ARC CENTRE OF EXCELLENCE IN POPULATION AGEING RESEARCH

AGED CARE POLICY, PROVISION, AND PROSPECTS

1 WHERE ARE WE AT?

Australia's aged care system is evolving. It is where the challenges of population ageing are most apparent and where policy choices have direct impact on the lives of Australians. This fact sheet takes stock of recent changes in aged care policy, industry, and labour force, and highlights research seeking to address its challenges.

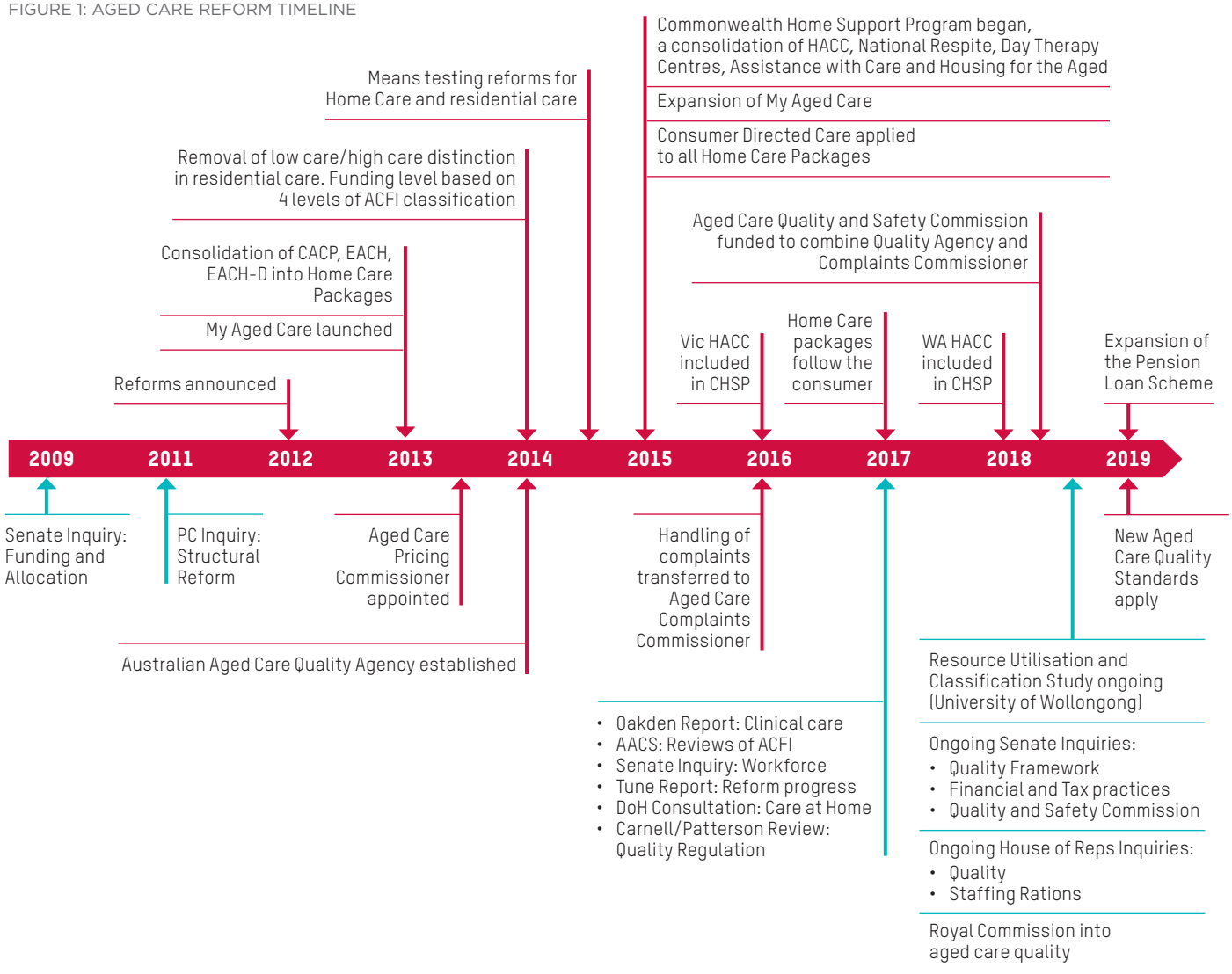
POLICY TRENDS

The last decade has seen various reviews and policy changes in aged care. Following a Productivity Commission landmark report in 2011 (PC, 2011) a program of aged care reform began. The reforms aimed to ensure that provision of care was responding to an ageing population, enabling people to remain in their homes longer, and making it easier for older people to access information, navigate the system, and make choices about their care.

An independent legislated review of the reforms (Tune, 2017) concluded that measures undertaken thus far were a significant step on a longer path to a consumer driven, sustainable system. The review made 38 recommendations covering demand and supply, means testing, accommodation payments in residential care, informing consumers, assessments, equity of access, and workforce development. To date, few reforms have addressed remaining challenges in the aged care labour market.

Concern for the quality of care in the aged care sector was accelerated by the Oakden Report (Groves et al. 2017), and a Commonwealth Royal Commission into aged care quality and safety was announced by the Prime Minister in September 2018. The sector, and the policy governing it, is expected to continue to evolve.

FIGURE 1: AGED CARE REFORM TIMELINE



MODES AND COSTS OF CARE

Aged care, often known as long term care, is the set of institutions and practices that provide care to frail older people who require assistance with daily living. Population ageing means more people than ever will require care in Australia in coming years. In 2016, 2% of the population were aged over 85 (ABS, 2016b). This figure is projected to rise to between 3% and 9% by 2060 (PC, 2013). This age group is more likely to need care. In 2016, 47% of them needed assistance with core activities (ABS, 2016b).

