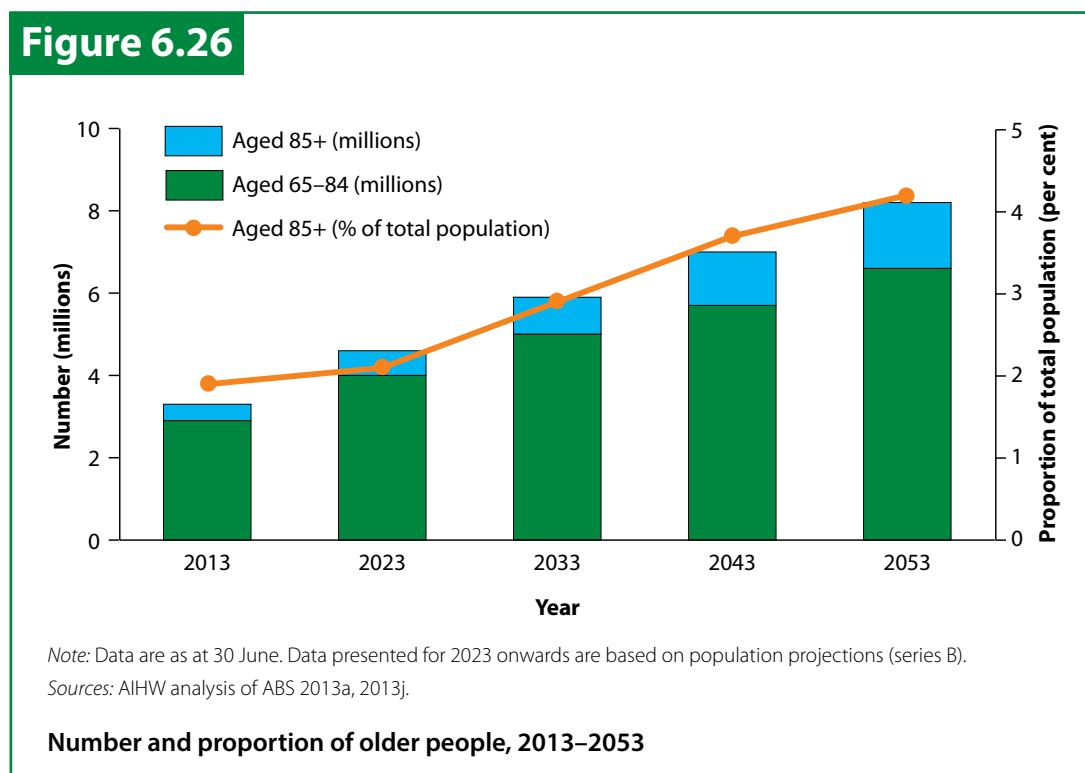


6.9 Ageing and the health system: challenges, opportunities and adaptations

Older Australians are accounting for an increasing share of the population (see Chapter 1 'Who we are'). In 2013, 14% of the population (3.3 million people) were aged 65 and over and 1.9% were aged 85 and over (439,600 people). By 2053, based on Australian Bureau of Statistics (ABS) medium-level growth assumptions, 21% of the population will be aged 65 and over (8.3 million people) and 4.2% aged 85 and over (1.6 million people) (Figure 6.26).



As well, health and social trends are changing the circumstances of our older population, redefining what it means to be 'old' (see Box 6.5).

There is concern that this ageing of the population will put unsustainable pressure on public spending, with particular concerns about rising health costs and the ability of the health system to serve the increasing numbers of older people needing care. These issues are discussed at some length in this article (see also Chapter 2 'How much does Australia spend on health care?').

Undoubtedly, ageing will present challenges to the health-care system, given the larger number of older people, the fact that many health conditions and associated disability become more common with age, and that older people are higher users of health services. However, the majority of Australians consider themselves to be in good health, and manage to live independently—with or without community-based supports—until their final days. Further, good health is itself a resource,

enabling older people to contribute socially, culturally and economically to the community—and evidence suggests that many are.

This article analyses the key areas of challenge for the health system as it adapts to an ageing population. It then sets out ways Australia's health system is adjusting, and can continue to adapt.

Box 6.5

How do we define 'old'?

For population measurement purposes, 'old' is conventionally defined as people aged 65 and over, based on the original qualifying age for the Age Pension. While this article also uses this convention, it is important to stress that at the individual level, a person does not necessarily become frail or 'dependent' at age 65 (or at any other particular age).

Like the broader Australian population, the group of 'older people' is far from uniform. The diversity of the older Australian population, combined with ongoing changes in the health, economic and social circumstances faced by all Australians, results in a very complex range of differing circumstances and needs as we grow older. Where possible in this article, data referring to the 65-and-over age group are split into subcategories (for example, 65–74, 75–84 and 85+) since health, and the need for health services, often varies with age.

Ageing and the health system: key challenges

The ageing of the population will have far-reaching implications for society. Direct challenges for the health system will include changing health profiles, increased demand for health service use, and rising health costs.

