



Building resilience

– the benefits of addressing social isolation and
loneliness in regional, rural and remote communities



MILES MORGAN
A U S T R A L I A

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1. Research context

Since 2018, Miles Morgan Australia has undertaken extensive research into ageing and aged care services for the Australian Government, sector representative bodies and national service providers.

While the Australian Government is responsible for aged care services, in the absence of a commitment to meet **true demand**¹, State, Territory and local governments will continue to face significant downstream costs due to the ageing population.

The objective of any investment in healthy ageing should be to intervene early to keep people resilient for as long as possible – thereby compressing morbidity.

Investments in healthy ageing should also limit or defer the need for high-cost services and supports.

Figure 1: Miles Morgan Australia's healthy ageing continuum²



“The economic value of a rapidly growing healthy older population is so large that **healthy ageing** should be aggressively pursued, on its own merits, as a societal investment.” Beard et al., 2011

Why focus on regional, rural and remote communities?

Almost 7 million people live outside the capital cities, the equivalent of Sydney and Brisbane combined. Townships with populations of fewer than 10,000 people, at a scale of approximately 9,056 communities, account for one in ten Australians.

People living in regional, rural and remote communities continue to experience poorer health outcomes than their fellow Australians, with lower life expectancy, and higher rates of disease and injury than people living in metropolitan areas (Australian Institute of Health and Welfare, 2018).

Populations in many rural communities are stabilising or declining, making it difficult for governments to provide a large range of services. Adequate access to health services and specialised care can therefore be challenging in these areas (Infrastructure Australia, 2019).

As our research shows older people in regional, rural and remote areas have increased risk factors for social isolation and loneliness, which actively contributes to poorer health outcomes in this population.

¹Aged care service demand is presumed to be the available supply plus any known consumer needs (i.e. waitlists for aged care services). However, the current demand assumptions for aged care services are based on 'supply driven demand', which is constrained by system-wide caps on supply. Waitlists for aged care services indicates the market is unsaturated (i.e. there is unmet demand), and that any increase in supply will quickly be absorbed. Consumers who feel they may not be able to access services – either due to service unavailability, cost, or any other reason – are unlikely to participate in the 'market' (referred to as 'spectating consumers'). These consumers are unobservable in the current demand calculations and represent 'hidden demand'. **'True demand' is only visible when supply approaches market saturation, reducing 'spectating consumers' to a minimum. The more aged care services become available and affordable, the more likely the true number of consumers seeking these services will be known.** | ²Adapted from World Health Organization, 2002

2. Synopsis

Social isolation is typically defined objectively, based on few or infrequent social contacts. By contrast, loneliness is described as a subjective dissatisfaction with the discrepancy between the actual and preferred level and quality of social contact (Holt-Lunstad et al., 2015). Lonely people are not necessarily socially isolated, and socially isolated people are not necessarily lonely. However, social isolation is a risk factor for loneliness (Beller & Wagner, 2018).

Research indicates that the more health issues an older person has, the higher their risk of isolation and loneliness. In turn, increased social isolation can have a negative impact on a person's health, with higher illness and mortality rates among lonely people (Commissioner for Senior Victorians, 2016).

Both social isolation and loneliness are associated with depression, cardiovascular disease and diagnosed diabetes (Batchelor et al., 2016; Cacioppo & Cacioppo, 2014), as well as higher blood pressure, sleep disturbance, and worse cognitive functioning (Luanaigh & Lawlor, 2008).

Social isolation has been identified as an important contributory factor in frequent and/or avoidable hospital admissions (Longman et al., 2013). Chronic loneliness alone has been found to have a mortality risk comparable to heavy smoking (Holt-Lunstad et al., 2015).

By way of a proxy indicator for loneliness, analysis of single person (lone) households for people who were aged 65+ in the 2016 ABS Census shows:

- Rural towns (large, medium and small) all have significantly more lone 65+ households when compared to the overall population in the region.
- These towns also have severe levels of lone 65+ households when compared with the working age population in the region.

Socio-economic status, social isolation and loneliness

A significant proportion of a person's functional ability in older age is the result of the cumulative impact of advantage and disadvantage across their lifetime (World Health Organization, 2015).

