 1978, less than one in 10 Australians (9.2%) were aged 65 or older. This had become about one in six (15.7%) by 2018 and by 2058, it is projected to be almost one in five (19.9%). The share of the population aged under 15 has steadily declined—from 31.6% in 1978 to 22.3% in 2018. It is projected to be 20.9% in 2058. As a result, the share of the population of traditional working age (15 to 64) is projected to be almost the same in 2058 (59.1%) as it was in 1978 (59.2%)—declining slightly from 62.1% in 2018.

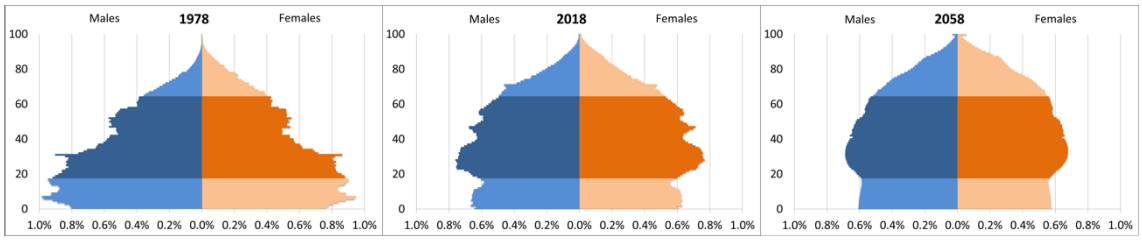

Figure 1: Population Pyramids: 1978, 2018, 2048

Source: Author's calculations based on data from: ABS, *Australian Historical Population Statistics,* Canberra, 2014.

[4] Between 1980–82 and 2015–17, life expectancy at birth increased by 8.1% for women and 13.0% for men. Over the same time period, remaining life expectancy at age 65 increased by 24.1% for women and 42.5% for men and remaining life expectancy at age 85 increased by 27.1% for women and 34.1% for men.

The apparent constancy of the ratio in sizes of the traditional working age and non-working age populations, with the increase in the share of the population past the traditional working age offset by a decrease in the share of the population not yet of working age, can be misleading. It is necessary to also consider how patterns of consumption and income vary through the life cycle of education, work, and retirement. Figure 2 below illustrates this by looking at the total expenditure in 2011–12 by Australian, state and territory governments per person by year of age.

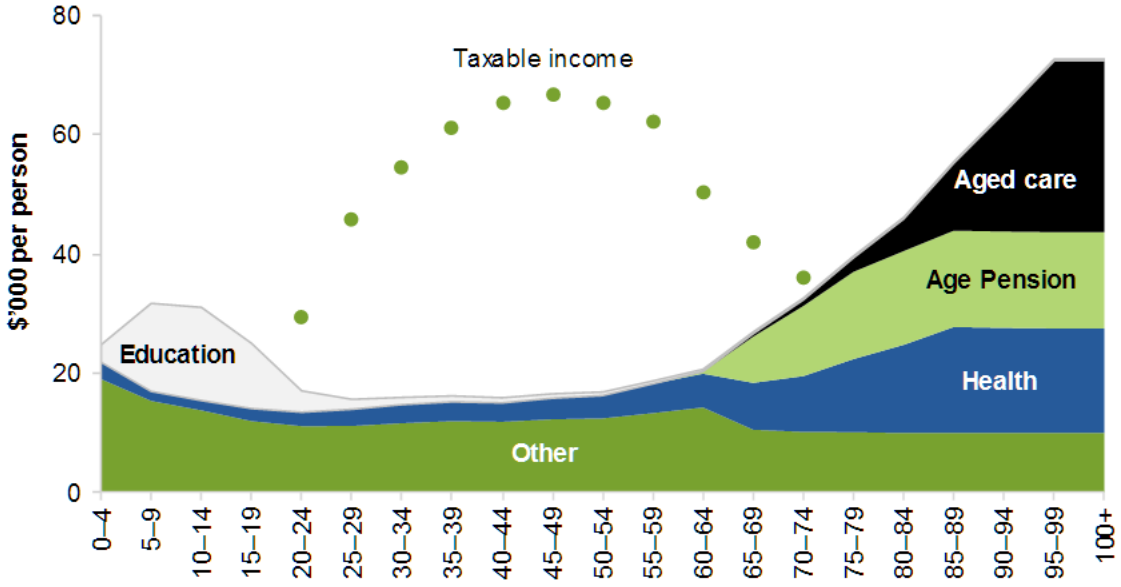

Figure 2: Total Australian, state and territory government spending and taxable income by age (2011–12)

Source: Productivity Commission, *Migrant Intake into Australia*, Inquiry Report No. 77, Canberra, p. 303, 2016.

In general, the value of the total consumption of goods and services is relatively constant over an individual's life. For people in work, this consumption, on average, can be more than funded through their labour income. This age group also contributes more in taxes to government budgets than it receives in government funded goods and services. Outside these working years, because individual income is not sufficient to fund demand for goods and services, some other source is needed. Government funds are not the only source available to bridge this gap between income and consumption for the very young or older cohorts. Private transfers—for example, parents meeting the costs of their children—and savings and asset income, from properties or capital, provide a significant contribution to funding the difference between consumption and income for these groups.

Public spending is relatively high for the young, not yet in the workforce and consuming education services. However, public spending per person is highest beyond the 65 years of age and substantially higher again for people aged 80 years and over. This is because older people tend, on average, to consume significantly more health care services than younger people and expenditure per older person on age pensions and long-term care is considerably higher than expenditure per younger person on education.

The implications of population ageing for the financing of aged care and for the aged care workforce are illustrated in the dependency ratios in Figure 3 below. The 'Overall Dependency Ratio', which measures the number of people of traditional working age (15–64) for every person not of traditional working age (those aged 65 years or older or aged 14 years or younger), has been reasonably constant over the last 40 years and will remain reasonably constant over the next 40 years. However, this constancy is misleading, due to the interaction of the changing mix of age groups in the non-traditional working age population with the age-specific government costs shown in Figure 2 above.

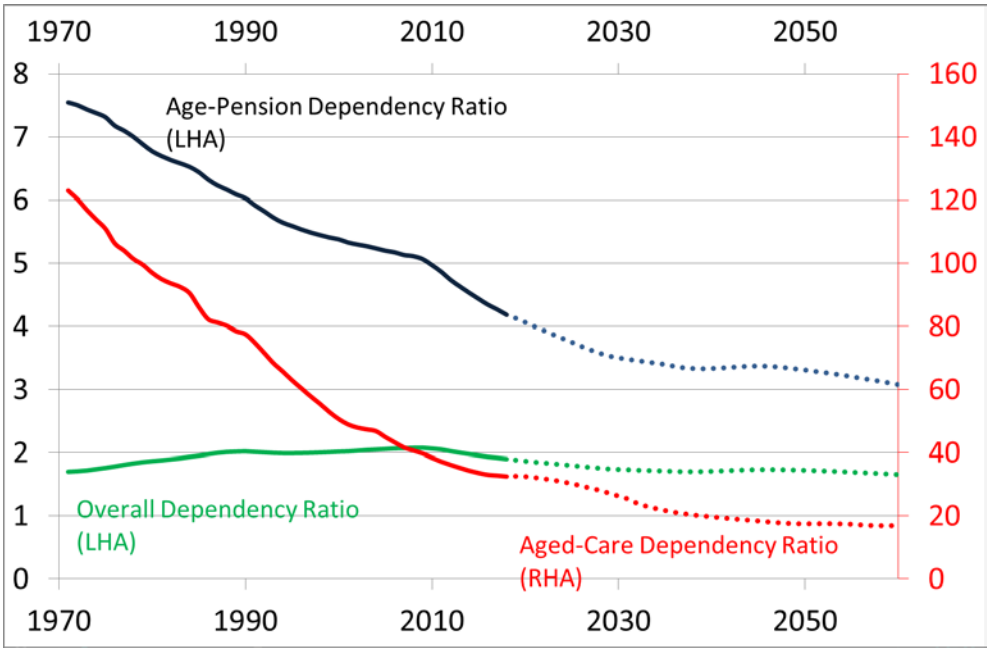

Figure 3: Dependency ratios, 1970 to 2050

Source: Author's calculations based on data from: ABS, *Population Projections, Australia, 2017 (base)—2066. Canberra,* 2018; and ABS, *Australian Historical Population Statistics,* Canberra, 2014.[5]

The 'Age-Pension Dependency Ratio', which measures the number of people of traditional working age (15–64 years) for every person aged 65 years or older, provides some understanding of the issues that will face governments in financing the age pension and services for older people in the coming decades. Currently, there are 4.2 working age Australians for every Australian aged 65 years or over. By 2058, this will have decreased slightly to 3.1. Although this is a significant change, it is smaller than the decrease that occurred over the last four decades, given that the ratio was 7.0 in 1978.

The 'Aged-Care Dependency Ratio' similarly measures the number of people of traditional working age (15–64) for every person aged 85 or older. (The age 85 is chosen because it roughly corresponds to the average age of entry to permanent residential aged care for women.[6]) Here too there has been a significant decline over the last four decades—from 101.4 people of traditional working age (15–64) for every person aged 85 or older in 1978 to 32.5 in 2018. The decline over the next four decades will be much more significant than in the case of the Age-Pension Dependency Ratio. By 2058, there will only be 14.6 people of traditional working age (15–64) for every person aged 85 or older. This rapid decline has implications not only for the financing of aged care but also for the aged care workforce,

[5] Left hand axis (LHA); right hand axis (RHA).

[6] D J Cullen, *Estimating Key Parameters for Long Term Care Insurance in Australia* (2017) Centre of Excellence in Population Ageing Research, *Proceedings of the 25th Colloquium of Superannuation*, https://www.cepar.edu.au/news-events/events/25th-colloquium-superannuation-researchers.

which will face relatively fewer workers to draw on to meet the growing demand for services. Recent projections indicate that the Social Assistance workforce (without child care), which essentially corresponds to the aged care and disability sectors, will grow from 542,000 to 638,100 in the next five years—representing an increase of 96,200 workers or 17.7%. On this analysis, the sector will account for 10.9% of all new jobs created in the Australian economy in the next five years.[7, 8]

Other demographic factors and changes

Aboriginal and Torres Strait Islander people

The aged care system will need to continue to recognise the exceptional needs of Aboriginal and Torres Strait Islander people to ensure these people can access culturally competent and quality aged care. It will also need to continue to recognise that Aboriginal and Torres Strait Islander people tend to need aged care services earlier than many other Australians. Generally, ageing-related conditions affect Aboriginal and Torres Strait Islander people at a younger age than non-Indigenous Australians. The proportions of the Aboriginal and Torres Strait population that are aged 65 and over, and 85 and over, are considerably smaller than equivalents for the non-Indigenous population, reflecting the higher mortality rate and lower life expectancy of Aboriginal and Torres Strait Islander Australians.

These statistics reflect the generally poorer health of Aboriginal and Torres Strait Islander Australians compared with other Australians. According to the National Aboriginal and Torres Strait Islander Social Survey 2014–15, Indigenous people were half as likely as non-Indigenous people to assess their health as 'excellent' or 'very good'. Long-term health conditions affect almost 9 in 10 (88%) Aboriginal or Torres Strait Islander people over the age of 55, with higher risks of certain conditions including diabetes, cardiovascular disease and respiratory disease.[9]

Older Aboriginal and Torres Strait Islander people tend to have higher rates of disability than non-Indigenous people. In the 2016 Census, just over 1 in 4 (27%) older Aboriginal and Torres Strait Islander people reported a need for assistance with core activities (self-care, mobility or communication tasks), compared with 19% of non-Indigenous people aged 65 years and over.[10]

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7 Australian Government. Department of Jobs and Small Business, *Employment Outlook to May 2023*. Canberra: Department of Jobs and Small Business, 2018.
Australian Government. Department of Jobs and Small Business, *Industry Employment Projections, 2018 Report*. Canberra: Department of Jobs and Small Business, 2018.