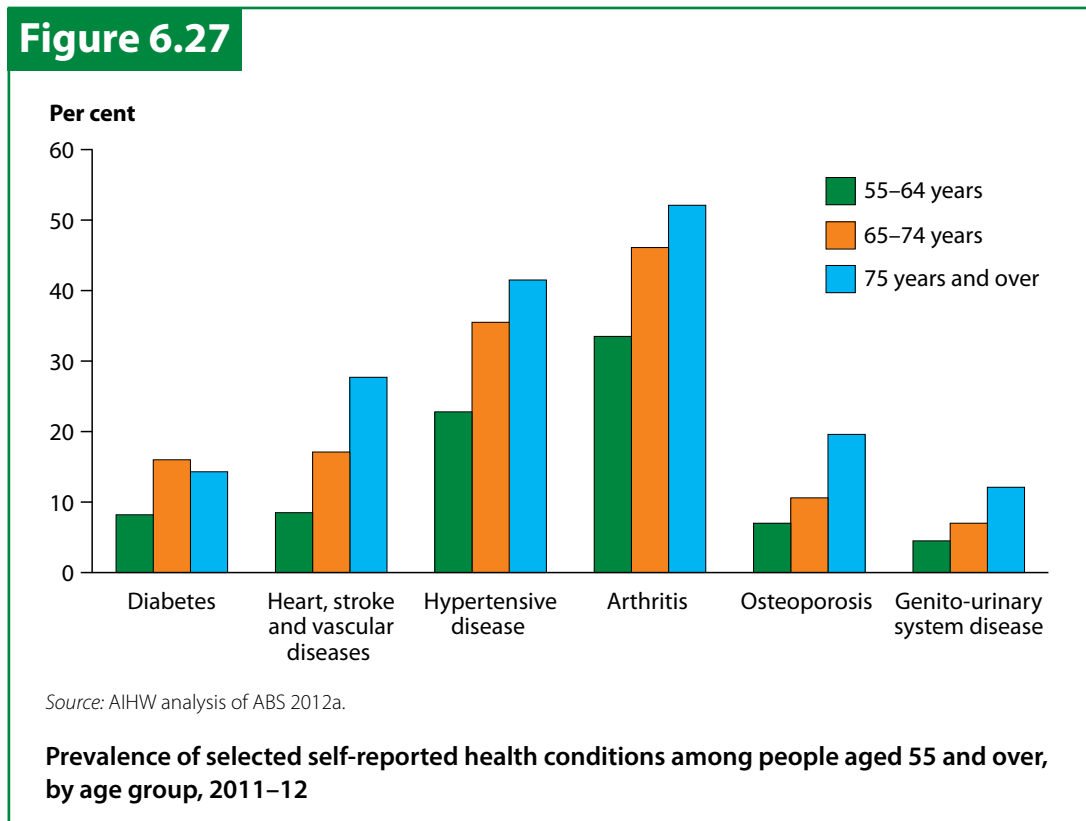
The challenges are twofold: first, the rapidly growing group of 'old old' (85 and over) people who have a range of typical age-related health problems (for example, arthritis, dementia and cancer); and secondly, the younger cohort entering the '65 and over' age bracket with a larger burden of lifestyle-related diseases (for example, type 2 diabetes) than previous generations.

Further, social changes among the next generation of older people—such as greater understanding and awareness of health issues and greater expectations of health services—pose additional challenges. These challenges may influence future models of health-care delivery and engagement.


Changing health profiles

A key challenge for the health system will be how to best meet the health needs of an ageing population and, in particular, how to manage the increasing impact of chronic disease.

The prevalence of many health conditions is higher in older age groups (Figure 6.27). The 2011–12 Australian Health Survey (AHS) shows that, among older Australians living in households, the most common long-term health conditions (excluding short- and long-sightedness) are arthritis (affecting 49% of those aged 65 and over), hypertensive disease (38%) and hearing loss (complete or partial) (35%) (AIHW analysis of ABS 2012a). Just over 1 in 5 older people (22%) reported having heart, stroke and vascular diseases, 15% had diabetes, and 7% had cancer. Age-related vision problems that are likely to be disabling include cataracts (affecting 10% of those aged 65 and over), glaucoma (3%), macular degeneration (5%) and blindness (2%).



Dementia is a significant health problem among older Australians—an estimated 332,000 Australians had dementia in 2014, of whom 93% were aged 65 and over. Based on projections of population growth and ageing, the number of people with dementia is estimated to reach around 900,000 by 2050 (AIHW 2012). (See Chapter 6 ‘Dementia, dementia treatment and the future’ for more information.)



Older people are also more likely than younger people to have multiple long-term health conditions. For example, in 2009, about 49% of people aged 65–74 had 5 or more long-term health conditions, increasing to 70% of those aged 85 and over (ABS 2010).

Falls are common among older people and often result in fractures or other serious injuries (Bradley & AIHW 2013). In 2009–10, there were an estimated 83,800 hospitalisations due to falls in people aged 65 and over (accounting for 1 in 10 days spent in hospital by older people) (Bradley & AIHW 2013). Older women sustained a greater number of hospitalised fall injuries than men (constituting 69% of cases in 2009–10), and the rate of fall injuries increased with age in both sexes.

Despite the increasing prevalence of many conditions with age, most older people consider themselves to be in good health. The 2011–12 AHS shows that, of older people living in households, 76% of those aged 65–74 and 67% of those aged 75 and over rated their health as excellent, very good, or good (ABS 2013c). In comparison, in the 2004–05 National Health Survey, 69% of people aged 65–74, and 65% of those aged 75 and over rated their health as good, very good, or excellent (ABS 2006). Research indicates that the simple measure of self-rated health has complex determinants, but is consistently associated with major health outcomes such as physical and functional health status, health service use, stroke and death (French et al. 2012).