Socio-economic status is the primary non-medical factor affecting health (Daniel et al., 2018). Generally, it has been found that people in lower socio-economic groups have higher rates of illness, disability and death, and live shorter lives than people from higher socio-economic groups (Mackenbach, 2015).

According to rankings developed by the Australian Bureau of Statistics (ABS)³ the most disadvantaged Local Government Area (LGA) in Australia is in Queensland (Cherbourg). In fact, seven out of the 10 most disadvantaged LGAs in Australia can be found in Queensland.

Older people at higher risk of social isolation and loneliness include those living alone or those living in rural areas, those with low socio-economic status, older Indigenous people, and older immigrants (Batchelor et al., 2016; Kharicha et al., 2007; Zhu & An, 2013).

³Refer to the ABS Socio-Economic Indexes for Areas (SEIFA) 2016 and specifically the Index of Relative Socio-economic Disadvantage (IRSD) at abs.gov.au for access to relevant data cubes.

Linking social isolation and loneliness with malnutrition and frailty

Both social isolation and loneliness increase the risk of developing frailty⁴ (Davies et al., 2021). More than this, a reduced quantity of social contact increases frailty regardless of whether the individual perceives this to be negative (Davies et al., 2021). Additionally, simultaneous exposure to either living alone or having low social participation and to low financial assets significantly increased the odds for onset of functional limitations (Nilsson et al., 2011).

Subjective feelings of loneliness are associated with increased risk of malnutrition (Eskelinen et al., 2015) and social isolation has been found to increase the risk of malnutrition in older adults (Heersink et al., 2010). Additionally, socially isolated people outside of metropolitan areas are less likely to be able to purchase food that is nutritionally dense (Locher et al., 2005), leading to increased risks of malnutrition.

The World Health Organization defines healthy ageing as the process of developing and maintaining the functional ability that enables wellbeing in older age.

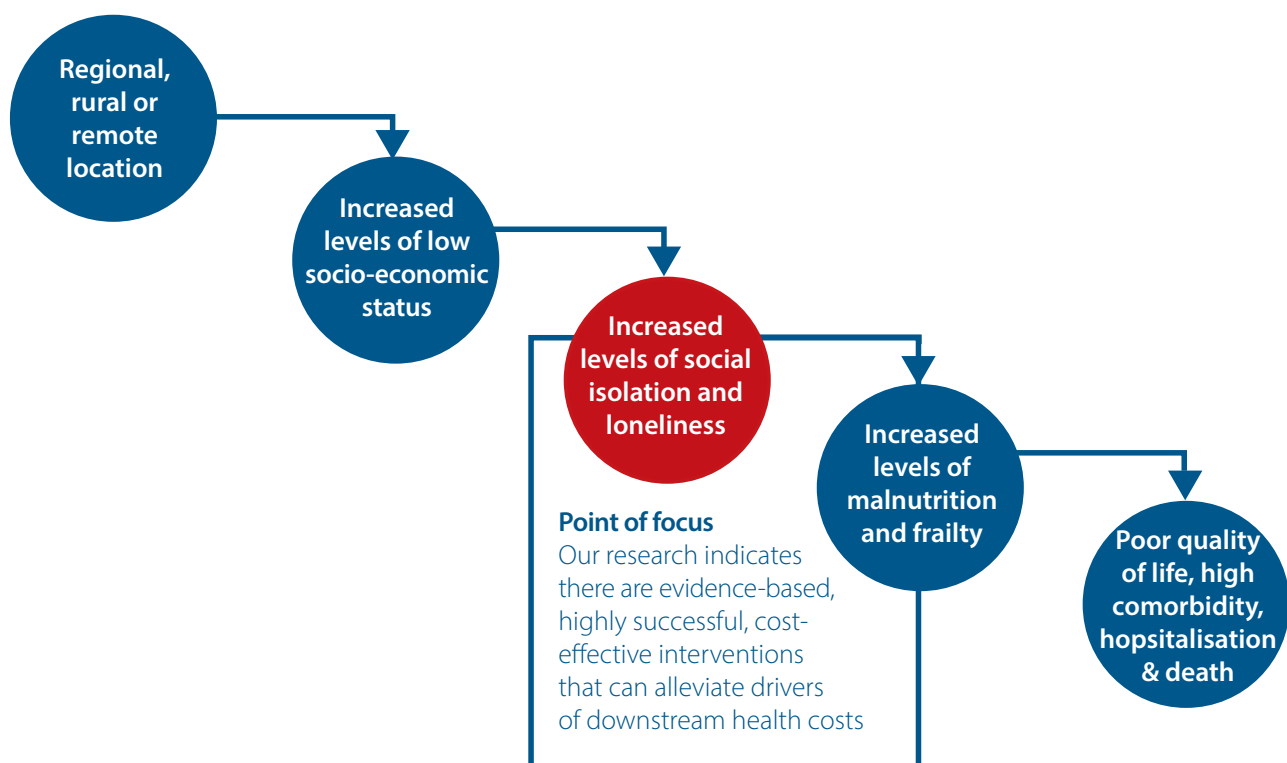
⁴Frailty can be described as a state of weakness, slowness, weight loss, exhaustion and low-physical activity (Goldstein et al., 2016) all of which can impact functional capacity.