8 These projections almost certainly underestimate the employment growth needs by the sector over the next five years, as they are trend based and so do not take into account the economic shock from the roll out of the National Disability Insurance Scheme. A recent study estimated that the roll-out of the NDIS will double the required grow in the Social Assistance workforce (without child care), which will place considerable upwards pressure on wages in the sector in order to attract the required workforce. See: D J Cullen and J Dixon, 'The macroeconomics of the National Disability Insurance Scheme' (2018) *Economic Record* (forthcoming).

9 ABS. *4714.0—National Aboriginal and Torres Strait Islander Social Survey, 2014–15*. Canberra: ABS, 2016.

10 ABS. *2071.0—Census of Population and Housing: Reflecting Australia—Stories from the Census, 2016. Aboriginal and Torres Strait Islander population, 2016*. Canberra: ABS, 2017.

Broadly speaking, older Aboriginal and Torres Strait Islander people have proportionally higher representation in home care services and proportionally lower representation in residential care services relative to the total aged care target population.[11] In 2018–19, about 3.7% of all recipients of home care services were Aboriginal and Torres Strait Islander people, compared with 1.0% for residential aged care.[12]

Culturally and linguistically diverse people

Australia's older population is multicultural and linguistically diverse. The older culturally and linguistically diverse population of Australia is not homogenous and the needs of individuals vary greatly. However, in general, older people from culturally and linguistically diverse backgrounds have relatively poorer socio-economic status and may face language barriers in accessing the services they need. They face a greater risk of having differing cultural practices and norms to their carers leading to lack of understanding of and barriers to service use.[13]

In the 2016 Census, more than a third (37%) of Australians aged 65 years or over were born overseas. Of these, 6% either spoke English only and poorly or did not speak English at all.[14] Among all Australians, more than a fifth (21%) spoke a language other than English at home.[15] At present, older people from these communities do not seem to access as many aged care services as other older Australians, though it is unclear whether this is due to a 'healthy selection factor' in immigration requirements or different cultural expectations around familial care. Broadly speaking, people from culturally and linguistically diverse backgrounds have proportionally higher representation in home care services and proportionally lower representation in residential care services.[16] In 2018–19, about 25.7% of all recipients of home care services were from culturally and linguistically diverse backgrounds, compared with 19.5% for residential aged care.[17] In any case, the demand for culturally appropriate services is likely to increase considerably in the future and this demand will change over time as the different ethnic populations continue to age at different rates.

One of the challenges of ensuring the provision of culturally appropriate care is the changing makeup of the overseas born population which may present difficulties in finding an appropriate workforce. Among people born overseas, older people were more likely to have been born in Europe (67% compared with 25% among those born overseas and aged under 65 years). Conversely, only 16% of older people born overseas came from Asia, compared with 46% of people under 65 who were born overseas.[18] This is partly a reflection of Australia's migration history, with earlier post-war migration from Europe and then more recent increases in migration from Asia.

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11 Australian Department of Health, *2017–18 Report on the Operation of the Aged Care Act 1997*. Canberra: Australian Department of Health, 2018, p. 63.

12 Steering Committee for the Review of Government Service Provision, *Report on Government Services 2019*. Table 14A.18. Canberra: Productivity Commission, 2019.

13 Federation of Ethnic Communities' Councils of Australia (FECCA), *Review of Australian research on older people from culturally and linguistically diverse backgrounds*. Canberra: Department of Social Services, 2015.

14 ABS. Census, unpublished data generated using ABS TableBuilder. Canberra: ABS, 2016.

15 ABS. *2071.0—Census of Population and Housing: Reflecting Australia—Stories from the Census, 2016*. Canberra: ABS, 2017.

16 Australian Department of Health, *2017–18 Report on the Operation of the Aged Care Act 1997*. Canberra: Australian Department of Health, 2018 p. 64.

17 Steering Committee for the Review of Government Service Provision, *Report on Government Services 2019*. Table 14A.17. Canberra: Productivity Commission, 2019.

18 J L Boland, Attachment *CTH.0001.7000.0018—Region of birth of older Australians*, *2016* to *EXHIBIT 1–6 WIT.0001.0001.0001—Statement of Justine Louise Boland*. Adelaide: Royal Commission into Aged Care Quality and Safety, 2019.

Expectations will change

As the present generation needing aged care gives way to those now retiring and currently in the workforce, the average incomes and assets of older people may well increase, and so may their capacity to pay for their own care. People now reaching the eligibility age for the age pension are significantly wealthier in real terms than their mothers and fathers were at the same time of life. In 2013–14, about 42% of people of age pension age were receiving the full age pension. A further 28% of people of age pension age were receiving a part-age pension and 30% were not eligible for the age pension. The proportion of people of age pension age who do not receive any age pension is not expected to decline significantly in the coming decades. However, the proportion of people of age pension age who receive the full age pension is expected to decline significantly.[19]

Most of the people who will require aged care services in the next 20 years are already in the retirement phase of their life and their future level of wealth and income is already relatively fixed. The data reveal that those aged 65–74 will be financially better off, on average, than those aged 75 years and over. In 2015–16, the average superannuation balance of people aged 65–74 was $376,800—56% higher than the average superannuation balance of people aged 75 years and over. The median superannuation balance (at $192,200) of those aged 65–74 was 79% higher than the median superannuation balance of people aged 75 and over (at $107,500).[20]

There will continue to be a significant group of older people with low incomes and little wealth. This will include people who have experienced long periods of unemployment during their working lives, those who have been on a disability pension, people who are homeless, and very old people who were unable to accumulate wealth or had less opportunity to work and participate in superannuation schemes. Moreover, because aged care needs normally arise 20 to 30 years after retirement, many older people will have already consumed much of their accumulated wealth during their retirement. For all these people, taxpayers will remain the main contributors to the cost of their care.

Figure 4 illustrates the equivalised disposable weekly income[21] distributions of the populations aged 65–74 and 75 years and over in 2015–16. Note, the population aged 65–74 has access to more disposable income than the population aged 75 years and over—partly, as discussed above, because of greater access to superannuation. There is also considerable variation in the resources available to individuals within each age cohort.

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19 Australian Government. Treasury, *2015 Intergenerational Report—Australia in 2055*. Canberra: Department of Treasury, 2015 p 67.

20 ABS, *Household Income and Wealth, Australia: Summary of Results, 2015–16*. Table 15.3. Canberra: ABS, 2017.

21 Equivalised disposable household income adjusts actual incomes to enable analysis of the relative wellbeing of households of different size and composition. It takes into account taxation and the number of people in a household to estimate the level of income that is available to an individual for consumption and savings. The approach recognises that there are economics of scale from living together and that the resource usage of individuals varies by age.

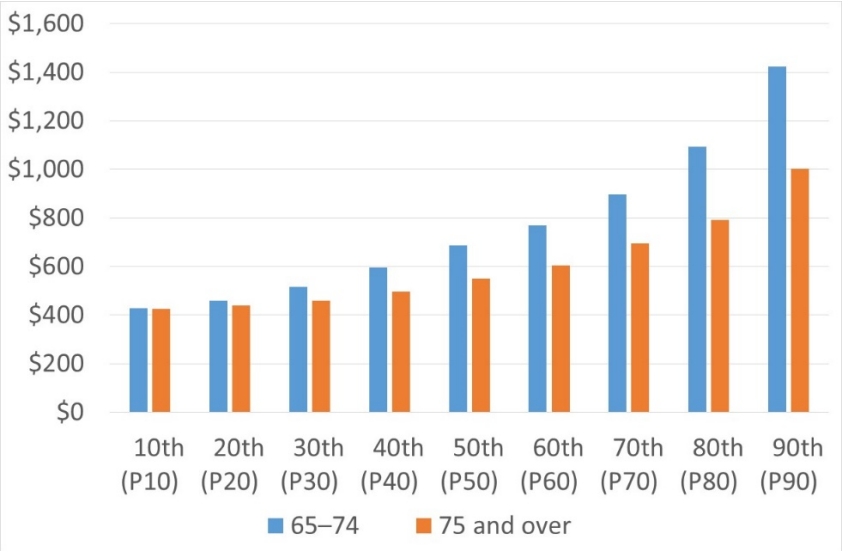

Figure 4: Equivalised disposable household income per week at top of deciles, aged 65–74 and 75+ (2015–16)

Source: ABS, *Household Income and Wealth, Australia: Summary of Results, 2015–16*. Table 5.4. Canberra: ABS, 2017.

Whatever people's personal circumstances, as average living standards increase, there is likely to be a growing demand for choice about what care is delivered—how and where—and for high quality services that are available when needed, rather than constrained by supply. Many older people are also likely to demand greater choice in the level of amenity they wish to pay for, especially if average wealth continues to increase. They will probably want to have a greater say in the organisation and coordination of their care and demand more information about the care services available.[22]

Expectations about the role and availability of community carers may also change. In 2015, more than one in eight Australians (2.86 million people) provided some informal care and 825,000 informal carers were primary carers, providing the majority of the recipient's care.[23] Some 91.5% of primary carers were providing assistance to a partner, child or parent. Changes in family structure and in the participation of women in the workforce will inevitably affect the aged care system. The majority of carers of older people are women of working age and more than half of all primary carers are in the workforce. Demographics and the changing working patterns of older people will have implications for the future availability of family carers.[24] More flexible support arrangements will therefore be needed to suit differing work patterns and care arrangements over time.

While expectations may change, Australians are likely to continue to expect that any publicly supported aged care system is available and accessible equally to everyone who needs assistance, especially as taxpayer contributions will continue to be necessary for those unable to afford the cost of their care. They may also expect that access to subsidised care will continue to be tested by an independent and objective assessment of need and that

[22] E Kahana and B Kahana, 'Baby boomers' expectations of health and medicine' (2014) 16 *The virtual mentor*.
T J Garcia, T C Harrison and J S Goodwin, 'Nursing Home Stakeholder Views of Resident Involvement in Medical Care Decisions' (2015) 26 *Qualitative health research*.

[23] Deloitte Access Economics and Carers Australia, *The economic value of informal care in 2015*. Canberra: Carers Australia, 2015.

[24] L H Ryan, J Smith, T C Antonucci and J S Jackson, 'Cohort differences in the availability of informal caregivers: are the Boomers at risk?' (2012) 52*, The Gerontologist*.

objective, independent and up-to-date information will be available to care recipients and their carers. This information would explain what care is available, the appropriateness of it to their particular circumstances, how to get it when needed, and rights and responsibilities that apply.

Service providers will continue to be expected to deliver high quality services and value for money. There will be a continuing need to maintain and monitor quality standards to ensure that older people get high quality care. Stronger consumer safeguards and better quality information will need to accompany greater choice, particularly as many of those receiving care will be frail and may be unable to access the full range of information available.
A clearly defined set of responsibilities for service providers and care recipients will continue to be necessary to ensure that people receiving care know exactly what they are entitled to. Avenues of complaint that people receiving care can use without fear of retribution if they believe they have been treated badly or disadvantaged in some way will be just as important.

Changes in the patterns of disease and dependency

Future patterns of disease and dependency will greatly influence the nature of the aged care services that older people will need also. In particular, the specific reasons why people become dependent on care, the length of time older Australians live after they have lost their independence, and the implications of the various kinds of assistance needed will all affect the demand for aged care services.