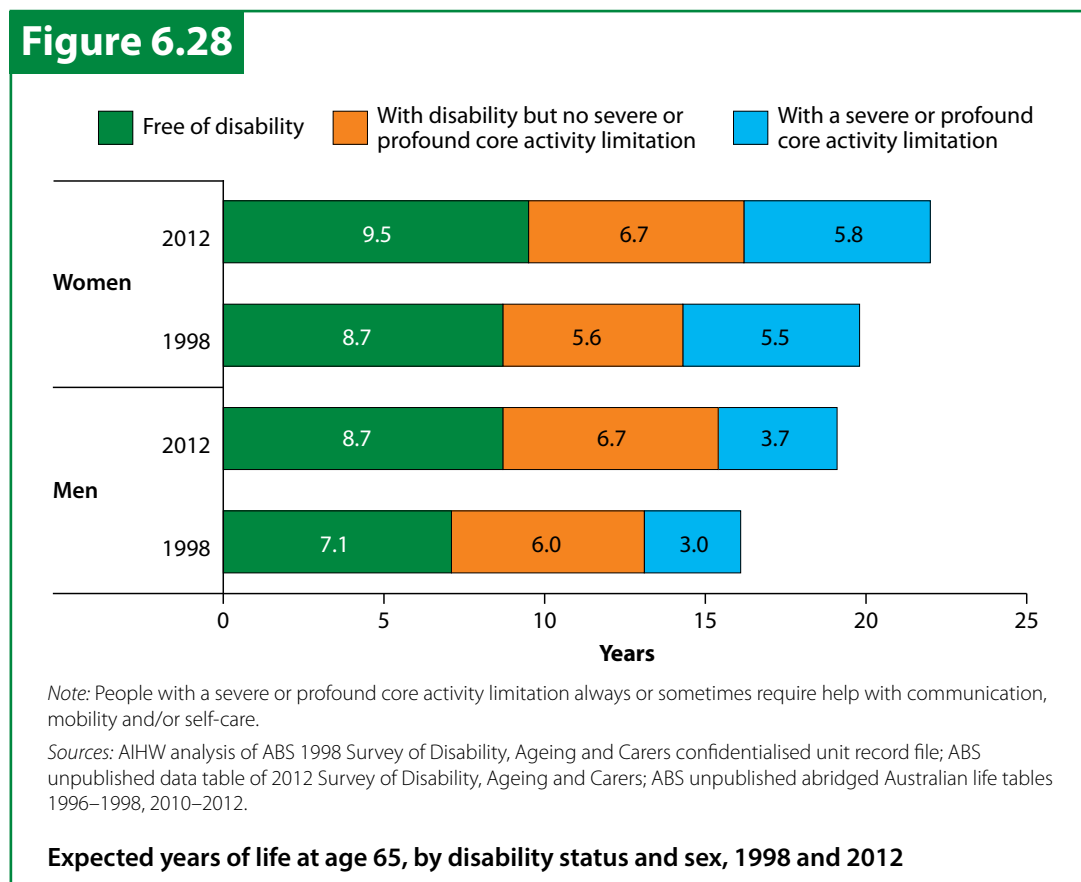
Broader population trends in chronic disease are also important in the context of the health of the future older population. These trends are mixed. On the positive side, there has been a substantial reduction in deaths due to chronic disease in Australia (see Chapter 4 'Chronic disease—Australia's biggest health challenge'). For example, since 1980, mortality due to coronary heart disease and stroke has declined by 73% and 69% respectively. On the negative side, chronic diseases have been the leading causes of illness and death in Australia for many decades, and risk factors for these conditions have become more common. For example, in 2011–12, 63% of Australian adults (aged 18 and over) were overweight or obese, compared with 56% in 1995 (ABS 2013c). As such, the future older population may have a larger burden of lifestyle-related diseases than in the past.

Disability and disability-free life expectancy

Population ageing is expected to result in an increase in the absolute number of people with disability, simply because there are more people in the older age groups and disability becomes more common with age. Data from the ABS 2012 Survey of Disability, Ageing and Carers (SDAC) indicate that just over half (53%, or 1.7 million people) of Australians aged 65 and over had disability; this compares with 16% of those aged 25–64 and 7% of those aged under 25 (AIHW analysis of ABS 2013d).

In 2012, 1 in 5 older Australians (20%, or nearly 663,000 people) had severe or profound core activity limitation, meaning that they sometimes or always needed assistance with at least 1 core activity (self-care, mobility or communication), with higher rates among women than men (ABS 2013d).

However, an important question is whether, as overall life expectancy has lengthened, the number of years lived with disability has fallen or risen. In 2012, women aged 65 could expect to live an additional 22.0 years of life and men an additional 19.1 years, compared with 19.8 and 16.1 in 1998 respectively (Figure 6.28). In 2012, older women could expect to live 9.5 years free of disability, 6.7 years with disability but no severe or profound core activity limitation, and 5.8 years with a severe or profound core activity limitation (8.7, 6.7 and 3.7 years for men).



AIHW analysis indicates that, between 1998 and 2012, between 37% (females) and 54% (males) of the gains in life expectancy were years free of disability, and between 76% (males) and 89% (females) of the gains were years without severe or profound core activity limitation. This suggests that not only are people living longer, but that older people, on average, gained more years of life without severe or profound limitation than with it.