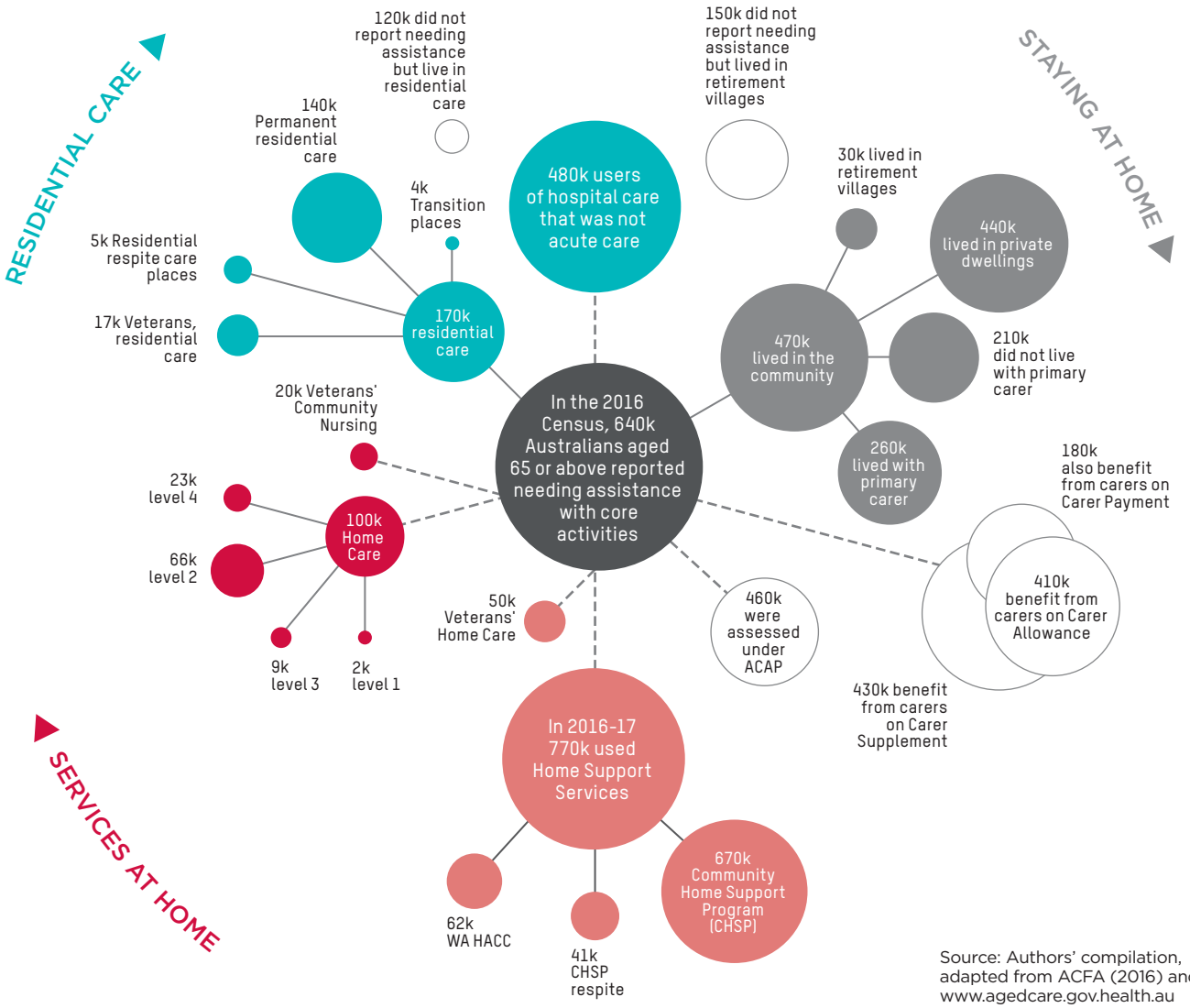
People access care in different ways (Figure 2). There is a continuum of care options, from receiving care from family or friends who can receive carer benefits, to services at home – either Home Support Services, or a Home Care Package for those needing more complex care – through to residential care, which may be temporary (respite) or permanent. The proportion of people in residential care with high care needs has been increasing. In 2017, 63% of people in residential care were classified as high care on the cognitive and behaviour domain (AIHW, 2018a).

Use of aged care is largely driven by dementia and stroke. 80% of women with dementia were in permanent residential care in the last two years of life. Care in the community is more common and can sustain people in their homes for many years. There are several different types of service use at home, but many use a few basic services such as domestic assistance, meals, and transport (Kendig et al. 2012).

Public spending on aged care was over $20 billion in 2017 (Figure 3), comprising about $17 billion from the Department of Health and an estimated $4 billion in carer benefits in the Department of Social Services budget. In a typical year, consumers of aged care tend to contribute a further amount equal to almost a third of the Department of Health aged care budget.

Spending is currently projected to increase from 1% of GDP (PBO, 2018) to 2.2% of GDP by 2050 (PC, 2013). In the next ten years aged care is expected to be the fastest growing spending item after the National Disability Insurance Scheme, growing at over 7% p.a. (PBO, 2018).

FIGURE 2: NEED AND UTILISATION OF CARE (AGES 65+, 2016-17)



Source: Authors' compilation, adapted from ACFA (2016) and www.agedcare.gov.health.au

PRIVATE CONTRIBUTION TO CARE

Private contributions to care are not insignificant. In 2017, recipients of home support services, home care, and residential care contributed $204 million, $150 million, $4.5 billion, respectively (ACFA 2018).