As the population ages, new conditions and the need for new care services will emerge. For example, older people will be likely to have more than one health condition (co-morbidity) as their life expectancy increases. Moreover, the impact on aged care of increasing obesity and depression across the older population and a continuing threat of international influenza epidemics, is unknown. Disorders of memory, understanding, behaviour, motor and sensory function, mobility and balance are also likely to become more widespread. These neurological conditions are a key contributor to the substantial increase in dependency experienced by many very old people.[25]

There has been vigorous debate about whether longer life spans have resulted from sick people being kept alive longer, or whether illness and disability have been compressed towards the end of life—the 'compression of morbidity' debate. The evidence is inconclusive for Australia and international evidence is mixed. The onset of Alzheimer's disease, for example, does not appear to be occurring later in people's lives. This suggests people will suffer its disabling effects for longer periods of their lives. National disability surveys however, do not yet provide clear evidence overall of a general increase in disability-free years of life.[26] Indeed, there is some evidence that older people will, on average, spend a greater proportion of their remaining lives without disability in the future than currently

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[25] M J Prince, F Wu, Y Guo, L M Gutierrez Robledo, M O'Donnell, R Sullivan and S Yusuf S, 'The burden of disease in older people and implications for health policy and practice' (2015) 385, *Lancet*.
M Cutler, S Chatterji, J Byles, T Seeman and E Verdes, 'Health, Functioning, and Disability in Older Adults-Present Status and Future Implications' (2015) 385 *Lancet* 563–75.
S Sube Banerjee, 'Multimorbidity—older adults need health care that can count past one' (2015) 385 *Lancet* 587–89.

[26] 'Life expectancy' measures how many years, on average, a person of a given age can expect to live if current death rates do not change. While life expectancy is an important indicator of population health, people's health and wellbeing are also increasingly being considered in terms of their quality of life and functional status—with the key question being whether longer life is being exchanged for lower quality of life. An indication of this can be provided using 'health expectancies'. 'Health expectancies' is a general term used to describe, within a person's life expectancy, the expected years spent in various health states—in this case the estimated years spent living with and without disability.

happens. However, they will spend more years in absolute terms living with disability in their remaining lives than currently.

Figure 5 breaks down remaining life expectancy for men and women at age 65 into the expected years spent with a severe or profound disability, the expected years spent with a mild or moderate disability and the expected years spent without disability. Between 2003 and 2015, there appears to have been a slight increase in the absolute number of years spent with a profound or severe disability for men (from 3.3 years to 3.4 years), and a slight decrease in the absolute number of years spent with a profound or severe disability for women (from 6.2 years to 5.6 years). For men, the share of remaining life after the age of 65 years spent with a profound or severe disability decreased from 18.8% to 17.4%. For women, the share of remaining life after the age of 65 years spent with a profound or severe disability also decreased—from 29.5% to 25.1%.

At the same time, the number of years spent with a mild or moderate disability has increased for both men (from 6.7 years to 7.0 years) and women (from 6.0 years to 6.7 years). For men, the share of remaining life after the age of 65 years spent with a mild or moderate disability decreased from 38.1% to 35.9%. For women, the share of remaining life after age 65 spent with a mild or moderate disability increased from 28.6% to 30.0%.

For both men and women, the number of years of life lived after the age of 65 years without disability has also increased, from 7.6 years to 9.2 years for men and from 8.8 years to 10.0 years for women. The share of remaining life after the age of 65 years lived without disability has also increased for both men and women; from 43.2% to 46.7% for men and from 41.9% to 44.8% for women.

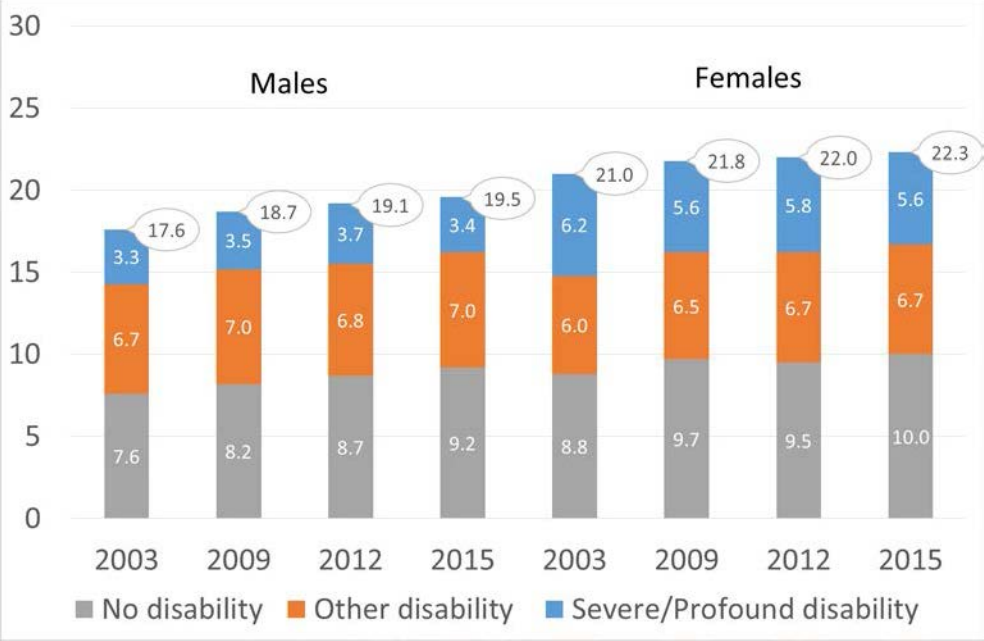

Figure 5: Selected health expectancies at age 65, by sex, 2003 to 2015

Source: Australian Institute of Health and Welfare (AIHW), *Life expectancy and disability in Australia: expected years living with and without disability.* Canberra: AIHW, 2017.

Note, however, that even if illness and disability were occurring closer to the end of life, it would still be possible for there to be an increase in the use of services because of new drugs, other forms of treatment, and higher expectations of quality of life. A reasonable 'take home' message from this extensive debate is that many factors are likely to increase demand for aged care services—increasing proportions of very old people, years of care

need, new service options, and higher expectations of levels of care. Flexibility will assist the aged care system to respond to new patterns of illness and dependency and the need for new types of care arrangements. Innovation will also be important. Many innovative ideas in the provision of aged care in Australia in recent times have come from service providers who have been able to stretch the possibilities of existing funding arrangements to try out new concepts in care. The challenge is to design funding arrangements that encourage and reward flexibility and innovation while preserving accountability.

The rising incidence of dementia

Dementia is a term used to describe a group of similar conditions that gradually impair brain function. It is commonly associated with memory loss but can affect speaking, thinking and moving. A person's personality may also change, and health and functional ability generally decline as the condition progresses.

The Australian Institute of Health and Welfare (AIHW) estimates that in 2018, some 376,000 Australians had dementia and 61% were female. Dementia was the leading underlying cause of death for females and remained the third leading cause of death for males. Figure 6 illustrates the number of Australians projected to have dementia between 2000 and 2030. About 550,000 Australians are expected to have dementia by 2030, with 42.8% of those aged 85 years or older.

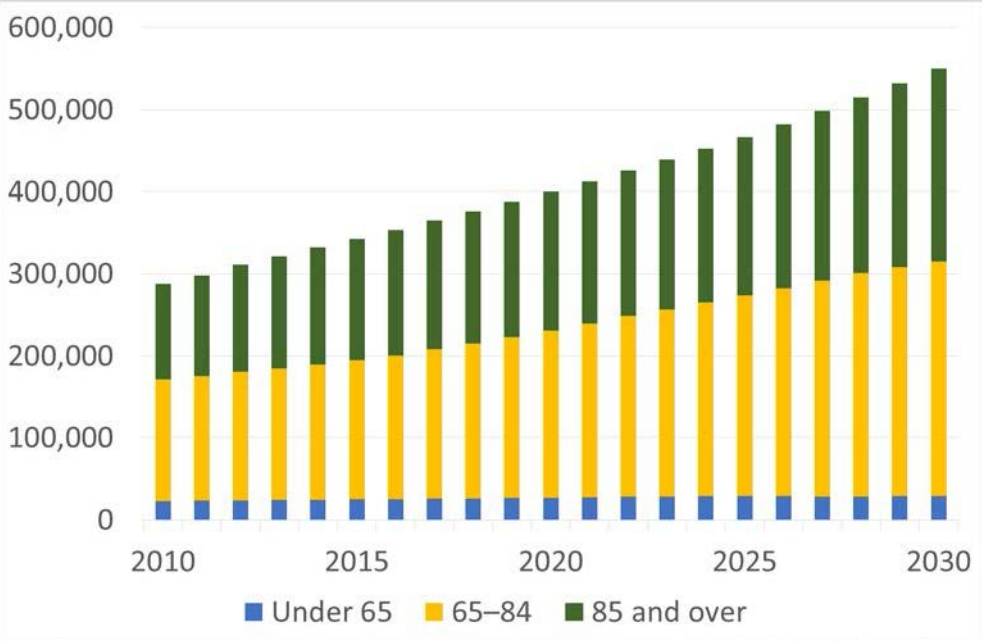

Figure 6: Estimated number of Australians with dementia by age group, 2000 to 2030

Source: AIHW, *Australia's health 2018.* Chapter 3.14. Canberra: AIHW, 2018.

As Figure 7 illustrates, the incidence of dementia increases dramatically after the age of 70 years, roughly doubling every five years. About 0.1% of the population under 65 years of age has dementia, compared with about 5.2% of the population aged between 65 and 70 years and 28.8% of the population aged 85 years or older. In general, prevalence of dementia is higher for women than men at all ages.

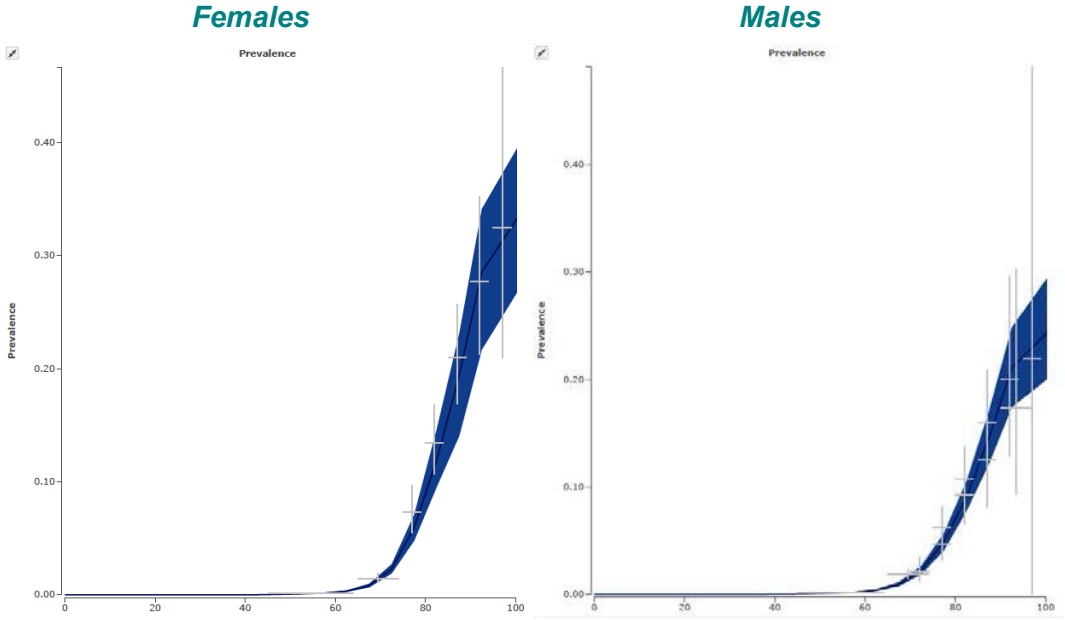

Figure 7: Estimated prevalence of dementia, Australia, 2017, by age, by sex

Source: Institute of Health Metrics and Evaluation (IHME), *Epi Visualisation*, Seattle, WA: IHME, University of Washington, 2019. Available from http://ihmeuw.org/4q1k.[27]

As our population ages, dementia will become a key focus for the aged care services of the future. However, current care models are not always suitable for people with moderate to severe dementia. While people with mild dementia can be cared for within a comprehensive general aged care system, people with moderate to severe dementia require special care. In some cases, this may mean specific services or facilities for such people—especially as the integration of people with severe dementia and those without dementia can have implications for the well-being of both groups. In other cases, it may be sufficient to add specially trained staff members to services that cater for people with and without dementia. There is also a need for new approaches to service and building design to emphasise familiarity and regularity, and manage behaviour.