More detailed analyses of changes in life expectancy and disability in Australia will be published by the AIHW in the second half of 2014.

Increasing demand for health services

Demand for health services is affected by many factors, but older people are generally higher users of health services than younger people, and so demand is expected to increase with the ageing population.

Older people are more likely to visit health professionals than younger people. According to the 2011–12 AHS, 98% of people aged 65 and over had consulted at least 1 health professional in the previous 12 months, compared with 90% of those aged under 65 (ABS 2013b). Among people aged 65 and over, 96% had consulted a GP in the previous 12 months, including 38% who had done so in the previous 2 weeks compared with 82% and 18% of those aged under 65, respectively.

In terms of other health services, 57% of older people had consulted a specialist within the last 12 months (compared with 28% of people aged under 65), and around 20% had been admitted to hospital as an inpatient (compared with 11% of younger people) (AIHW analysis of ABS 2013b).

The AHS does not include information about people living in residential aged care. Administrative data provided to the AIHW National Aged Care Data Clearinghouse show that, at 30 June 2013, there were nearly 169,000 people living in permanent residential aged care. Between 2003 and 2013, the number of permanent residents in aged care rose by just over 20%. Within this total increase, the number of residents aged 85 and over rose by 37%, with this group accounting for just over 58% of the total population of permanent aged care residents (up from around 51% in 2003). These rises reflect growth in the older population, as well as associated increases in government-subsidised residential places (which are set to increase further following recent aged care reforms).

Most permanent residents in aged care facilities are highly dependent, with 82% receiving high-level care at 30 June 2013. Information about the health conditions of residents is collected as part of an assessment of their care needs. Up to 3 mental and behavioural disorders (such as dementia) can be recorded, as can up to 3 other medical conditions that impact on care needs. Circulatory disease was the most common main (first listed) condition (22%) followed by musculoskeletal conditions (19%) and endocrine disease (including diabetes) (8%). Fifty-two per cent of permanent residents had diagnosed dementia. About half of all permanent aged care residents had symptoms of depression (52% at 30 June 2012), and about 45% of people who were admitted for the first time to residential aged care from 2008 to 2012 had symptoms of depression (see AIHW 2013b).

Higher use of health services by older people also has implications for the health workforce. The health labour force in Australia is large and diverse, covering many occupations, ranging from highly qualified professionals to support staff and volunteers. An ageing population will require an adequate health workforce—in terms of numbers, distribution, and skill set—to meet changing needs and increased demand (Scott 2009). Future shortages of appropriately skilled workers are also expected to be a particular challenge in the aged care sector (see Productivity Commission 2011).

Funding rising health costs

With older people being high users of the health system, and health costs being higher in older age groups, population ageing has led some to express concerns about unsustainable pressure on expenditure within the health system. The relationship between ageing and health costs is complex, however, and there is considerable debate about the extent to which current and projected growth in health expenditure should be attributed to population ageing (see Chapter 2 'How much does Australia spend on health care?' for details about these issues). Notwithstanding this, there is little doubt that some increased health costs will be attributable to the ageing population and that health systems and policies will need to adapt to this significant demographic shift.

Funding for health goods and services comes from a range of sources, including the Australian Government; state and territory, and local governments; non-government sources such as private health insurers and injury compensation insurers; and out-of-pocket payments by individuals.

Government funding

Governments are the main funders, with about 70% of total health expenditure coming from government sources in 2011–12. As outlined in Chapter 2 ('How much does Australia spend on health care?'), over the last decade increases in government health expenditure have been largely matched by increases in government tax revenue. Whether this will continue in the future is unclear because projecting future tax revenue is complex. At the least, such projections need to take account of the ways that labour supply and productivity patterns may change over time as the economy diversifies and education levels in the population increase (Productivity Commission 2005).


Personal resources to fund health care

In 2011–12, individuals contributed about 17% of health funding. Older people tend to have lower incomes, but are also more likely to have greater wealth (although this is unevenly distributed) (ABS 2013f).

Property constitutes over half the total net worth of 'older' households (AIHW analysis of ABS 2013f). Although these funds can in theory be accessed by means such as reverse mortgages, they are generally not readily accessible to fund health and other costs. Moreover, older people who do not own their homes spend a high proportion of available income on housing (AIHW 2013a), leaving a smaller proportion available for health and other costs.

The next generation of older people—the baby boomer cohort—has on average higher levels of income and wealth than previous generations. However, this is also not evenly distributed (Productivity Commission 2011), with 60% of the group's net worth held by the wealthiest quarter, and only 4% held by the poorest quarter (AMP & NATSEM 2007).

Labour force participation among older people is also increasing (see Chapter 1 'Who we are'), which will help to offset expenditure growth, both directly and through the contribution of a longer working life to superannuation balances.



At 30 June 2013, 51% of people aged 65 and over had private hospital insurance, compared with 40% in June 2003 (AIHW analysis of ABS 2013a; PHIAC 2013). The proportion of older people covered by ancillary or extras (officially known as general treatment) increased from 31% to 44% in the decade to June 2013. Among older people, in 2013, 55% of those aged 65–74 had hospital coverage, compared with 38% of those aged 85 and over. The proportion with ancillary coverage was 50% for those aged 65–74, and 27% for those aged 85 and over. From the age of 65 onwards, higher proportions of the population were covered by hospital insurance than by ancillary.