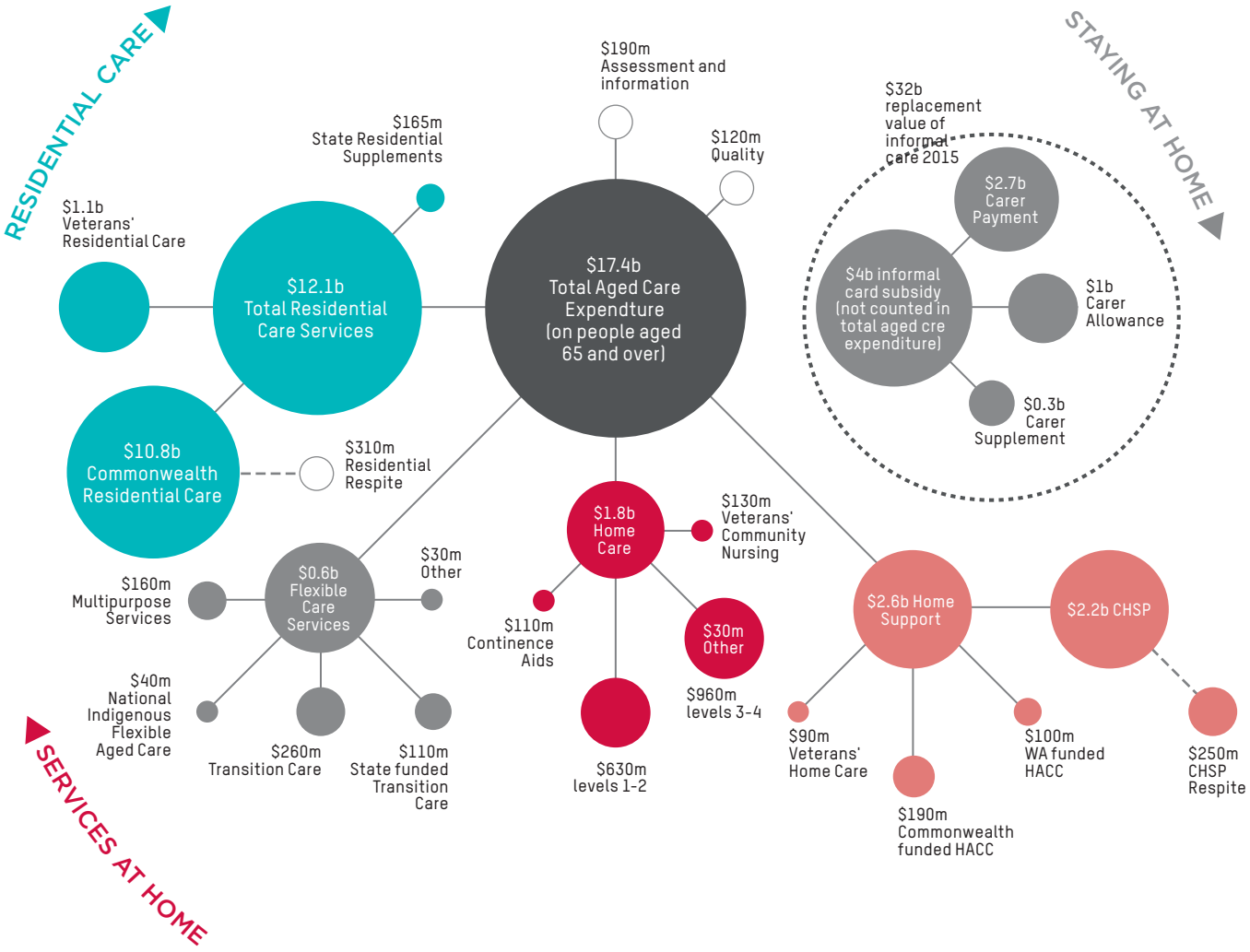
Providers of home support can choose to ask for a private contribution to services, capped at the cost of the service.

Private contributions to home care come in two parts. First, a basic daily fee can be charged, capped at 17.5% of the single age pension. In 2018, this was about $10 per day. Most charge part, or all, of this amount. Second, an income-tested care fee can be charged for those with annual income over about $26,800. This fee is capped annually at about $5,400 for part-pensioners and $10,800 for self-funded retirees, with a lifetime cap for everyone of about $65,000 across home care and residential care.

Contributions to residential accommodation and care are subject to an asset- and income-based means test. All residents pay a basic daily fee, capped at 85% of the single basic age pension. A person with assets above $48,500 or income above about $26,800 pays a contribution towards their accommodation. Those with greater means also pay a means tested care fee. This includes people with assets over about $165,000 or income over $68,000 (or combination of assets and income). There is an annual cap of about $27,000 on the care fee. Recipients can agree with their providers to pay more for additional services above the statutory minimum.

Residents can choose to pay for accommodation as a daily, non-refundable fee, or as refundable lump sum amount, or a combination of daily payment and refundable lump sum. These refundable lump sums act as an interest free loan to the providers and are their major source of capital for investment. The asset value of the lump sum deposits held by residential aged care providers in 2017 was $24.8 billion.

FIGURE 3: PUBLIC COST OF CARE (AGES 65+, 2016-17)



Figures 2 and 3 represent stocks of people at a particular time in the year or flows of people in the year. The numbers of people are rounded to the nearest 10k, and the costs are rounded to the nearest $100k, except for small numbers.

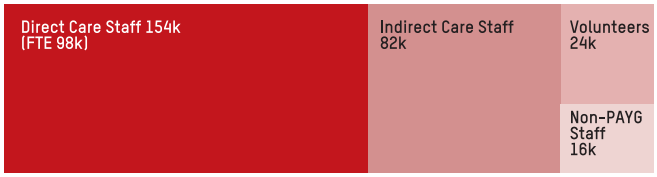
The numbers relate to persons 65+ except for some programs which include Indigenous persons aged 50+. Some figures are an estimate. Sources: ABS (2015, 2016a, 2016b), AIHW (2018b), DoH (2017), DSS (2017a, 2017b), PC (2018)

2 WORKFORCE

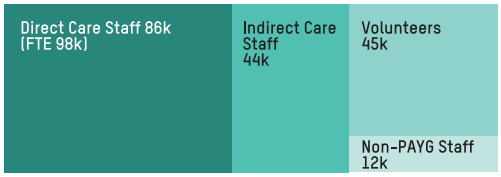
About a quarter of a million people work in residential aged care, assisted by 24,000 volunteers. This workforce has increased by about 15% between 2012 and 2016. About 150,000 of them are care workers, which increased by 5% since 2012. The community aged care workforce, which provides care at home, consists of over 140,000 people, plus 45,000 volunteers.

It has decreased by 17% since 2012. In the community care sector, direct care workers have declined by 7% since 2012, to 86,000. Non-PAYG staff predominantly fill direct care roles. Volunteers work, on average, 5 hours a fortnight to assist with social and group activities, and transport.