There will also be extra demands on community care service providers in helping people with dementia and their families, manage the condition. New drug therapies are increasingly becoming available, along with a range of special care services for dementia sufferers such as memory clinics and dementia day care centres. As with other conditions, choice will be vital for people with dementia, and service providers will need to offer a wide variety of care alternatives and be able to combine different forms of care as and when needed. The aged care system will need to be sufficiently flexible to support these options.

[27] The data in Figure 7 are modelled using a complex Gaussian Process Regression on all available international data on the prevalence of dementia. The shaded areas represent the 95% credible interval on the prevalence estimates. The error ranges are significant because very few comprehensive dementia prevalence studies have been undertaken in Australia.

Demand for aged care

As the process of population ageing occurs, the challenge of providing and funding long-term care for older people will become increasingly important. Two facts are central to this challenge. The first is that older cohorts are living longer than ever before, with a corresponding rise in the numbers expected to live beyond the age of 70 years and hence to be at material risk of requiring care. The second is that younger cohorts are having fewer children, which among other things, means they will have fewer voluntary carers to draw on when they reach old age. These trends alone—the sheer increase in the numbers of the very old, especially relative to the potential population of carers—make large and sustained increases in the demand for aged care inevitable.

A recent study found that that 80% of Australians used an aged care program at some stage before their death. It is also interesting that cause of death patterns differed somewhat between those who had used aged care before their death and those who had not used any aged care before their death. Coronary heart disease (14%) was the leading underlying cause of death for people who had used aged care before their death, followed by dementia (11%). For people who had not used aged care before their death, coronary heart disease was also the leading underlying cause of death (16%), but this was followed by lung cancer (9%). Cancer-related causes were more common among those who had not used any aged care before their death. For those who had used aged care before their death, cancer-related causes were more common among people who had last used community-based programs.[28]

Causes of death patterns also varied depending on the last aged care program used. Coronary heart disease was the leading underlying cause of death for people who had last used home support services, home care packages, transition care and respite residential aged care. But dementia was the leading cause of death for people who had last used permanent residential aged care. Cancer-related causes were more common among people who had last used community-based aged care programs. These differences might reflect not only the way death rates vary by age for various diseases, but also the age at which particular aged care programs are commonly used.

Lifetime risk

It is important to understand the likelihood of a person not in aged care entering into aged care at some time in the future in understanding the demand that population ageing will put on the need for aged care.[29] This likelihood is termed lifetime risk of entry. The lifetime risk of entry to permanent residential aged care is not well understood, perhaps because, as Figure 8 illustrates (for 2014), at age 80 years only 4.0% of men and 5.6% of women were receiving permanent residential aged care at any one time. Even at age 90 years, only 17.9% of men and 29.9% of women were receiving permanent residential aged care at any one time.

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[28] AIHW, *Cause of death patterns and people's use of aged care: A Pathway in Aged Care analysis of 2012–14 death statistics*. Canberra: AIHW, 2018.

[29] The analysis in this section is restricted to permanent residential aged care. The life time risk of requiring aged care is clearly higher as many people receive aged care services in the community and never progress to residential aged care.
See: DJ Cullen, Estimating Key Parameters for Long Term Care Insurance in Australia, In Proceedings of the 25th Colloquium of Superannuation Researchers. Sydney: Centre for Pensions and Superannuation, University of New South Wales, 2017.
D J Cullen, Technical Paper on the changing dynamics of residential aged care. Canberra: Productivity Commission, 2011.
D J Cullen, 'The financial impact of entering aged care' (2007) 26 Australia's Journal of Ageing, 145–7.

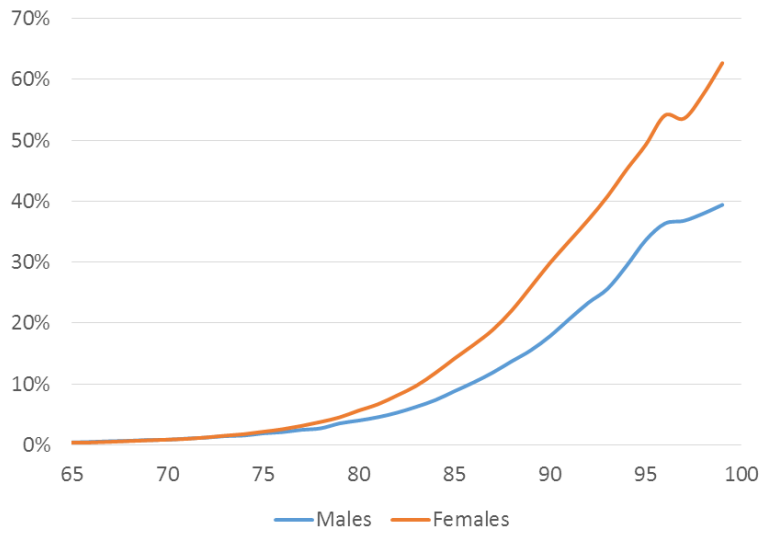

Figure 8: Probability of being in receipt of permanent residential aged care by age, by sex, 2014

Source: D J Cullen, Estimating Key Parameters for Long Term Care Insurance in Australia. In Proceedings of the 25th Colloquium of Superannuation Researchers, 2017.

However, such cross-sectional data tend to understate the likelihood that an individual will require permanent residential aged care at some time in their life. Admission rates (see Figure 9) are similarly misleading. For example, in 2014 only 2.3% of women aged 80 years entered aged care in the year that they turned 80 (2.1% for men). Even at age 90 these entry rates were 11.1% and 9.5% respectively. These admission rates understate the cumulative impact of admissions over a lifetime.

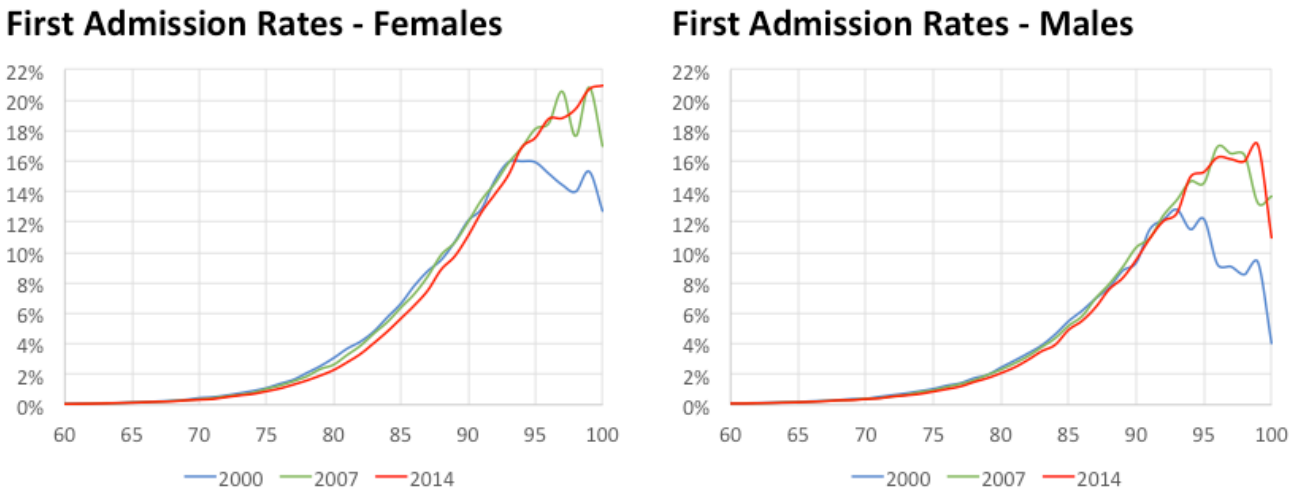

Figure 9: First Admission Rates to permanent residential aged care 2000, 2007 and 2014

Source: D J Cullen, Estimating Key Parameters for Long Term Care Insurance in Australia. In Proceedings of the 25th Colloquium of Superannuation Researchers, 2017.

Better estimates of the lifetime risk of requiring permanent residential aged care can be provided by life table analysis. Figure 10 shows the estimated remaining lifetime risk of first admission to permanent residential aged care at age 0 and age 65 years for men and women for each financial year from 2000 to 2014. It illustrates how both risks have increased over that period for men and women, with some attenuation in the rate of increase for women in recent years. In 2014, the lifetime risk at birth of admission to permanent residential aged care is estimated to have been 38.3% for men and 55.4% for women. That is, it is estimated that more than a third of all men and more than half of all women will be admitted to permanent residential aged care at some time in their life if the drivers of admission remain as they were in 2014. These risks are significantly higher than estimated in 2000, when the lifetime risk at birth of admission to permanent residential aged care was estimated to be 29.3% for men and 49.6% for women. The estimated remaining lifetime risk at age 65 years of first admission to permanent residential aged care has also increased significantly between 2000 and 2014 from 33.5% to 42.8% for men, and from 53.8% to 59.3% for women.

Figure 10: Remaining lifetime risk of first-admission at or after ages 0 and 65 by sex, 2000 to 2014

Source: D J Cullen, Estimating Key Parameters for Long Term Care Insurance in Australia. In Proceedings of the 25th Colloquium of Superannuation Researchers, 2017.

Figure 11 (below) illustrates how the lifetime risk curve for first admission to permanent residential aged care after a given age remains reasonably flat for both men and women until about the age of 65 years when the remaining lifetime risk of first admission to permanent residential aged care begins to increase.

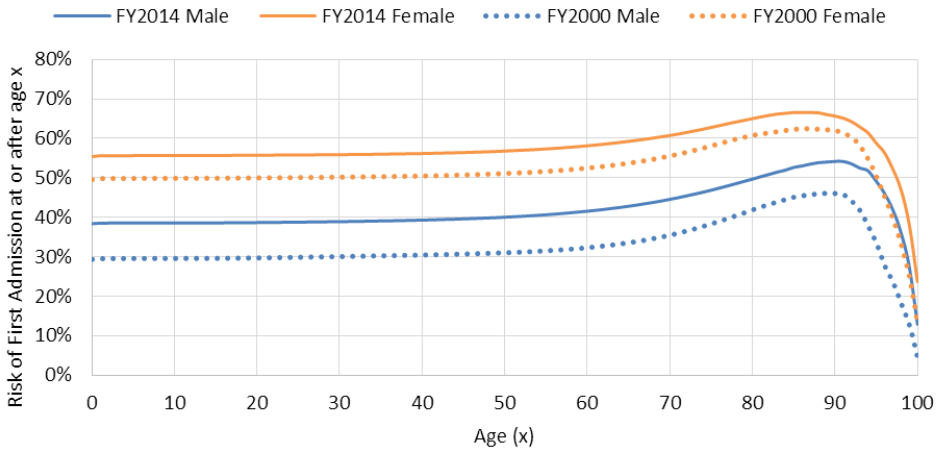

Figure 11: Remaining lifetime risk of first-admission at or after age x, by sex, 2000 and 2014

Source: D J Cullen, Estimating Key Parameters for Long Term Care Insurance in Australia. In Proceedings of the 25th Colloquium of Superannuation Researchers, 2017.

Remaining lifetime risk is essentially flat until the age of 65 years because very few people enter residential aged care before that age. As the National Disability Insurance Scheme (NDIS) has been introduced, remaining lifetime risk should be even flatter in the future, up to age 65 years, with younger people needing long-term care having greater access to other forms of care. The remaining lifetime risk of first admission to permanent residential aged care (for 2014) peaks at age 89 years for men, at 54.0%, and at age 86 years for women, at 66.6%. The peak for men is significantly more pronounced—41.2% higher than the lifetime risk at birth—than for women—20.2% higher than the lifetime risk at birth.

Figure 11 also illustrates how the shape of the remaining lifetime risk curve has also changed between 2000 and 2014. The initial part of the curve is now flatter for longer for both men and women. For men, the remaining lifetime risk of permanent residential aged care at age 65 years was 12.5% (3.7 percentage points) greater than the lifetime risk at age 0 in 2000. By 2014, this difference had increased in absolute terms (to 3.9 percentage points) but decreased in relative terms to 10.1%. For women, the remaining lifetime risk of permanent residential aged care at age 65 was 7.3% (3.6 percentage points) greater than the lifetime risk at age 0 in 2000. By 2014, this difference had decreased in absolute terms to 3.4 percentage points and in relative terms to 6.0%.