3. Research findings

There are clear connections between the drivers of poor health outcomes in ageing populations outside of metropolitan areas. While simplified, the evidence indicates there are causal pathways that links the risk factors for loneliness and social isolation with their impact on health.

Continued decoupling the underlying risk factors of geographical isolation and access to resources from the individualised (frailty) and systemic (hospitalisation) consequences of social isolation and loneliness will hinder the development of successful interventions.

Figure 2: Summary of Miles Morgan Australia’s research findings



From our research, a clear case can be made for a new care service paradigm, starting with an enhanced level of cooperation between service systems – inter and intra government.

The protective factors known to mitigate social isolation and loneliness include:

- Early intervention at scale, as opposed to individual treatment and remediation, for key population groups such as older Australians in areas where access to care and support services is limited
- Combined interventions targeting both nutritional and social challenges faced by older adults living alone.

4. Detailed discussion

4.1 Key drivers of demand on health care systems

Geographical isolation

Regional, rural and remote areas often face greater challenges related to social determinants of health than metropolitan areas, or some inner regional centres (Allen et al., 2012, 2013; Beer et al., 2016; Inder et al., 2012).

In Australia these communities face disproportionately high health needs, often coupled with limited access to necessary health and aged care services (Allen et al., 2012; Inder et al., 2012; Wakerman & Humphreys, 2012).

Facilities in rural and remote communities are often required to service overlapping needs, for instance aged care facilities also housing young people with disability (Inder et al., 2012; Infrastructure Australia, 2019). In some cases, this may mean older residents are unable to access necessary services, with the Royal Flying Doctor Service reporting that an absence of aged care services in remote areas correlates with high levels of patient transfers to hospital for preventable admissions (Infrastructure Australia, 2019).

While multiple morbidity rates (patients with three or more chronic conditions) amongst older Australians are similar between metropolitan and non-metropolitan areas, rates are highest in 45-64-year-olds living in the poorest and more remote areas of Australia (McPake & Mahal, 2017).

Aboriginal and Torres Strait Islander peoples still face significantly reduced life-expectancy compared to non-Indigenous Australians (Department of the Prime Minister and Cabinet, 2019; Wakerman & Humphreys, 2012).

In the face of these high levels of complex health needs and multi-morbidities, rural and remote areas are also compromised by poor access to community and health services (Allen et al., 2013; Inder et al., 2012), and residents report the lowest levels of access to a 'usual GP' or 'usual place of care' (Australian Institute of Health and Welfare, 2018b).

These geographical challenges translate to difficulties with continuity of care, with a correlation between remoteness and the reliability of primary care providers being informed about treatment and follow-up care needs after specialist visits or hospital admissions (Australian Institute of Health and Welfare, 2018).

An ageing population

The well-documented trend of Australia's ageing population is increasing pressure on the country's health and aged care systems. On average, older Australians (aged 65+) visit a general practitioner more than ten times per year, twice as frequently as younger age groups (McPake & Mahal, 2017).