RESIDENTIAL CARE HEADCOUNT 2016



COMMUNITY CARE HEADCOUNT 2016

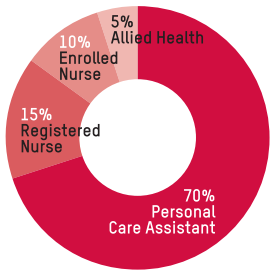


SKILLS SHORTAGES PERSIST

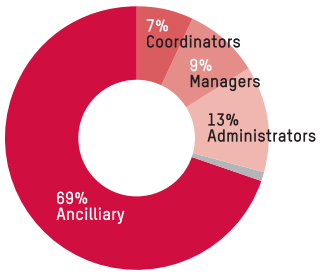
Skill shortages are declining but are more prevalent outside major cities. The most common skill shortage in residential care is for Registered Nurses.

The most common skill shortage in community aged care is for Community Care Workers, which, combined with the reduction in direct care workers and the likely increase in future demand in this sector, is some cause for concern.

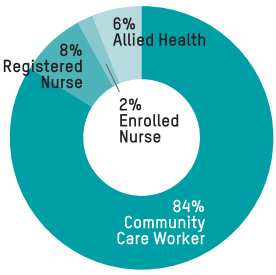
RESIDENTIAL DIRECT CARE STAFF BY OCCUPATION



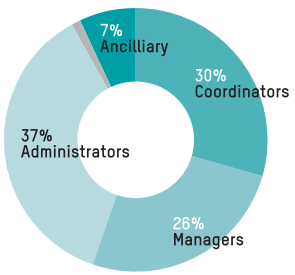
RESIDENTIAL INDIRECT CARE STAFF BY OCCUPATION



COMMUNITY DIRECT CARE STAFF BY OCCUPATION



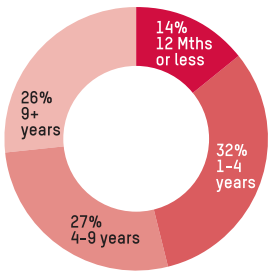
COMMUNITY INDIRECT CARE STAFF BY OCCUPATION



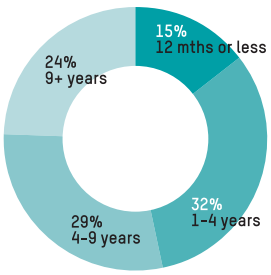
STABLE AND COMMITTED WORKFORCE

Women make up 88% of the direct care workforce. The median age for residential direct care staff is 46, down from 48 in 2012. For community direct care staff the median age is 52, up from 50 in 2012. 86% of direct care workers have been in their current job for more than one year. This has grown from 84% in 2012 and is higher than the figure for all Australian women workers in 2016 of 82%. Aged care workers benefit from more training than the Australian workforce as a whole. Job satisfaction is high, except for pay. Workers report the most stressful aspect of their job was unanticipated changes in work patterns. They tend to be concerned about the impact that consumer directed care will have on working conditions and employment.

RESIDENTIAL DIRECT CARE STAFF TIME IN JOB



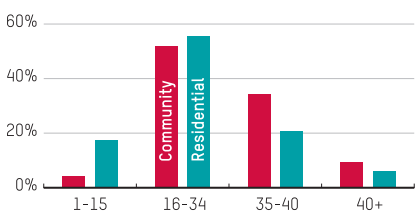
COMMUNITY DIRECT CARE STAFF TIME IN JOB



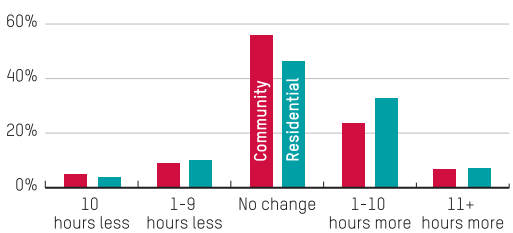
UTILISATION OF WORKFORCE

The majority of direct care workers are part time. There is modest underutilisation of the workforce as a whole, with 30% of direct care workers in residential care, and 40% of those in community care, wanting to work more hours.

DIRECT CARE WORKERS HOURS WORKED



DIRECT CARE WORKERS PREFERRED CHANGE IN HOURS



3 SERVICE PROVIDERS

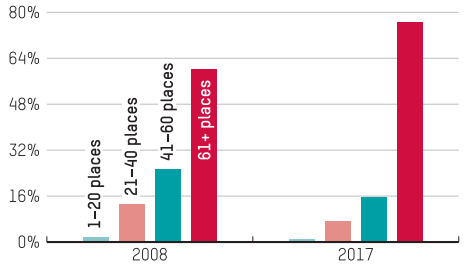
In 2016, there were around 1,000 residential care providers that provided approximately 200,000 places, and about 600 home care and 1,600 home support outlets (including Victoria and WA) that provided 70,000 home care packages, and served the home support needs of 770,000 people through the ye ar.

Despite the policy intent to enable people to access care at home rather than in residential facilities, since 2012 residential places have increased by around 20k. Home care has increased by 10k packages, and an extra 20k people accessed home support in the year.

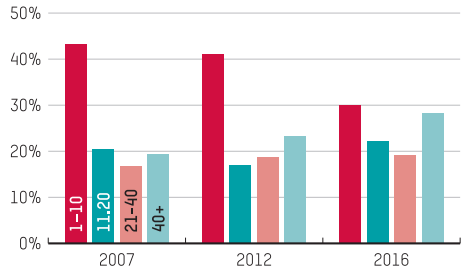
SIZE

The trend to larger services in residential care continues, with 80% of residential facilities belonging to a larger group. Home care and home support outlets are also getting bigger, and about 60% belong to a larger provider group.