The maximum value of the remaining lifetime risk curve had also decreased significantly, relative to the lifetime risk at age zero. For men, the maximum remaining lifetime risk of permanent residential aged care was 57.3% (16.8 percentage points) greater than the lifetime risk at age 0 in 2000. By 2014, this difference had decreased in absolute terms to 15.8 percentage points and in relative terms to 41.6%. For women, the remaining lifetime risk of permanent residential aged care at age 65 was 26.1% (12.9 percentage points) greater than the lifetime risk at age 0 in 2000. By 2014, this difference had decreased by 11.2 percentage points and in relative terms by 20.2%.

By construction, lifetime risk at any age in any financial year is a function of the life table for that financial year, the smoothed first admission rates for that financial year, and the smoothed 'in care' mortality rates for that financial year. Figure 12 (below) illustrates the impact that the changes in each of these variables between 2000 and 2014 had on the lifetime risk curve for men. The line '2000lx2014' represents the risk curve that would arise if the life table in the lifetime risk calculation for 2000 was replaced with the life table for 2014. Similarly, the lines '2000Rqx2014' and '2000Fadmx2014' respectively represent the results of replacing the smoothed first admission rates and the smooth 'in care' mortality rates in the lifetime risk calculation for 2000 with the rates for 2014.

For men, the principal driver of the change in lifetime risk of first admission to permanent residential aged care between 2000 and 2014 was the increase in life expectancy over that period. The changes in the 'in-care' mortality rates had only a slight impact on the lifetime risk curve. Changes in first admission rates, on their own, lowered the lifetime risk curve, but this effect was more than offset by the increases in the curve driven by increasing life expectancy.

For women, the principal driver of the change in lifetime risk of first admission to permanent residential aged care between 2000 and 2014 was also the increase in life expectancy over that period. The changes in the 'in-care' mortality rates had only a slight impact on the lifetime risk curve. Changes in first admission rates had a greater impact on lowering the lifetime risk curve than for men but this effect was more than offset by the increases in the curve driven by increasing life expectancy.

In general, the principal reason that the lifetime risk of admission to permanent residential aged care is increasing for men and women, is the increase in life expectancy experienced by men and women over the recent decades. This means that more people are living to the age when chronic conditions are more common, and this is naturally associated with increased needs for admissions to residential aged care.

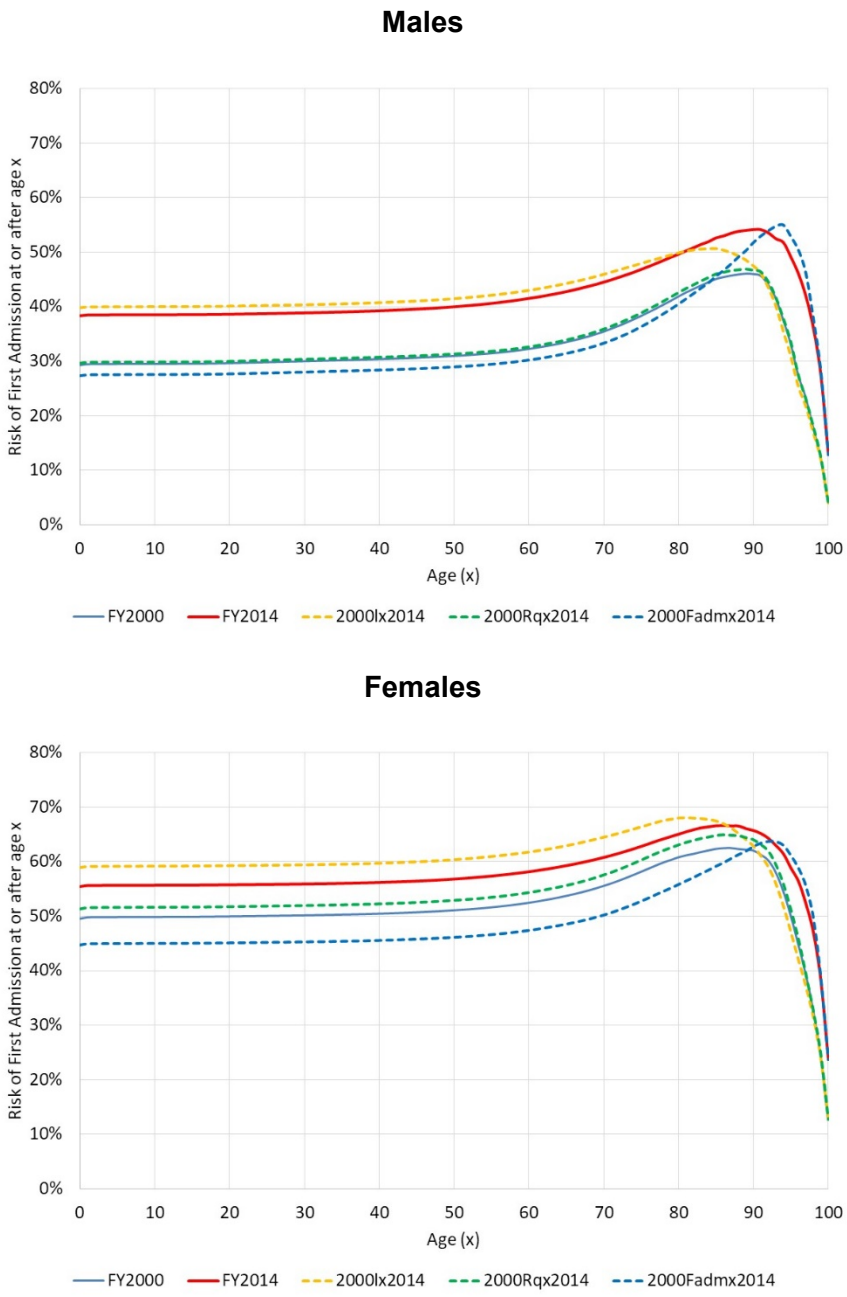

Figure 12: Drivers of change in lifetime risk of first admission at or after age x

Source: D J Cullen, Estimating Key Parameters for Long Term Care Insurance in Australia. In Proceedings of the 25th Colloquium of Superannuation Researchers, 2017.

Table 1 provides further details of the contributions of the three drivers of the change in lifetime risk between 2000 and 2014.

Change between 2000 and 2014	Males		Females	
Total change in lifetime risk	9.09 p.p	31.0%	5.82 p.p	11.7%
-- Change in life expectancy	10.57 p.p	36.1%	9.37 p.p	18.9%
-- Change in death rates in care	0.38 p.p	1.3%	1.67 p.p	3.4%
-- Change in first admission rates	-1.94 p.p	-6.6%	-4.85 p.p	-9.8%
-- Change in Other factors	0.07 p.p	0.2%	-0.37 p.p	-0.8%

Table 1: Drivers of lifetime risk of admission to permanent residential aged care

Source: D J Cullen, Estimating Key Parameters for Long Term Care Insurance in Australia. In Proceedings of the 25th Colloquium of Superannuation Researchers, 2017.

Current estimate of lifetime risk

The traditional estimates of lifetime risk developed above are 'cohort estimates'. That is, like traditional life expectancy measures, they are driven by past experience and assume that people born today will experience the same mortality rates and rates of admissions to permanent residential aged care as the current population. Better estimates (including for insurance purposes) are given by 'period estimates'. They project forward trends in current observed rates to predict the mortality rates and rates of admissions to permanent residential aged care that people born today will experience in the future.

The Improvement Factors published by the Australian Government Actuary are used to project future age specific mortality rates which are then used to build a new stationary lifetable in which people experience the projected age-specific mortality rates.[30] This new stationary lifetable for the Australian population is then used in a new lifetime risk lifetable. Future first admission rates are adjusted in a similar way. Changes in mortality rates in care are ignored as these are of second order. The results of this analysis are shown in Figure 13.

[30] Australian Government Actuary, *Australian Life Tables 2010–12*. Canberra: The Treasury, 2014.

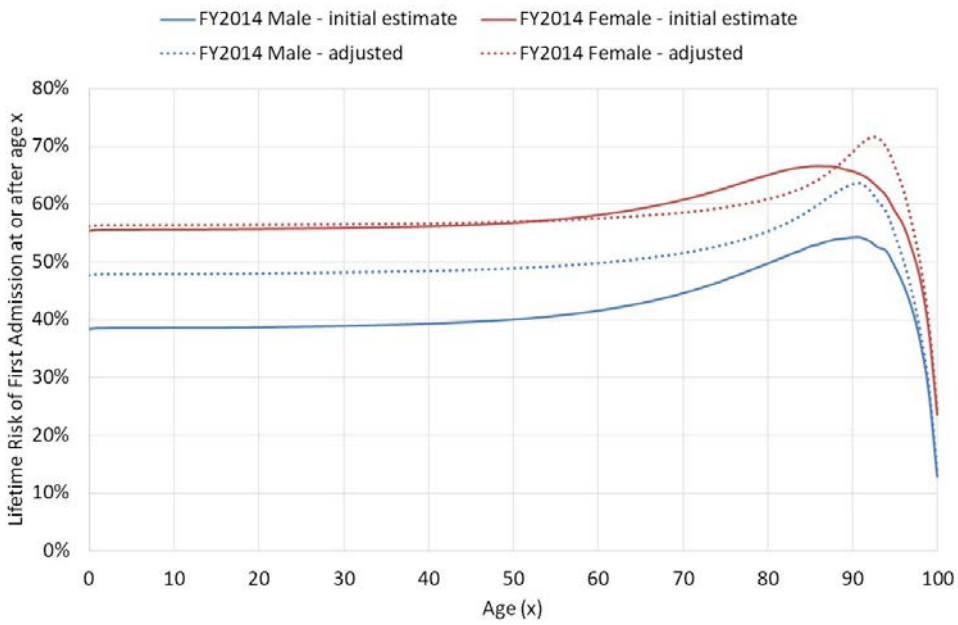

Figure 13: Lifetime risk of entry into permanent residential aged care—2014

Source: D J Cullen, Estimating Key Parameters for Long Term Care Insurance in Australia. In Proceedings of the 25th Colloquium of Superannuation Researchers, 2017.

For women, the lifetime risk at age 0 and the remaining lifetime risk at age 65 are not affected greatly and can be accurately predicted based on current experience. For men, however, the true lifetime risk at age 0 and the true remaining lifetime risk at age 65 are significantly greater than the estimates most commonly used in the literature, because those estimates have not taken significant notice of the increasing life expectancy of men.

In summary, more than half of all women (58.0%) and men (50.5%) aged 65 in 2014 can expect to enter permanent residential aged care at some time in their remaining lives. For people aged 80 in 2014, the expected lifetime risk of admission to permanent residential aged care is 61.3% for women and 55.3% for men.

Changing demand for aged care

The impacts of population ageing on the structure of demand for care are also important, though more complex. Traditionally, long-term care was provided in three forms which broadly corresponded to differing levels of acuity:

- domiciliary care—also known as community care—which mainly responded to situations where the need for care was relatively limited;
- low-level residential care, also referred to as care in a hostel; and
- high-level residential or nursing home care, which addressed cases where a high level of ongoing nursing care was required.

Residential care has historically accounted for the bulk of expenditure—public and private—on aged care (81% in 2016–17). More recently, greater emphasis has been placed on the delivery of more complex care in the home.[31]

Current arrangements

In 2016–17, the aged care sector in Australia provided services to more than 1.3 million people and generated annual revenues totalling approximately $22 billion. There were more than 366,000 paid workers in aged care and 68,000 volunteers. On 30 June 2017, the residential aged sector had assets of $45.0 billion and liabilities of $33.7 billion. The average return on equity for residential aged care providers was 18.3%.

The majority of older people who access aged care services, about 784,927 people in 2016–17, received quite low intensity levels of support in the community through the Commonwealth Home Support Programme (CHSP) which replaced the Home and Community Care Program in 2015.