Superannuation coverage is increasing; in 2010–11, around 64% of people aged 45 and over who were retired from the labour force had made contributions to a superannuation scheme, compared with 56% in 2008–09 (ABS 2009b, 2011a). However, many older Australians have never contributed to a superannuation scheme, or have done so for a relatively short time. Increased superannuation is not expected to significantly reduce the proportion of people receiving a pension, but it is expected to result in a greater shift towards part (rather than full) pensions (Productivity Commission 2013).

Pockets of pressure

The challenges associated with an ageing population are likely to be greater among some groups and geographic regions of Australia, and the demand for health services is likely to differ among locations and service types.

Differences by sex

In 2012, women accounted for 54% of people aged 65 and over, 65% of people aged 85 and over and 81% of all centenarians.

Older women are more likely to need assistance with daily activities and have higher rates of severe disability than men. According to the 2012 SDAC, 37% of women aged 75 and over had a severe or profound core activity limitation, compared with 26% of men (ABS 2013d). Older women were also more likely to report needing assistance with daily activities (for example, housework, health care and property maintenance). In 2012, 49% of women aged 65 and over reported needing assistance with at least 1 activity due to age or disability, compared with 34% of older men (ABS 2013d).

Women's greater life expectancy, together with lifetime differences in earnings and workforce participation, means that many older women experience economic vulnerability. Although superannuation coverage is increasing, there remain large gaps between the retirement savings of Australian men and women. In 2009–10, the average superannuation balance for women aged 60–64 was just over half that of the average balance for men (AIHW analysis of ASFA 2011).

Older Aboriginal and Torres Strait Islander Australians

The Indigenous population still has a relatively young age structure due to their lower life expectancy and higher fertility rate compared with non-Indigenous Australians. At 30 June 2011, there were about 22,700 Indigenous Australians aged 65 and over (constituting 3.4% of the Indigenous population), and 88,200 aged 50 and over (13%) (AIHW analysis of ABS 2013e). The number of older Aboriginal and Torres Strait Islander people is increasing, however, and those aged 50 and over have poorer health and higher rates of disability than non-Indigenous Australians of the same age (AIHW 2011a, 2013a). This, together with the central role that older Indigenous people play in maintaining culture and traditions in their communities (Cotter et al. 2007), means that particular attention needs to be paid to the health care and support needs of older Indigenous Australians (AIHW 2011a). (See Chapter 7 for information about the health and health system use of Indigenous Australians.)

Differences by geography


The age profile of the population varies between different regions of Australia. In 2013, the proportion of people aged 65 and over ranged from 6% in the Northern Territory to just over 17% in Tasmania. In general, older people are more likely to live outside capital cities—at 30 June 2012, 16% of those living outside capital cities compared with 13% of people living in greater capital cities were aged 65 and over (AIHW analysis of ABS 2013i). Consequently, regional areas—particularly those with high concentrations such as the mid-north coast of New South Wales where one-quarter of the population is aged 65 and over—are likely to require a relatively greater focus of services targeted at older people than cities.

Differences by cultural diversity

Some health characteristics also vary by cultural diversity. For example, after taking into account differences in age structures and response rates of the population groups, 2011 Census data indicate that older people born overseas in non-main English-speaking countries (25% of those aged 65 and over) were somewhat more likely to report needing help with core activities—that is, activities related to mobility, self-care and communication—than those born in Australia (17%) and those born in main-English-speaking countries (15%) (see AIHW 2013a: Table A5.7). ABS data also indicate that people (of all ages) born in non-main English-speaking countries have lower levels of health literacy (ABS 2008).

The overseas-born population has an older age structure than the Australian-born population. At 30 June 2013, more than one-third (37%) of Australians aged 65 and over were born overseas—14% in main English-speaking countries and 23% in other countries (ABS 2013g). Of all people born overseas, 19% were aged 65 and over, compared with 13% of people born in Australia.

Overseas-born older Australians are likely to be from European countries, having migrated after World War II. In 2013, 72% of older overseas-born people were born in Europe (AIHW analysis of ABS 2013g). Since the 1970s, migrants (of all ages) have increasingly come from non-European countries, particularly



Asian countries (ABS 2013g). For example, in 2013, a higher proportion of overseas-born Australians aged 55–64 were born in Asia than those aged 65 and over (26% compared with 14%), while a smaller proportion were born in Europe (50% compared with 72%) (AIHW analysis of ABS 2013g).

Differences by socioeconomic status

Socioeconomic factors, including associated disadvantage, are important determinants of health. In general, overall health tends to improve with each step up the socioeconomic ladder, commonly referred to as the socioeconomic gradient of health. For example, data from the 2011–12 AHS show that people who live in areas of most disadvantage were more likely than those in areas of least disadvantage to report certain long-term health conditions (such as diabetes and heart, stroke or vascular disease) and to be obese or smoke (ABS 2013c). Poor health can itself contribute to disadvantage, through, for example, lack of employment due to ill health (Case et al. 2005).

Health inequalities impose costs on society, both in terms of health care and lost productivity. The very existence of health inequalities implies that there is scope for population health gain.

The future—responses to an ageing population

As outlined above, the ageing of the population presents a number of challenges to Australia's health system. This means that the mix of services required by society, and the ways in which they are funded and delivered, will need to change as the population ages. There are ways—examples are outlined below—in which Australia can adapt to an ageing population and respond to the challenges it presents. The mix and intensity of these strategies will vary in response to the needs of people and local communities with particular characteristics.