PERCENTAGE OF RESIDENTIAL OPERATIONAL PLACES BY SIZE OF SERVICE



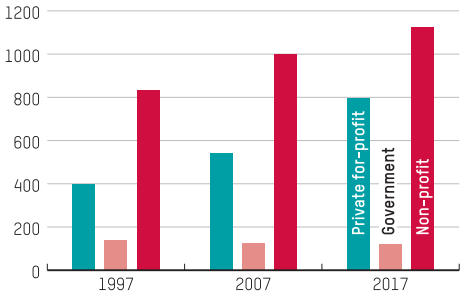
PERCENTAGE OF HOME CARE AND HOME SUPPORT WORKERS EMPLOYED BY SIZE OF OUTLET



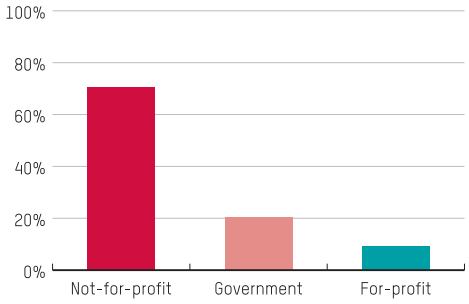
OWNERSHIP

Not-for-profits provide 55% of residential places. But the number of places offered by for-profit providers has grown considerably, doubling over the last 20 years. The number of places in the non-profit sector increased by only about a third. Not-for-profits dominate the community care sector. In doing so, they employ 70% of the home care and home support workforce.

NUMBER OF RESIDENTIAL CARE PLACES BY SECTOR



HOME CARE AND HOME SUPPORT PROPORTION OF PAYG EMPLOYEES BY OWNERSHIP TYPE

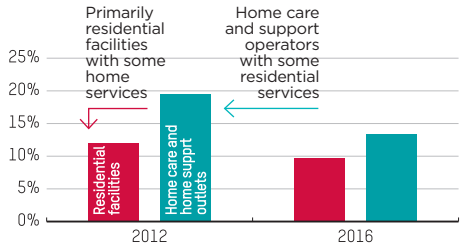


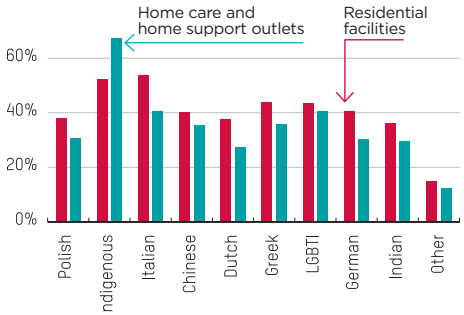
SPECIALISATION

Facilities and outlets are becoming more specialised, as shown by the reduction in the percentage that offer both home care and home support services and residential services.

In 2016, 25% of residential facilities and 43% of home services catered to one or more specific cultural or ethnic groups, similar to 2012 levels.

FACILITIES AND OUTLETS OFFERING BOTH RESIDENTIAL CARE AND HOME SERVICES

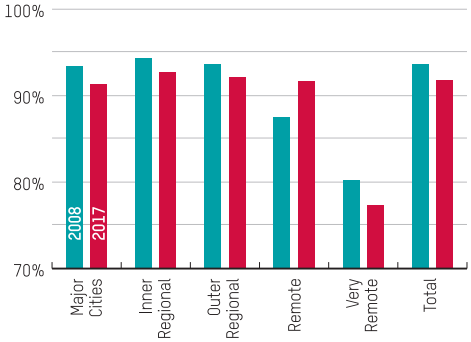




OCCUPANCY

The overall occupancy rate in residential care places has fallen slightly. Occupancy remains lower in very remote areas. Accurate data on unmet demand in home care and home support is not yet available. The shift in home care packages to follow the consumer from 2017 should allow unmet demand to be assessed in the future.

RESIDENTIAL OCCUPANCY RATES BY LOCATION



Source:
Mavromaras et al. (2017),
PC (2018)

4 FINDING A WAY FORWARD

How can research help? CEPAR is active in key research areas that will help inform a sustainable aged care system. Some of of these are highlighted here. The research questions are adapted from the Aged Care Sector Committee's Roadmap (ACSC 2016).

HOW TO GUIDE CHOICES IN LATER LIFE?

CEPAR's Hazel Bateman and her colleagues are using an online experimental survey to investigate how individuals plan for savings in retirement. Their findings include that:

- people make better financial decisions when fees are shown as dollars rather than percentages (Thorp et al. 2017);
- individuals with fewer financial resources are influenced by advice from friends, government recommendations, and default settings (Alonso-Garcia et al. 2017b); and
- people modify their motives when a major life event is expected (Alonso-Garcia et al. 2017a).

CEPAR HDR student Cassie Curryer has studied the situation of women and prospects for housing and care in later life. She was particularly interested in single women who did not have children, with the expectation that these women may be especially vulnerable under our current policy perspectives. (Curryer et al. 2018)

WHO PROVIDES CARE?

The implications of providing care to a fast ageing prison population in Australia are the subject of a CEPAR research paper by CEPAR's John Piggott, Rafal Chomik, CEPAR AI Natasha Ginnivan and others (Ginnivan et al. 2018). The challenges to physical and process infrastructure, climbing health costs, and the release of many more old and frail ex-prisoners require an evidence base to inform a much-needed policy response.

Mechanisms necessary to support integrated care include consolidated financing, care coordination and information systems. From her research in NSW, Laurel Hixon (2015) found that care providers that are part of a common chain, have greater capacity, particularly in home support services, and are non-profit are more likely to offer integrated care across all services. She further found that senior leadership and direct supervisor support promote innovation.

WHO PAYS?

Population ageing makes public funding of aged care challenging. CEPAR's Jeromey Temple, Peter McDonald and a colleague (2017) show that the assets available at death in Australia, mostly tied up in property, were $70 billion in 2010, and will rise rapidly. They recommend policy that balances inter-generational transfers of assets much earlier than death, the financial needs of older Australians who are living longer, and strong controls against elder financial abuse.

CEPAR's Michael Sherris and his colleagues investigate longevity and insurance. Their research work includes

- assessing the impact of longevity risk management strategies on life insurance shareholder value and solvency (Blackburn et al. 2016);
- exploring how to estimate the market risk premium of longevity risk (Xu, Sherris and Ziveyi et al. 2018); and
- finding that products that bundle together reverse mortgages and long-term care insurance can be beneficial to retirees (Shao, Chen and Sherris et al. 2017).