My Aged Care is the Australian Government's single entry point for those seeking aged care services. Access to home support program services is coordinated through My Aged Care and Regional Assessment Services.

In general, these services—for example, meals on wheels, domestic assistance and home nursing—are delivered as individual interventions by organisations that are block funded. A total of 1621 organisations delivered home support program services across Australia in 2016–17 and these had an average expenditure of about $2600 per client per year.

A total of 97,516 people received assistance through subsidised Home Care Packages (HCP). These services differed from those provided under the CHSP as they were delivered as packages of care, usually involving case management. Home Care Packages allow people to purchase a range of services and equipment to assist them living in their own home. Each HCP has an individualised budget that allows them to decide what type of care and services they purchase and who delivers the services. They include: personal services such as help with showering, bathing, dressing and mobility; support services like help with washing, ironing, house cleaning, gardening, basic home maintenance, home modifications related to care needs, transport for shopping, doctor visits or attending social activities; plus clinical care, and care coordination and case management. To obtain access to a home care package, individuals are first assessed by an Aged Care Assessment Team (ACAT) which determines eligibility for a home care package. Once assessed as eligible for home care, an individual is placed on the 'National Prioritisation System' and assigned a package from this queue when one becomes available.

Home care packages deliver a level of care equivalent to that provided in residential care at an estimated average annual—total public and private—cost of $26,539 per client. A total of 702 organisations delivered home care packages across Australia in 2016–17.

[31] Except where otherwise indicated, the data in this section are drawn from: Aged Care Financing Authority, *Sixth Report on the Funding and Financing of the Aged Care Sector*, Canberra: Department of Health, 2018, p 72.

Figure 14 illustrates the significant increase in the number of people receiving Home Care Packages over the last decade—from 38,573 on 30 June 2007 to 71,312 on 30 June 2017.

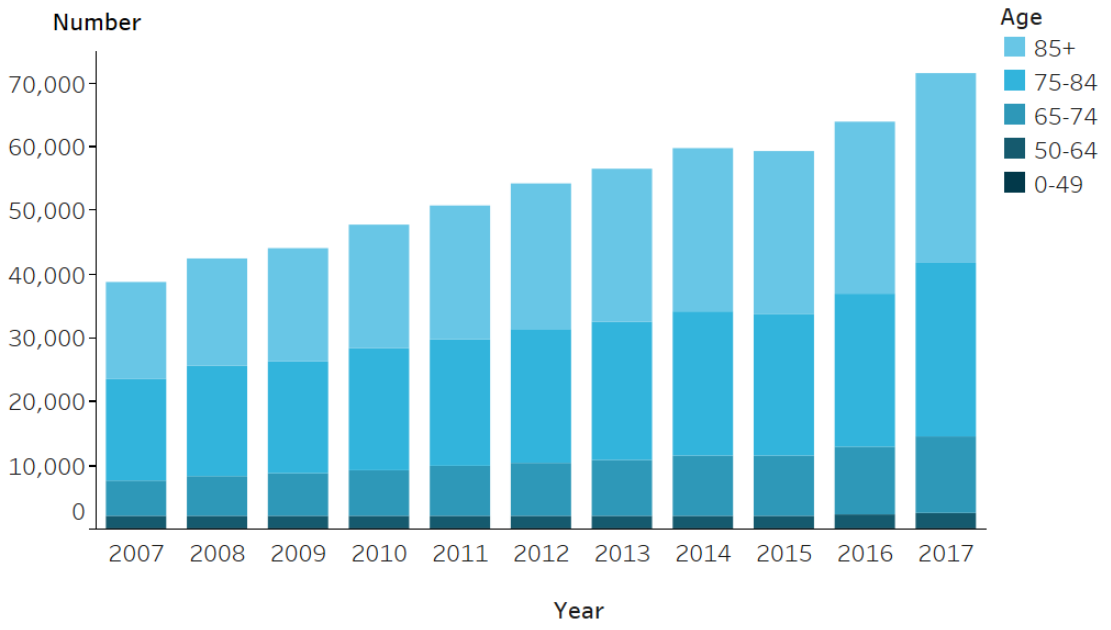

Figure 14: Home care package recipients, by age and year, 2007 to 2017

Source: AIHW, *Older Australians at a glance*. Canberra: AIHW, 2018c.

A further 239,379 people received subsidised permanent residential aged care at some stage during 2016–17 and 59,228 received subsidised respite residential aged care. Residential care provides care and support for eligible older Australians who choose not to, or are unable to live independently in their own homes. As well as accommodation, residential care services include day-to-day services such as meals, cleaning, laundry; personal care such as assistance with dressing, grooming, toileting; and 24-hour nursing care such as nursing assessment, pain management, wound and catheter care. To obtain access to residential care, individuals are first assessed by an ACAT which determines eligibility for permanent and respite residential aged care. Once assessed as eligible for residential care, an individual can seek admission to any aged care home

A total of 902 organisations delivered residential aged care services across Australia in 2016–17 at an estimated average annual—total public and private—cost of $98,386 per client.[32]

[32] The costs of delivering community care packages and residential aged care are not strictly comparable as recipients of community care packages also directly meet their daily living costs.

There is some evidence that people have higher degrees of frailty when entering permanent residential aged care. Figure 15 illustrates how average frailty on admission has increased against five measures since the commencement of the *Aged Care Act 1997:*

- RCS, which measures the frailty of residents against the Resident Classification Scale that was in use from 1997 to 2008;
- CHC, which measures the complex health care needs of residents as part of the Aged Care Funding Instrument (ACFI) that has been in place since 2008;
- BEH, which measures the extent of behaviours of concern as part of the ACFI;
- ADL, which measures the degree of assistance required with Activities of Daily Living as part of the ACFI; and
- Severity, which is composite measure developed for longitudinal analysis.

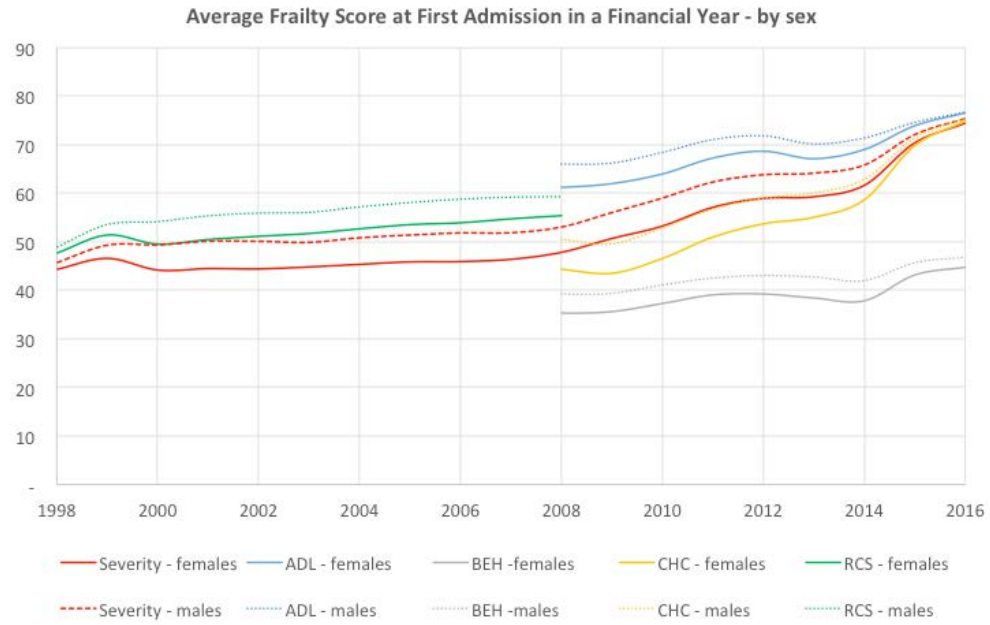

Figure 15: Average frailty on admission to permanent residential aged care, by sex, 1998 to 2016

Source: D J Cullen, Estimating Key Parameters for Long Term Care Insurance in Australia. In Proceedings of the 25th Colloquium of Superannuation Researchers, 2017.

Clearly, the average frailty level at admission of residents has increased significantly since 1998 against all measures of frailty. The most significant increases have been since 2013 and may be related to the increased availability of home care packages. It is also interesting that there is some evidence that the average frailty levels of men and women converge in all three domains.

Home support, home care packages and residential care define a notional continuum, in which care recipients move, as their ability to cope with the activities of daily living diminishes, from limited domiciliary care to more extensive community care and then to residential care, though often for very short periods of time.

Only 10% of people who first entered permanent residential aged care in 2013–14 had never received any aged care services prior to their admission. Three quarters (76%) had previously received home support, or the then equivalent home and community care services. The most common services received immediately prior to admission to permanent

residential aged care was residential respite care (39%). This was followed by home support services (36%), transition care (8.2%) and HCPs (7.0%—although this share is likely to increase as the number of HCPs increase relative to the number of residential aged care places).[33]

There were 145,000 exits from residential care in 2016–17. Fifty-two per cent of these people were leaving from respite care. The average length of stay for permanent residential aged care was almost 30 months, or about two years and six months, but about a month (25 days) for respite care. People who died in permanent residential care had the longest average length of stay at 32 months, or two years and eight months. The most common reason for leaving permanent care was death (82%), whereas the majority in respite care returned home (58%). The proportion of exits from permanent care that were due to death increased from 71% to 82% since 2007–8, and with the greater adoption of ageing-in-place facilities, the proportion that moved to another residential care facility decreased by a similar share over the same time (from 20% to 10%). Figure 16 illustrates how the pattern of discharge reasons for people in permanent residential aged care has changed over the last decade.

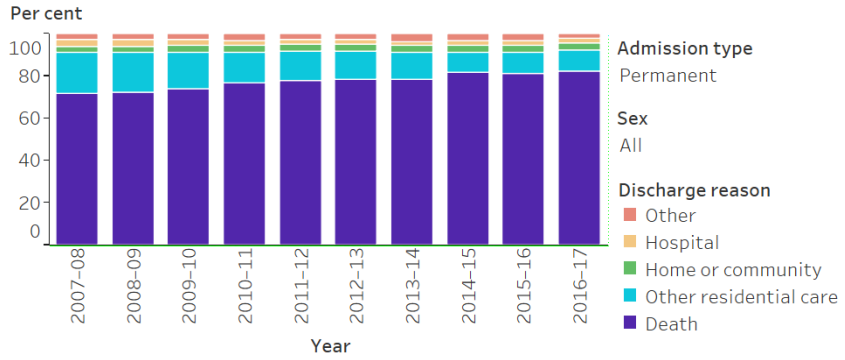

Figure 16: Exits from permanent residential aged care, by discharge reason 2008 to 2017

Source: https://www.gen-agedcaredata.gov.au/Topics/People-leaving-aged-care/Explore-people-leaving-aged-care.

Future pressures

The progression from domiciliary care to residential care reflects the underlying economics of care provision:

- Domiciliary care allows care recipients to retain the comfort of their own home but imposes transport costs on non co-resident carers and foregoes scale and scope economies in the supply of care.
- In contrast, residential care secures economies in specialised infrastructure—including accommodation that is purpose-designed in terms of mobility and safety—and in the use of specialised resources, such as nursing staff, but at the cost of

[33] AIHW, *Pathways to permanent residential aged care in Australia: a Pathways in Aged Care (PIAC) analysis of people's aged care program use before first entry to permanent residential aged care in 2013–14*, Canberra: AIHW, 2017.

standardised accommodation arrangements and loss of close contact with the external community.