Promoting good health across the lifespan

Ageing is associated with increased risk of many health conditions, disability and dependency. Research indicates, however, that the association between health status and age is more variable than often assumed, as many chronic conditions are preventable (or can at least be postponed) and are not an inevitable consequence of ageing (Khaw 1997).

Postponement of disease involves 4 strategies: prevention of risk factors for disease; reduction of the prevalence of risk factors before disease develops; prevention of progression of disease after onset; and reduction of morbidity from disease/complications that have already developed (Fries et al. 2011).

The high prevalence of certain modifiable risk factors for chronic disease among Australians suggests that opportunities for health improvement exist. Compared with other OECD countries, Australia's smoking rates in the general population are low, but rates of drinking alcohol, and being obese and sedentary, are all high (ABS 2012b). Encouraging wellbeing across the lifespan is an important means of improving the health of future generations of older people.

Enabling healthy ageing

Another key response is to maintain and improve the health and quality of life of current cohorts of older people, through better management of chronic conditions and multi-morbidity, and through broader strategies to enable healthy and active ageing.

The terms 'healthy ageing', 'successful ageing', 'active ageing', 'positive ageing' and 'productive ageing' are often used interchangeably with no agreed term or definition (Cosco et al. 2013; Cyarto et al. 2013). Regardless of the term used, there is a growing consensus that ageing well is about more than the absence of disability or disease (Bowling & Iliffe 2011; Bryant et al. 2012; Carstensen et al. 2011; Hung et al. 2010). Healthy ageing is not only a state, but also a process, for example, engaging in health-promoting behaviours and adapting successfully to life's circumstances.

In this vein, research suggests that perceived self-efficacy and optimism are associated with quality of later life (Bowling & Iliffe 2011). The importance of encouraging active lifestyles throughout the lifecycle is indicated by research showing physical activity and sitting time are independently associated with self-rated excellent health and quality of life in men and women aged 45 and over (Rosenkranz et al. 2013).

The primary health care sector plays a vital role in promoting and supporting healthy ageing, with GPs and other allied health professionals instrumental in providing lifestyle advice, managing disease risks and avoiding or averting complications of disease before the onset of old age, as well as during old age.


Aged care programs also provide a setting for preventative health care, given evidence of the high rates of modifiable lifestyle risk factors and health conditions among recipients of such programs (Jorm et al. 2010). Other targets for preventive health care among older people might include programs to prevent falls and fractures, as these are relatively common among older people, and add considerable costs to the health system (Bradley & AIHW 2013).

Enabling healthy ageing is not limited to the health or aged care system. For example, many older Australians express the desire to remain in their own homes for as long as possible (AIHW 2013c). However, this requires that there are appropriate health and social services available in the community setting. A cross-national study found that people who live in more accessible homes, and those who think that external influences are not responsible for their housing situation, have a better sense of wellbeing and are more independent (Oswald et al. 2007).

Supporting socioeconomic participation

Supporting and better enabling the economic and social participation of older people within the community is also likely to be an important means of mitigating the challenges associated with an ageing population.

Health is positively associated with engagement in paid work (Cai 2010; Pit et al. 2010; Schofield et al. 2013). Consequently, promoting good health has the potential to bring health gains to the individuals and increase their ability to participate actively in the workforce and more generally in the community.



Older people are increasingly likely to remain in the workforce beyond the traditional retirement age. In 2013, 12% of people aged 65 and over were in the labour force; this was an increase from 6% in 2003 (AIHW analysis of ABS 2014). Among people aged 65–69, the proportion of women in the labour force was 2.3 times as high in 2013 (20%) as in 2003 (8.5%), and 1.7 times as high for men (33% and 20% respectively).

Removing barriers to labour force participation is an important aspect of enabling older people who want to remain in the workforce to do so. In September 2012, there were about 64,300 people aged 55 and over who wanted, and were available for, work, but were not actively looking for a job because they believed they would not find one (referred to as ‘discouraged job seekers’). In September 2012, discouraged job seekers aged 55 and over represented 60% of all discouraged job seekers (ABS 2013h). Of older discouraged job seekers, the most commonly reported main reason for not actively looking for work was that they believed they were considered too old by employers (59%).

As well, many older Australians make indirect economic and other contributions to the community through voluntary work, as carers, and as providers of informal child care. According to the ABS 2010 General Social Survey, 31% of people aged 65 and over had participated in voluntary work in the previous 12 months (AIHW analysis of ABS 2011b). Of those older people who volunteered, 55% did so at least fortnightly, compared with 45% of those aged 18–64.

In 2012, an estimated 579,700 Australians aged 65 and over (19%) were informal carers, providing unpaid support and assistance to relatives and friends who were aged, ill or living with disability (ABS 2013d). In addition, in 2011, grandparents provided care on a regular basis for 26% of children (or 937,000 children) aged 12 or under; this was higher than in 2008 (19%) (AIHW analysis of ABS 2009a, 2012c).

Enhancing productivity in health-care delivery

One way to mitigate increased health costs associated with the ageing population is to improve productivity in health care. Along with broader efforts to improve the efficiency of the health system (see Chapter 2 ‘How much does Australia spend on health care?’), there is scope for specific efforts focused on the care of older people. For example, with high rates of chronic conditions and use of multiple medications within the older population (Morgan et al. 2012; Schofield et al. 2013), a focus on efficient coordination of care, and safe and effective use of medicines, can reduce the risk of duplication of tests and medical records not being available at the time of care.