Chomik and Piggott (2016) discuss how the means test assesses wealth, particularly whether different assets are treated equally and whether the income and assets tests interact effectively across the asset distribution.

HOW TO ASSESS NEEDS?

CEPAR's Julie Byles and her colleagues identified predictors of use of in-depth health assessments, which can reduce nursing home admissions. They found that promotion of health assessments to women over 75 is necessary to increase their uptake (Dolja-Gore et al. 2017).

CEPAR researcher Jacqueline Wesson and others (Reppermund et al. 2016) have developed and validated a performance-based measure of instrumental activities of daily living that differentiates between normal cognition, mild cognitive impairment and dementia.

HOW TO SUPPORT CONSUMERS WITH DIFFERENT NEEDS?

CEPAR's Robert Cumming and his colleagues found that childhood stress, such as removal from family, significantly increased dementia rates for older Aboriginal Australians (Radford et al. 2015).

HOW TO RESPOND TO DEMENTIA CHALLENGES?

CEPAR research projects contribute to dementia information and support.

- Kaarin Anstey and others report on undetected dementia (Lang et al. 2016);
- Richard Burns and Kaarin Anstey, with others, investigate risk factors for dementia (Ashby Mitchell et al. 2017); and
- Kaarin Anstey and her colleagues have mapped geographic clustering of dementia in Adelaide and found significant hotspots in low socio-economic areas (Bagheri et al. 2018). This work can help to target early prevention strategies.

CEPAR's Lindy Clemson and others found that there is scope for more occupational therapists to prescribe simple assistive technology for wayfinding to support people with dementia and their carers (Jarvis, Clemson and Mackenzie 2017).

WHAT CARE IS AVAILABLE?

To answer this question requires robust modelling of future demand. Marijan Jukic (2018), a recent PhD student who was supervised by CEPAR researchers, modelled life expectancy by care need and disease status. He reports that residents' assistance needs are good predictors of the possibility of transition to other care levels, and death.

Byles and her colleagues found that where people live is the determining factor in admission to hospital for convalescence or rehabilitation. They recommend increased availability of non-acute rehabilitation and respite care in regional or remote areas to improve older patient care and reduce the burden on acute hospitals (Chojenta et al. 2017).

CEPAR HDR student Mijan Rahman is undertaking extensive modelling of aged care data to determine pathways into and through community and residential care across later life. He found four different latent pathways of aged care use across later life, and also predicted transition and survival probabilities while using different levels of aged care services.

HOW TO SUPPORT THE FORMAL AND INFORMAL CARE WORKFORCE

CEPAR's Hal Kendig and his colleagues assessed the Clinical Leadership in Aged Care program for middle managers. They found it improved management and leadership behaviours and effects, but there was no evidence that staff turnover or quality of care improved (Jeon et al. 2015).

CEPAR's Kate O'Loughlin, Vanessa Loh and Hal Kendig (2017) found that informal carers, particularly women, tend to do less paid work, have less retirement income and be in poorer health than non-carers. They call for policy reform to mitigate these consequences.

CEPAR's Robert Cumming, Hal Kendig, and others found that older male caregivers report more symptoms of anxiety (Shu et al. 2017).

Volunteering, however, can be beneficial. CEPAR's Anstey, Burns and colleagues found that for older people, more frequent volunteering was associated with a greater increase in life satisfaction, and there was a stronger benefit for those who had lost more friends (Jiang et al. 2018).

HOW TO RAISE QUALITY IN AGED CARE

CEPAR's Vasant Hirani, Rober Cumming and others are investigating older men's health in the Concord Health and Ageing in Men Project. Their findings inform how we might provide quality care to older men, including in diet (Ribiero et al. 2017; Waern et al. 2015); emphasise the importance of screening and management of multiple rather than single risk factors (Hirani et al. 2014); and show that having weak muscles was associated with the onset of frailty and disability (Hirani et al. 2017).

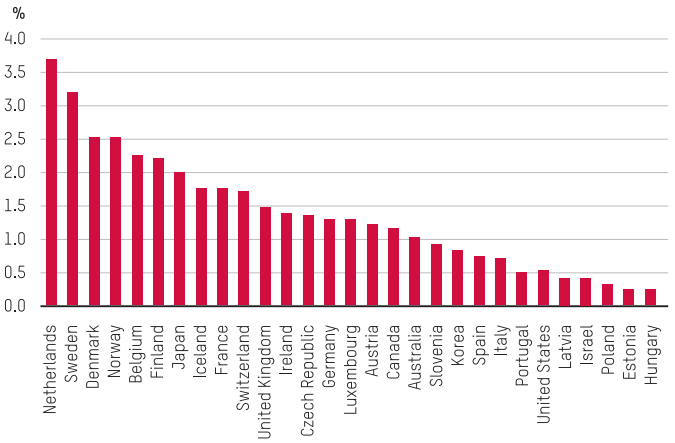
5 INTERNATIONAL COMPARISONS

Australia can both learn from and inform the long-term care settings in other countries. CEPAR researcher Bei Lu and her colleagues report on a pilot in Qingdao, a city of nine million people in Shandong province in China, where 20% of the population are over 60. The study shows that a full coverage long term care program would only cost about 0.1% of GDP (Lu et al. 2017).

It is difficult to make comparisons between countries because of the availability and comparability of data. Campbell et al. (2016), with CEPAR's Rafal Chomik, compare seven countries' approaches to long term care for older users. Of the seven, Sweden has the highest public spend, which goes to residential care and home based care. The US spend is also directed this way, but at a much lower level, with severe means testing placing the burden on families and individuals, resulting in a high level of private funding of care. Italy and England both rely heavily on cash allowances that can then be spent on care from family members or private caregivers.

The allowances in Italy are at a higher level, but in England the overall cost is higher as the allowances go to more people. Australia, Germany and Japan all have systematised programs. Japan is strongest on services for people living at home, and has a higher spend than the other two as the means testing is more generous. Australia is dominated by high- cost institutional care.