As higher levels of disability require ever more use of the specialised inputs, relative to more general inputs such as conventional accommodation, it is generally cost-effective to provide the more intense levels of care in a specialised residential care environment.[34]

Whether movement along this continuum will remain the modal pattern is, however, questionable. Two somewhat conflicting factors are at work. On the one hand, smaller differences in life expectancy between men and women may reduce the demand for residential care as they translate into fewer years of widowhood, since loss of a family care-giver often precipitates a need for residential care.[35]

The diminished gap between male and female life expectancy translates into a changing male-to-female ratio in the older population. For the population aged 65 years and over, there were 72 males per 100 females in 1978. By 2018, the ratio had increased to 88 males per 100 females. The ratio is expected to decline slightly over the next four decades to 86 males per 100 females in 2058. However, the difference in life expectancy for the very old population remains significant, although decreasing. For the population aged 85 years and over, there were 40 males per 100 females in 1978. By 2018, the ratio had increased to 70 males per 100 females. The ratio is expected to increase to 89 males per 100 females in 2031 and then decline slightly to 83 males per 100 females in 2058.

This effect, which is partially offset by the increase in the number of people who have never married[36] or who are divorced or separated, may be accentuated by improved health among the 'younger elderly'[37], as well as by the likelihood that baby boomers will have a strong aversion to institutionalised living and forms of care. On the other hand, the growth in numbers in the very elderly age brackets is likely to be associated with increased numbers of people living with dementia, extreme fragility and other serious impairments to the capacity to perform daily living activities, all of which usually require some form of intensive residential care.[38]

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[34] In recent years, some high-level care has been provided in the community. In general, the delivery of this level of care in the community is made cost effective by the presence of an informal (and unpaid) carer. A strict accounting for the cost of this case option should also, of course, take into account any Carer Allowance or Care Payment received by the informal carer and any foregone income to that carer, as will the cost of any respite care received by the care recipient.

[35] D Lakdawalla and T Philipson, 'The rise in old-age longevity and the market for long-term care (2002) 92 *American Economy Review,* 295–306.
D Lakdawalla and R Schoeni, 'Is nursing home demand affected by the decline in age difference between spouses?' (2003) 8 *Demographic Research, p* 279–304.
M B Thomeer, S Mudrazija and J L Angel, 'Relationship Status and Long-Term Care Facility Use in Later Life' (2015) 71, *The journals of gerontology. Series B, Psychological sciences and social sciences*, 711–23.

[36] In 2017, Australia's crude marriage rate was 4.6 marriages per 1000 persons. This compared with 4.9 marriages per 1,000 persons in 2016, 5.5 in 2007 and 5.8 in 1997. ABS, *3310.0—Marriages and Divorces, Australia, 2017*. Canberra: ABS, 2017.

[37] Today, the 'younger elderly' or 'younger old' are perhaps most commonly defined as those between 65 and 74, with the 'older elderly' being older than this: see, for example, Alexander, et al. (2001). However, viewed more broadly, 'younger old' refers to people who once were considered old, but who broadly remain as a group much more like non-old people of previous generations. As a result, the age group of the younger old has risen over time and likely will continue to do so.

[38] The prevalence of dementia, for example, appears to double every five years after age 65. As a result, if current age-specific dementia rates remain unchanged, the prevalence of dementia will double by 2030.
See: A S Burns, N Purandares and S Craig, *Mental Health in Older People in Practice*. London: Royal Society of Medicine Press, 2002.

More generally, while there will be a significant increase in the average number of years a person lives in the age brackets of 65-plus years, it will continue to be the case that ageing will bring with it senescence (the gradual deterioration of function) and, consequently, molecular and cellular pathogenesis that degrades the functional integrity and homeostasis (the tendency towards a relatively stable equilibrium between interdependent elements, especially as maintained by physiological processes) of the body.[39] These normal processes of pathogenesis will be accentuated by the rising population incidence of chronic conditions such as obesity, which appear more likely to give rise to increased morbidity in the older population than to increased mortality.[40] These factors, especially in the 'older old', will translate into a requirement for substantial, ongoing and continuous assistance, usually involving residential care.

The overall result seems likely to be to create a growing need for two types of care. The first is in a person's home, including in congregated living arrangements such as retirement villages or 'life care' communities, that seek to integrate home and care. This type of care, which corresponds to the various forms of community care, should suffice for the growing numbers who have a reasonable, even if incomplete, ability to carry out basic daily activities, especially in circumstances where they also have spousal or family assistance. The strong preference of the baby boomer generation for independent living is likely to make this kind of domiciliary care the option of choice for large sections of the aged population.

The second is care in residential facilities that provide for those who have little or very little ability to undertake basic daily living activities and who need a high-level of clinical support—complex health care—or who need to be kept safe through close support, such as those with ambulant dementia). Demand for this kind of care and high-level care at home with a co-located informal carer will rise with a continued increase in the incidence of chronic conditions such as Alzheimer's disease, severe arthritis and serious visual and hearing impairments that greatly reduce, if they do not eliminate, the ability to live without continuous assistance.

Conversely, demand for low-level care, which is intermediate between home care and ongoing close support, may decline as a proportion of total long-term care as the baby boomer generation moves into old age. Low-level care facilities will, of course, remain important, by virtue, at least, of the scale of the increase in the older population, ensuring the continuation of substantial demand for residential facilities oriented to low—but not insignificant—levels of disability. Moreover, the demand for intermittent residential care services, again oriented to relatively low-levels of disability, is also likely to increase, probably substantially.[41] This kind of care will, in many instances, be provided in a low-level care setting. But while these factors will ensure that low-level residential care remains significant in absolute terms, its weight in the overall structure of care provided seems set to diminish.

As a result, demand for care is likely to shift from being a continuum that moves from home, into low-level residential care and then, often for only a short time, into high-level residential

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[39] See, for example, US National Institute on Aging, National Institutes of Health, *Aging Under the Microscope: A Biological Quest.* NIH publication No. 02–2756, 2002.

[40] See, for example, S L Reynolds, Y Saito and E M Crimmins, 'The impact of obesity on active life expectancy in older American men and women' (2005) 45 *Gerontologist*, 438–444.

[41] Older people living in the community at times require additional assistance, including residential care, for short periods, (for example, so as to allow carers to take holidays or otherwise temporarily reduce their load). Providing more services such as respite care (i.e. temporary accommodation in a residential care facility aimed at relieving the carer) will allow more older people to stay in, or return to, the community after a period of more intense care. As a result, provision of facilities for respite care is an important complementary element in a strategy aimed at facilitating primary reliance on community care.

care, towards a pattern concentrated at the two ends of the spectrum. People will be able to receive the care that they need in their home for a longer period of time and to a greater intensity. Movement into residential aged care will be delayed and only occur at higher levels of frailty than currently.

Meanwhile, the temporal structure of care—i.e. the distribution of durations of care in the recipient population—is likely to change. Thus, long durations are likely to become more common in high-level care, as that care becomes less of an immediate antecedent to death. Already, at all levels of frailty, residents with dementia remain in residential care longer than other residents.[42] Figure 17 shows the proportion of people still in care over time by dementia status (diagnosis of dementia recorded within first 28 days of admission). It shows that half the people entering without a dementia diagnosis died or left care within one year and 10 months; this compares with around two years and one month for people with an initial diagnosis of dementia. People with dementia are less likely to die or leave care in the initial period after entry, however in the longer-term, proportionally fewer people with dementia have longer lengths of stays when compared with those that do not.

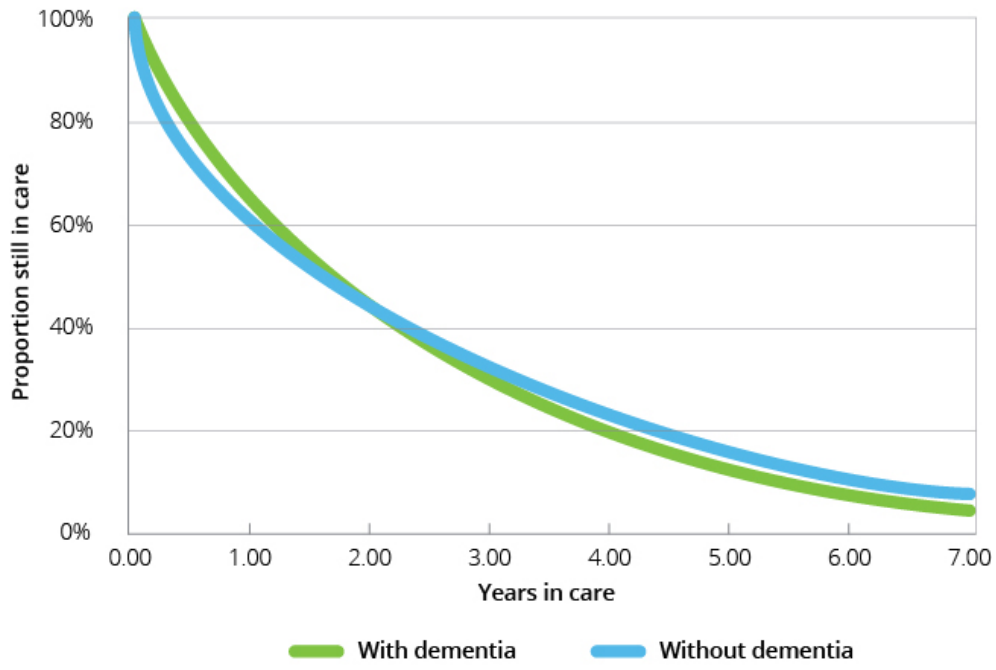

Figure 17: Proportion of residents in care over time, with and without dementia

Source: Aged Care Financing Authority, Sixth Report on the Funding and Financing of the Aged Care Sector, Canberra: Department of Health, 2018, p 72.

The impact of dementia on length of stay is more emphatic than is apparent in Figure 17. This is because there is a high level of correlation among aged care residents between complex dementia and complex health care needs. When needs for assistance with daily activities, complex health care needs and dementia are statistically separated, it is clear that while an increase in frailty due to either of the first two factors decreases the average length of stay of a resident, an increase in frailty due to dementia on its own, tends to increase the average length of stay of a resident.[43]

[42] R Lindsay, G Griffiths and V Boero Rodrigues, *Aged Care Data: Statistical Analysis by ABARE*. eReport 03.24. Canberra: Australian Bureau of Agricultural and Resource Economics, 2003.

[43] D J Cullen, 'Estimating Key Parameters for Long Term Care Insurance in Australia' (2017) Centre of Excellence in Population Ageing Research. https://www.cepar.edu.au/news-events/events/25th-colloquium-superannuation-researchers.

Short stays will also remain common and may become more so because of the greater prevalence of intermittent care and many admissions resulting from acute events.
A comprehensive analysis of the length of stay of people admitted to permanent residential aged care between 2000 and 2016 found that the average total completed length of stay was 890 days (2.4 years).[44] However, 50% of admissions remained for less than 598 days (1.6 years) Twenty-five per cent were for less than 175 days (6 months) and 10% were for less than 43 days. On the other hand, 25% of final discharges occurred after 1311 days (3.6 years) and 10% of final discharges occurred after 2167 days (5.9 years).

In general, there are a significant number of people who enter residential aged care very late in life and remain for a very short period of time. A quarter of all admissions are for less than six months and one in 10 residents stays for little more than a month. These residents often have very high complex health care needs and enter residential aged care to receive the nursing care and significant assistance with activities of daily living that they need towards the end of their life, often after having suffered a significant decline in functioning. At the same time, a quarter of residents stay for more than three and a-half years and one in 10 residents stay in residential aged care for six years or longer. These people often have dementia but may not need significant levels of complex health care. As a result, the distribution of durations of residential care, which already is bimodal[45], may become even more so, with a bunching of durations at the relatively short and relatively long ends of the duration spectrum. The aged care system will need to continue to be sufficiently flexible to cater for both these populations.

A greater need for preventative and restorative care

The prevention of diseases and disabilities will be crucial in dealing with their increasing incidence. The promotion of good health earlier in life will be essential in preventing or reducing dependency in later years. Particularly helpful strategies include discouraging smoking and the overuse of alcohol and other drugs, preventing falls, reducing weight and promoting physical exercise, a healthy diet, dental care and eye health, plus managing stress. An increased emphasis on restorative care and rehabilitation after an accident, injury or medical treatment will also assist in decreasing and delaying demand for aged care. Adequate rehabilitation is particularly important after incidents that restrict movement, such as hip fractures and strokes. Studies have shown that this approach leads to fewer re-admissions to hospital and less likelihood of moving into permanent residential aged care.[46]

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[44] The analysis in this section is drawn from Cullen (2017). See also Cullen (2007) and Cullen (2011). The analysis in this section is restricted to permanent residential aged care. Total completed length of stay treats a series of stays in different aged care facilities as a single admission.