Productivity of the health system can also be enhanced by recognition of its interaction with the aged care system, together with efforts to ensure that relevant care is provided in the most appropriate setting. Interaction between residential aged care and the hospital system is common—1 in 4 residents (25%) had at least 1 admission to hospital in 2011–12. A recent study of movements between hospital and residential aged care in 2008–09 estimated that 9% of hospital admissions involved permanent aged care residents (AIHW 2013d; see also Chapter 6 ‘Movement between hospitals and residential aged care’).

What is missing from the picture?

There are several information gaps relating to the relationship between ageing and health. Firstly, the process of healthy ageing is not well understood. While quality information exists about the health status of older Australians, much less is known about the interaction of different components, such as the interdependent relationships among physical, mental and social wellbeing.

As well, projections of the future health of the ageing population and of health expenditure are particularly sensitive to the choice of underlying assumptions. For example, models may make assumptions about the health profile of older people, use of new health technologies and labour force participation, all of which are likely to change over time. Consequently, modelling needs to be kept up to date with any changes in the factors and assumptions underlying the model.

In addition, there are only limited data available about certain groups of the older population, including Indigenous Australians and people in the oldest age groups (such as those aged 85 and over). Longitudinal studies such as the 45 and Up Study, which involves more than 250,000 people in New South Wales and is the largest ongoing study of health ageing in the Southern Hemisphere (Sax Institute 2013), may help to fill some of these gaps and will contribute to our understanding of ageing and health. With regard to health service provision, there is a lack of data relating to client outcomes, experiences of care and transitions within and between health and aged care services. Data linkage work has the potential to provide a picture of movements through services. For example, linked data has been used to look at pathways in aged care among a cohort of 105,100 people (see AIHW 2011b).

Where do I go for more information?

More information on ageing and the health of older people in Australia is available at www.aihw.gov.au/ageing/.

References

- ABS (Australian Bureau of Statistics) 2006. National Health Survey: summary of results, 2004–05. ABS cat. no. 4364.0. Canberra: ABS.
- ABS 2008. Health literacy, Australia, 2006. ABS cat. no. 4233.0. Canberra: ABS.
- ABS 2009a. Childhood education and care, Australia, June 2008. ABS cat. no. 4402.0. Canberra: ABS.
- ABS 2009b. Retirement and retirement intentions, Australia, July 2008 to June 2009. ABS cat. no. 6238.0. Canberra: ABS.
- ABS 2010. Disability, ageing and carers, Australia: summary of findings, 2009. ABS cat. no. 4430.0. Canberra: ABS.
- ABS 2011a. Retirement and retirement intentions, Australia, July 2010 to June 2011. ABS cat. no. 6238.0. Canberra: ABS.
- ABS 2011b. Voluntary work, Australia, 2010. ABS cat. no. 4441.0. Canberra: ABS.
- ABS 2012a. Australian Health Survey: first results, 2011–12. ABS cat. no. 4364.0.55.001. Canberra: ABS.
- ABS 2012b. Australian social trends, June 2012. ABS cat. no. 4102.0. Canberra: ABS.
- ABS 2012c. Childhood education and care, Australia, June 2011. Data cube. ABS cat. no. 4402.0. Canberra: ABS.
- ABS 2013a. Australian demographic statistics, June 2013. ABS cat. no. 3101.0. Canberra: ABS.

- ABS 2013b. Australian Health Survey: health service usage and health related actions, 2011–12. ABS cat. no. 4364.0.55.002. Canberra: ABS.
- ABS 2013c. Australian Health Survey: updated results, 2011–12. ABS cat. no. 4364.0.55.003. Canberra: ABS.
- ABS 2013d. Disability, ageing and carers, Australia: summary of findings, 2012. ABS cat. no. 4430.0. Canberra: ABS.
- ABS 2013e. Estimates of Aboriginal and Torres Strait Islander Australians, June 2011. ABS cat. no. 3238.0.55.001. Canberra: ABS.
- ABS 2013f. Household wealth and wealth distribution, Australia, 2011–12. ABS cat. no. 6554.0. Canberra: ABS.
- ABS 2013g. Migration, Australia, 2012–12 and 2012–13. ABS cat. no. 3412.0. Canberra: ABS.
- ABS 2013h. Persons not in the labour force, Australia, September 2012. ABS cat. no. 6220.0. Canberra: ABS.
- ABS 2013i. Population by age and sex, regions of Australia, 2012. ABS cat. no. 3235.0. Canberra: ABS.
- ABS 2013j. Population projections, Australia, 2012 (base) to 2101. ABS cat. no. 3222.0. Canberra: ABS.
- ABS 2014. Labour force, Australia, detailed—electronic delivery, December 2013. ABS cat. no. 6291.0.55.001. Canberra: ABS.
- AIHW (Australian Institute of Health and Welfare) 2011a. Older Aboriginal and Torres Strait Islander people. Cat. no. IHW 44. Canberra: AIHW.
- AIHW 2011b. Pathways in Aged Care: program use after assessment. Data linkage series no. 10. Cat. no. CSI 10. Canberra: AIHW.
- AIHW 2012. Dementia in Australia. Cat. no. AGE 70. Canberra: AIHW.
- AIHW 2013a. Australia's welfare 2013. Australia's welfare no. 11. Cat. no. AUS 174. Canberra: AIHW.
- AIHW 2013b. Depression in residential aged care 2008–2012. Aged care statistics series no. 39. Cat. no. AGE 73. Canberra: AIHW.
- AIHW 2013c. The desire to age in place among older Australians. AIHW bulletin no. 114. Cat. no. AUS 169. Canberra: AIHW.
- AIHW 2013d. Movement between hospital and residential aged care 2008–09. Data linkage series no. 16. Cat. no. CSI 16. Canberra: AIHW.
- AMP & NATSEM (National Centre for Social and Economic Modelling) 2007. Baby boomers—doing it for themselves. Income and Wealth Report. Issue no. 16. March 2007. Canberra: AMP.
- ASFA (Association of Superannuation Funds of Australia) 2011. Developments in the level and distribution of retirement savings. Sydney: ASFA.
- Bowling A & Iliffe 2011. Psychological approach to successful ageing predicts future quality of life in older adults. *Health and Quality of Life Outcomes* 9:13.
- Bradley C & AIHW 2013. Hospitalisations due to falls by older people, Australia: 2009–10. Injury research and statistics series 70. Cat. no. INJCAT 146. Canberra: AIHW.
- Bryant C, Bei B, Gilson K, Komiti A & Jackson H 2012. The relationship between attitudes to ageing and physical and mental health in older adults. *International Psychogeriatrics* 24:1674–83.
- Cai 2010. The relationship between health and labour force participation: evidence from a panel data simultaneous equation model. *Labour Economics* 17:77–90.
- Carstensen LL, Turan B, Scheibe S, Ram N, Ersner-Hershfield H, Samanez-Larkin GR et al. 2011. Emotional experience improves with age: evidence based on over 10 years of experience sampling. *Psychology and Aging* 26:21–33.