LONG TERM CARE EXPENDITURE BY GOVERNMENT AND COMPULSORY INSURANCE SCHEMES (% OF GDP)



Source: OECD, 2018

REFERENCES

AACS (Applied Aged Care Solutions Pty Ltd) (June 2017) 'Review of the Aged Care Funding Instrument Report'

ACFA (Aged Care Financing Authority) (2016) 'Annual Report on the Funding and Financing of the Aged Care Sector' Canberra

ACFA (Aged Care Financing Authority) (2018) 'Annual Report on the Funding and Financing of the Aged Care Sector' Canberra

ACSC (Aged Care Sector Committee) (2016) 'Aged Care Roadmap'

Alonso-García, J., Bateman, H., Bonekamp, J., & Stevens, R. (2017a) 'Retirement drawdown defaults: The role of implied endorsement' CEPAR working paper 2017/20

Alonso-García, J., Bateman, H., Bonekamp, J., van Soest, A., & Stevens, R. (2017b) 'Saving preferences in retirement: The impact of pension policy design and health status'. CEPAR working paper 2017/19

Ashby-Mitchell, K., Burns, R., Shaw, J., & Anstey, K. (2017) 'Proportion of dementia in Australia explained by common modifiable risk factors' Alzheimer's Research & Therapy 9(11)

ABS (Australian Bureau of Statistics) (2015) 'Cat. 4430.0 Disability, Ageing and Carers' Canberra

ABS (Australian Bureau of Statistics) (2016a) 'Cat. 3101.0 Australian Demographic Statistics, June 2016' Canberra

ABS (Australian Bureau of Statistics) (2016b) 'Census of Population and Housing' Canberra

ABS (Australian Bureau of Statistics) (2016c) 'Cat. 6226.0 Participation, Job Search and Mobility, Australia, February 2016' Canberra

AIHW (Australian Institute of Health and Welfare) (2018a) 'GEN fact sheet 2016-17: People's care needs in aged care' Canberra

AIHW (Australian Institute of Health and Welfare) (2018b) 'Australian Hospital Statistics 2016-17' Canberra

Bagheri, N., Wangdi, K., Cherbuin, N., & Anstey, K. J. (2018) 'General Practice Clinical Data Help Identify Dementia Hotspots: A Novel Geospatial Analysis Approach' Journal of Alzheimer's Disease, 61(1)

Blackburn, C., Hanewald, K., Olivieri, A., & Sherris, M. (2016) 'Longevity Risk Management and Shareholder Value for a Life Annuity Business' ASTIN Bulletin: The Journal of the IAA, 47(1), 43-77

Campbell, J., Ikegami, N., Gori, C., Barbabell, F., Chomik, R., d'Amico, F., Holder, H., Ishibashi, T., Johansson, L., Komisar, H., Ring, M., and Theobald, H. (2016) 'How different countries allocate long-term care resources to older users: a comparative snapshot' in C. Gori C., Fernandez J., and Wittenberg R. Long-term care reforms in OECD countries: Successes and failures Bristol, UK, Policy press: 47-76

Carnell, K., Paterson, R. (2017) 'Review of National Aged Care Quality Regulatory Processes' https://agedcare.health.gov.au/quality/review-of-national-aged-care-quality-regulatory-processes-report

Chojenta, C., Byles, J., & Nair, B. K. (2017) 'Rehabilitation and convalescent hospital stay in New South Wales: an analysis of 3,979 women aged 75+' Australian and New Zealand Journal of Public Health, 42(2)

Chomik, R., & Piggott, J. (2016) 'A Note on the Treatment of Assets in the Australian Age Pension Means Test' CEPAR Working Paper 2016/01

Curryer, C., M. Gray, and J. Byles (2018) 'Older Women's Expectations of Care, Reciprocity, and Government Support in Australia: Am I Not Worthy?', Ethics and Social Welfare

Dobson A, Waller M, Forder P, Dolja-Gore X, Hockey R, Byles J, and Mishra G. (2018) 'Health service use at the end of life by older Australian women with chronic conditions: Report to the Department of Health from the Australian Longitudinal Study on Women's Health'

DoH (Department of Health) (2017) '2016-17 Report on the Operation of the Aged Care Act 1997' Canberra, Commonwealth of Australia

DSS (Department of Social Services) (2017a) 'Annual Report 2016-17' Australian Government, Canberra

DSS (Department of Social Services) (2017b) 'Portfolio Budget Statements 2017-18, Budget Related Paper No. 1.15A, Social Services Portfolio' Canberra,Australian Government

Dolja-Gore, X., Tavener, M., Majeed, T., Nair, B. R., & Byles, J. (2017) 'Uptake, prevalence and predictors of first-time use for the 75+ Health Assessment Scheme' Australian Journal of Primary Health, 23, 476–481

Ginnivan, N., Chomik, R., Piggott, J., Butler, T., & Withall, A., (2018). 'Australia's ageing prisoner population: the demographic shift and implications for the economic and social costs of care' CEPAR Working Paper 2018/06

Groves, A., Thomson, D., McKellar, D. and Procter, N. (2017) 'The Oakden Report' Adelaide, SA: SA Health, Department for Health and Ageing

Hirani, V., Naganathan, V., Blyth, F., Le Couteur, D., Gnjidic, D., Stanaway, F., Seibel, M., Waite, L., Handelsman, D., & Cumming, R. (2014) 'Multiple, but not traditional risk factors predict mortality in older people: the concord health and ageing in men project' AGE, 36(6)

Hirani, V., Naganathan, V., Blyth, F., Le Couteur, D., Seibel, M. J., Waite, L. M., Handelsman, D., & Cumming, R. G. (2017) 'Longitudinal associations between body composition, sarcopenic obesity and outcomes of frailty, disability, institutionalisation and mortality in community-dwelling older men: The Concord Health and Ageing in Men Project' Age and Ageing, 46(3)

Hixon, L. (2015) 'Integration and innovation in aged care organisations: Three studies in New South Wales' PhD thesis, UTS, Faculty of Health