[45] H Xie, T J Chaussalet and P H Millard (2005). A continuous time Markov model for the length of stay of elderly people in institutional long-term care (2005) 168. *Journal of the Royal Statistical Society,* 51–61.

[46] L Giles, J Halbert, J Stepien-Hulleman, S Eckermann, S Masters, J Prendergast, C Whitehead, F Cheney and M Crotty, *National Evaluation of the Transition Care Program*. Canberra: Department of Health, 2008.

There is also potential for reducing the pressure on the aged care system by the early detection and treatment of potentially long-term disorders such as diabetes, hypertension, osteoporosis, depression, Parkinson's disease, Alzheimer's disease, hearing impairment and vision loss.[47] Incontinence, and in particular double incontinence, is also currently a significant risk factor in admission to residential aged care.[48] General practitioners and allied health professionals will be key here.

A recent review has also shown that, aside from exercise, intervention programs that work together with a person with dementia and their carer to manage issues and promote independence are most effective in delaying functional decline in people with dementia. These interventions involve providing strategies and structured activities for the person with dementia and their carer and collaborating with both to help manage symptoms. Interventions shown to be effective have some common characteristics. They tend to be provided in the home environment and involve education, caregiver support, environmental assessment, individualised problem-solving and the use of active learning strategies for the carer, such as modelling, role play and brainstorming.[49]

The potential for people to lead longer and healthier lives will raise their expectations about the lifestyle they want as they age. Older people are likely to continue to seek to stay independent, retain control over personal matters and maintain a high quality of life. They will therefore want the opportunity to continue to contribute to and participate in society.

They will also be likely to expect to be able to access services that support independence and help restore function after illness or injury. Older people who are recovering from surgery or other acute care need more time for recovery and rehabilitation. Without the necessary services, older people's long-term care needs cannot be appropriately assessed and they are more likely to enter residential care.

The demand for intermittent care services is also likely to increase. Older people living in the community sometimes require additional assistance, including residential care, for short periods. Providing more services such as respite care, will allow more older people to stay in, or return to, the community, after a period of more intense care.

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47 See, for example: J J Cerqueira, D A S Compston, R Geraldes, M M Rosa, K Schmierer, A Thompson, M Tinelli and J Palace (2018). Time matters in multiple sclerosis: can early treatment and long-term follow-up ensure everyone benefits from the latest advances in multiple sclerosis? (2018) 89 *Journal of Neurological Psychiatry* 844–850.
See also: M Gillick, *The Denial of Aging: Perpetual Youth, Eternal Life, and Other Dangerous Fantasies.* Cambridge, MA: Harvard University Press, 2006, pp. 124–140.

48 ICI (International Consultation on Incontinence), *Incontinence*: 5th edition. Paris: ICI, 2013.
Pearson J. *Incidence of incontinence as a factor in admission to aged care homes.* Canberra: Department of Health and Ageing, 2003.
AIHW, *Australia's Health 2016*. Chapter 3.16. Canberra: AIHW, 2016.

49 K Laver, S Dyer, C Whitehead, L Clemson and M Crotty (2016). Interventions to delay functional decline in people with dementia: a systematic review of systematic reviews (2016) 6 *British Medical Journal Open* doi: 10.1136/bmjopen-2015–010767

Conclusion

These changes in the level, structure and duration of demand for aged care will impose significant adjustment pressures on the aged care sector. The total supply of care will need to increase, with large absolute rises being required in the level of provision in each part of the aged care spectrum. At the same time, the structure of supply will need to shift, with larger increases in community care on the one hand and high-level care residential care on the other. Supply side adjustments will also be impelled by changes in the costs of the different types of aged care.

Community care often relies upon the presence of a co-resident informal carer.[50] Here somewhat offsetting factors seem likely to operate. On the one hand, a diminished gap in life expectancy between men and women is likely to reduce the number of years of widowhood, effectively increasing the supply of co-resident care. On the other hand, the increased numbers who have never married, or who are divorced or separated, will at least partially offset that increase in supply. Additionally, the greater scarcity of working age people in the future population will increase the opportunity cost of the choice by working age people to engage in informal caring instead of working, reducing the supply of informal care services. Finally, low birth rates in recent decades mean that the average older person will have fewer children from whom informal care can be sought. As a result and on balance, the supply of informal care is likely to diminish relative to the size of the older population.[51]

Given that demand for community care is likely to increase strongly, reduced supply of informal carers could impose substantial costs on the community care sector. Already the opportunity cost of informal care, measured as the reduction in paid employment due to caring, is estimated to be about 0.6% of gross domestic product (GDP)—that is, about 9.9% of the contribution to GDP of formal health care. The cost of replacing the work done by informal carers, where their services are no longer available, is much higher. It has been estimated that if all hours of informal care were replaced with services purchased from formal care providers and provided in the home, the replacement value would be about 3.8% of GDP—about 60.0% of the contribution to GDP of other formal health care.[52]

Another area where expectations may change over time is the role and availability of community carers. Changes in family structure and in the participation of women in the workforce will inevitably affect the aged care system. The majority of carers of older people are women of working age and more than half of all primary carers are in the workforce. The changing working patterns of older people will also have implications for the future availability of family carers. More flexible support arrangements will therefore be needed to suit differing work patterns and care arrangements over time.

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50 When assessed by Aged Care Assessment Teams, older people living alone are more likely to be recommended for residential care than those living with a spouse or other informal carer. There is also evidence that older people who have access to informal care can remain living in the community for longer and enter residential care at a higher level of frailty.
See, for example, Lincoln Gerontology Centre, *Aged Care Assessment Program National Minimum Data Set Report July 2000–June 2001*. Melbourne: La Trobe University, 2002.

51 Projections of the availability of informal care are presented in: AIHW, Carers in Australia: assisting frail older people and people with a disability. Canberra: AIHW, 2004.
See also:
R Percival and S Kelly *Who's going to care? Informal care and an ageing population.* University of Canberra: National Centre for Social and Economic Modelling, 2004.

52 Deloitte Access Economics and Carers Australia,*The economic value of informal care in 2015*. Canberra: Carers Australia, 2015. (Note, the Access Economics analysis refers to the 'Health and Social Work Sector' which is a sector in the International Standard Industrial Classification of All Economic Activities Revision 3 that corresponds to the 'Health Care and Social Assistance Sector' in the Australian and New Zealand Standard Industrial Classification.)

Care in the home is often less costly for the taxpayer and support to help carers maintain their caring role will remain a key element of the aged care system. This support may include income support, financial support to offset the costs of caring, services to help share the burden, information about what help is available and where to get it, and pre-planned and emergency respite care.

The supply of the formal aged care workforce will also face considerable pressure as the share of the population requiring care increases.[53] In effect, population ageing seems likely to create an increased demand for hospital care, with the sheer weight of the numbers moving into the higher age brackets more than offsetting possible reductions in the number of annual hospital bed-days required for each person in each age class.[54] The resulting growth in total hospital bed-days will require a corresponding increase in the medical labour force, forcing the aged care sector to compete for nurses and other specialised labour inputs in a tight labour market. The roll-out of the NDIS and the almost doubling in the disability services workforce over the next three years will also increase competition for care workers.

A recent study found that 'both the retention of current workers and the attraction of new workers to the [aged care] sector seem to be working well with no major bottlenecks or hurdles that the labour market could not sort out by itself and without intervention'.[55] Another recent study found that pay is important but not as influential as other factors such as job satisfaction, security, a positive work environment and opportunities for career progression in determining whether an aged care workers will remain in the sector.[56] However, pay may be more important in whether a worker will choose aged care over other occupations in the first place. There is some evidence that there are skill shortages in the aged care sector and that the relatively lower wages generally paid in the sector is a major contributor to these shortages.[57] Moreover, there is continuing evidence that this low pay continues in part because of the devaluation of aged care as 'women's work'.[58]

Immigration may also offer some assistance in addressing skill shortages in aged care workforce. However, in addressing Australia's future aged care workforce needs, it will be important to remember that demand is not seasonal and is not subject to changes due to economic conditions. Its growth is primarily driven by demographics. It is therefore better suited to being staffed by a stable, long-term workforce than a temporary migrant workforce with high turnover or workers staying for long periods but with limited rights. For example, Callister et al have argued that 'Aged-care clients are a vulnerable group and if they are

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[53] R I Stone and J M Wiener, Who Will Care For Us? Addressing the Long-Term Care Workforce Crisis. The Urban Institute, 2001.
F Colombo, *Help Wanted?: Providing and Paying for Long-Term Care*. OECD Health Policy Studies, OECD Publishing, Paris, 2011.

[54] While 2005–2050 growth in the number of annual public hospital bed-days is expected to be slightly negative for those under the age of 50, that number is expected to rise by 150% for the population aged 60 and over, and by 320% for the population aged 85 and over. As a result, the share of hospital bed-days accounted for by the population aged 65 and over is projected to increase from 47% in 2005 to 67% in 2050.
D J Schofield and A Earnest, 'Demographic change and the future demand for public hospital care in Australia 2005 to 2050' (2006) 30 *Aust Health Rev*. 507–15.

[55] K Mavromaras, G Knight, L Isherwood, A Crettenden, J Flavel, T Karmel, M Moskos, L Smith, H Walton and Z Wei, *The Aged Care Workforce 2016*. Canberra: Australian Government Department of Health, 2017.

[56] K Radford, *Two sides of the same coin? An investigation into factors influencing employees' intentions to stay and leave* (2013) PhD Thesis. Griffith University.

[57] K Mavromaras, P Sloane and Z Wei, *Skill Shortages in the Australian Aged Care Sector: The Role of Low Wages*, International Conference on Public Policy (ICPP-2017) annual conference presentation (30 Jun 2017) National University of Singapore, 2017.

[58] E Palmer and J Eveline, 'Sustaining Low Pay in Aged Care Work' (2012) 19 *Gender, Work & Organization*, 254–275. doi:10.1111/j.1468–0432.2010.00512.x.

looked after by another vulnerable group, without the protection of permanent residency or citizenship, this may impact on quality of care.'[59]

Significant innovations in the way in which services are delivered will also be needed if these structural pressures are to be dealt with efficiently. These innovations will affect both the venues in which care services are provided—for example, forms of congregated, but not institutional living are likely to be important in reconciling the need for care with the baby boomers' demand for independent living—and the manner of service delivery, such as the part that information technology will play. Widespread diffusion of these innovations will need to be accompanied by shifts in the composition of supply, and most notably, by a re-weighting of supply towards care in the community on the one hand, and the more intensive forms of 'high-level care' on the other. Effecting these changes will require significant flexibility on the part of the aged care sector.

Australia's aged care system will therefore need to be able to provide a wide range of care options. It will also need to continue to include services to assess care needs, arrange and coordinate care services, and provide information on the care options that are available. The system will also need to be able to respond flexibly to the changing needs of older people over time. A system that organises services around the needs of an individual is better able to adjust to changing needs than a system organised around types of care. The development of community care packages and 'ageing in place' in residential care are recent examples of initiatives aimed at improving flexibility. The aged care system must continue to have good linkages with more specialised services that are not needed by everyone. The main issue here is to assist older people who have been assessed as needing specialised care—for example, mental health or medical services—to make an easy transition to and from that care.

In short, demographic, social and economic pressures will impose a large and continuing burden for adjustment on the aged care sector. While the absolute scale of service provision will need to increase sharply, the nature and composition of supply will also need to change and far-reaching innovation will be required if community expectations are to be met.

[59] P Callister, R Didham and J Badkar, *Ageing New Zealand: The Growing Reliance on Migrant Caregivers, a 2014 Update.* Working paper, December, Callister & Associates, Wellington New Zealand, 2014.