- Case A, Fertig A & Paxson C 2005. The lasting impact of childhood health and circumstance. *Journal of Health Economics* 24:365–89.
- Cosco T, Prina A, Perales P, Stephan B & Brayne C 2013. Lay perspectives of successful ageing: a systematic review and meta-ethnography. *BMJ Open* 3:e002710 doi:10.1136/bmjopen-2013-.
- Cotter P, Anderson I & Smith L 2007. Indigenous Australians: ageing without longevity? In: *Longevity and social change in Australia*. Sydney: University of New South Wales Press.
- Cyarto E, Dow B, Vrantsidis F & Meyer C 2013. Promoting healthy ageing: development of the healthy ageing quiz. *Australasian Journal on Ageing* 32:15–20.
- French D, Browning C, Kendig H, Luszcz M, Saito Y, Sargent-Cox K et al. 2012. A simple measure with complex determinants: investigation of the correlates of self-rated health in older men and women from three continents. *BMC Public Health* 12:649.
- Fries J, Bruce B & Chakravarty E 2011. Compression of morbidity 1980–2011: a focused review of paradigms and progress. *Journal of Aging Research* 2011:1–10.
- Hung L-W, Kempen G & De Vries N 2010. Cross-cultural comparison between academic and lay views of healthy ageing: a literature review. *Ageing and society* 30:1373–91.
- Jorm L, Walter S, Lujic S, Byles J & Kendig H 2010. Home and community care services: a major opportunity for preventive health care. *BMC Geriatrics* 10:26.
- Khaw K 1997. Epidemiological aspects of ageing. *Philosophical Transactions of the Royal Society B* 352:1829–35.
- Morgan T, Williamson M, Pirota M, Stewart K, Myers S & Barnes J 2012. A national census of medicines use: a 24-hour snapshot of Australians aged 50 years and older. *Medical Journal of Australia* 196:50–3.
- Oswald F, Wahl H, Schilling O, Nygren C, Fänge A, Sixsmith A et al. 2007. Relationships between housing and healthy aging in very old age. *Gerontologist* 47:96–107.
- PHIAC (Private Health Insurance Administration Council) 2013. Statistical trends in membership and benefits data tables (September 2013 release). Canberra: PHIAC. Viewed 26 November 2013, <<http://phiac.gov.au/industry/industry-statistics/statistical-trends/>>.
- Pit S, Shrestha R, Schofield D & Passey M 2010. Health problems and retirement due to ill-health among Australian retirees aged 45–64 years. *Health Policy* 94:175–81.
- Productivity Commission 2005. *Economic implications of an ageing Australia*. Research report. Canberra: Productivity Commission.
- Productivity Commission 2011. *Caring for older Australians*. Report no. 53. Final inquiry report. Canberra: Productivity Commission.
- Productivity Commission 2013. *An ageing Australia: preparing for the future*. Productivity commission research paper. Canberra: Productivity Commission.
- Rosenkranz R, Duncan M, Rosenkranz S & Kolt G 2013. Active lifestyles related to excellent self-rated health and quality of life: cross sectional findings from 194,545 participants in The 45 and Up Study. *BMC Public Health* 13:1071.
- Sax Institute 2013. *45 and Up Study*. Sydney: Sax Institute. Viewed 25 November 2013, <<https://www.saxinstitute.org.au/our-work/45-up-study/>>.
- Schofield D, Callander E, Shrestha R, Passey M, Percival R & Kelly S 2013. Multiple chronic health conditions and their link with labour force participation and economic status. *PLoS ONE* 8:e79108. doi:10.1371/journal.pone.0079108.
- Scott I 2009. Health care workforce crisis in Australia: too few or too disabled? *Medical Journal of Australia* 190:689–92.