Jarvis, F., Clemson, L. M., & Mackenzie, L. (2017) 'Technology for dementia: Attitudes and practices of occupational therapists in providing assistive technology for way finding' Disability and Rehabilitation: Assistive Technology 12(4), 373-377

Jeon, Y.-H., Simpson, J. M., Li, Z., Cunich, M. M., Thomas, T. H., Chenoweth, L., & Kendig, H. (2015) 'Cluster Randomized Controlled Trial of An Aged Care Specific Leadership and Management Program to Improve Work Environment, Staff Turnover, and Care Quality' JAMDA, 16(7)

Jiang, D., Hosking, D., Burns, R., Anstey, K. (2018) 'Volunteering Benefits Life Satisfaction and Cognitive Functioning Over 4 Years: The Moderating Role of Social Network Size' Journal of the American Geriatrics Society 65(s2): S295-S296Jukic, M. (2018) 'Direct Estimation of Life Expectancies and Transition Rates of Residential Care Residents' CEPAR working paper 2018/9

Jukic, M., (2018) 'Direct Estimation of Life Expectancies and Transition Rates of Residential Care Residents', CEPAR Working Paper Series

Kendig H, Mealing N, Carr R, Lujic S, Byles J, and Jorm L. (2012) 'Assessing patterns of home and community care service use and client profiles in Australia: A cluster analysis approach using linked data' Health and Social Care in the Community, 20(4):375-387

Lang, L., Clifford, A., Wei, L., Zhang, D., Leung, D., Augustine, G., Danat, I., Zhou, W.,Copeland, J., Anstey, K., & Chen, R. (2016) 'Prevalence and determinants of undetected dementia in the community: a systematic literature review and a meta-analysis' BMJ Open, 7(2)

Lu, B., Mi, H., Zhu, Y., & Piggott, J. (2017) 'Sustainable Health Care System in Ageing China: A Case Study of Regional Practice in China' CEPAR Working Paper 2017/09

Mavromaras, K., Knight, G., Isherwood, L., Crettenden, A., Flavel, J., Karmel, T., Moskos., Smith, L., Walton, H., & Wei, Z. (2017) '2016 National Aged Care Workforce Census and Survey – The Aged Care Workforce, 2016' Department of Health

OECD (Organisation for Economic Co-operation and Development) (2018) 'OECD.Stat' OECD, Paris

O'Loughlin, K., Loh, V., & Kendig, H. (2017) 'Carer Characteristics and Health, Wellbeing and Employment Outcomes of Older Australian Baby Boomers' Journal of cross-cultural gerontology, 32(3), 339-356

PBO (Parliamentary Budget Office) (2018) '2018-19 Budget medium-term projections' Canberra

PC (Productivity Commission) (2011) 'Caring for older Australians: Productivity Commission inquiry report' No. 53, Canberra

PC (Productivity Comission) (2013) 'An ageing Australia: Preparing for the future' Commission Research Paper, Canberra

PC (Productivity Commission) (2018) 'Report on Government Services 2018, Part F, Chapter 14' Canberra

Radford, K., Mack, H. A., Draper, B., Chalkley, S., Delbaere, K., Daylight, G., Cumming, R., Bennett, H., & Broe, G. (2015) 'Comparison of Three Cognitive Screening Tools in Older Urban and Regional Aboriginal Australians' Dementia and Geriatric Cognitive Disorders, 40(1-2)

Reppermund, S., Birch, R, Crawford, J., Wesson, J., Draper, B., Kochan, N., Trollor, J., Luttenberger, K., Brodaty, H., & Sachdev, P. (2017) 'Performance-Based Assessment of Instrumental Activities of Daily Living: Validation of the Sydney Test of Activities of Daily Living in Memory Disorders (STAM)' JAMDA 18

Ribeiro, R., V., Hirani, V., Senior, A. M., Gosby, A. K., Cumming, R. G., Blyth, F., Naganathan, V., Waite, L., Handelsman, D., Kendig, H., Siebel, M., Simpson, S., Stanaway, F., Allman-Farinelli, M., & Le Couteur, D. (2017) 'Diet quality and its implications on the cardio-metabolic, physical and general health of older men: the Concord Health and Ageing in Men Project (CHAMP)' British Journal of Nutrition, 118(2)

Shao, A., Chen, H., & Sherris, M. (2017) 'To Borrow or Insure? Long Term Care Costs and the Impact of Housing' CEPAR Working Paper 2017/11

Shu, C.-C., Cumming, R. G., Kendig, H., Blyth, F., Waite, L. M., Le Couteur, D.,Handelsman, D., & Naganathan, V. (2017) 'Health status, health behaviours and anxiety symptoms of older male caregivers: Findings from the Concord Health and Ageing in Men Project' Australasian Journal on Ageing 36(2)

Temple, J. B., McDonald, P. F., & Rice, J. M. (2017) 'Net Assets Available at Age of Death in Australia: An Extension of the National Transfer Accounts Methodology' Population review, 56(2)

Thorp, S., Bateman, H., Dobrescu, I., Newell, B. R., & Ortmann, A. (2017) 'Flicking the Switch: Simplifying Disclosures to Improve Retirement Plan Choices' CEPAR working paper 2017/21

Tune, D. (2017) 'Legislated review of Aged Care' Commonwealth of Australia

UOW (University of Wollongong) (2018) 'Resource Utilisation and Classification Study' https://ahsri.uow.edu.au/rucs/index.html

Waern, R. V. R., Cumming, R. G., Blyth, F., Naganathan, V., Allman-Farinelli, M., Le Couteur, D., Stimpson, S., Kendig, H., & Hirani, V. (2015) 'Adequacy of nutritional intake among older men living in Sydney, Australia: findings from the Concord Health and Ageing in Men Project (CHAMP)' British Journal of Nutrition, 114(5), 812-821

Xu, Y., Sherris, M., & Ziveyi, J. (2018) 'Market Price of Longevity Risk for A Multi-Cohort Mortality Model with Application to Longevity Bond Option Pricing' CEPAR Working paper 2018/3.