In addition to visiting GPs more frequently, these older Australians typically have more complex health needs. Data from the 2014-15 Australian Health Survey showed nearly 30% of older Australians reported three or more chronic health conditions, however other national studies suggest the figure could be as high as 70% (McPake & Mahal, 2017).

Current health systems around the world, including in Australia, predominantly focus on diagnosing and providing clinical treatments for existing conditions, with less attention given to preventative health care measures (Infrastructure Australia, 2019; MCPake & Mahal, 2017; World Health Organization, 2007).

Globally, the burden of disease has shifted from treating acute conditions to addressing a rise in chronic, non-communicable diseases, including cardiovascular diseases, diabetes, cancer, mental health disorders, respiratory diseases and musculoskeletal diseases (Australian Institute of Health and Welfare (AIHW), 2014; World Health Organization, 2007).

Australian hospitals are already facing challenges from unnecessary admissions and unnecessarily lengthy stays for older patients (McPake & Mahal, 2017). The 2019 Australian Infrastructure Audit found that the growth in hospital bed numbers is not keeping pace with population growth, and that in the future, state and territory governments will be unable to provide beds at the existing per capita ratio (Infrastructure Australia, 2019).

Without a paradigm shift there is a risk that limited resources will continue to be directed towards unnecessary admissions and lengthy hospital stays, at the expense of other health and social challenges (World Health Organization, 2007).

Socio-economic status

Targeting preventative and early intervention activities to address social risk factors can be an effective way of reducing future demand on health and aged care systems, whilst simultaneously improving the quality of life of older Australians (CSIRO, 2018; Productivity Commission, 2011).

If socio-economic status is the primary non-medical factor affecting health (Daniel et al., 2018), then it is important to acknowledge the relative exposure to areas of socio-economic disadvantage⁵ as a ratio to population in aged care regions⁶ is highest in very remote communities (64.7%), followed by medium (46.2%), small (38.7%) and large (38.0%) rural towns.

For 65–69-year-olds, the burden of disease ratio is 1.4 times as high for communities with the lowest socio-economic status (compared with areas with the highest socio-economic status) (Australian Institute of Health and Welfare, 2018).

The burden of disease not only rises with increasing disadvantage and age (up to the age of 85), but also increases progressively with remoteness and age (Australian Institute of Health and Welfare, 2018).

In Australia, people in lower socio-economic positions, or living in socio-economically disadvantaged neighbourhoods, have poorer diets as compared with those with a higher socio-economic status (Livingstone et al., 2017).

Health behaviours, including dietary habits, tend to cluster in population subgroups – leading to a prediction of more chronic illness in future ageing generations, especially among disadvantaged groups (Arabshahi et al., 2011).

High levels of socio-economic disadvantage limit opportunities to access healthier meal options, leading to nutritional imbalances associated with diabetes and other chronic conditions such as heart disease (Oakes, 2013).

An increase of one standard deviation in socio-economic disadvantage was associated with a 12% increase in the rate of malnutrition-related mortality in older adults (Lee & Berthelot, 2010b).

Malnutrition is associated with poor health outcomes including reduced functional status, decreased muscle mass, higher risk of permanent care placement, longer hospital stays and increased mortality (Covinsky, 2002; de Carvalho et al., 2019; Reedy et al., 2014; Robinson, 2018; Arjuna et al., 2016; Rist et al., 2012; Sharma et al., 2018).

Malnutrition is costly to the individual, to society and to the economy due to increased morbidity and health care resource use. The extra cost of treating a patient with malnutrition is 2-3 times greater than for a non-malnourished patient (Page & Winstone, 2018).

⁵Based on ABS SEIFA 2016 (IRSD) data accessed at abs.gov.au. | ⁶Aged care regions are based on the Modified Monash Model (MMM). MMM was developed by the Australian Government Department of Health in 2015 to better target incentive payments for rural doctors and is currently used as a proxy measure of access for a number of Australian Government health and social services.

- Globally, diets that are low in fruit and vegetables or high in sugar, processed foods or sodium are estimated to directly account for just over a quarter of the total disease burden (Murray, 2016).
- In the United Kingdom, the cost of treating a patient with malnutrition is more than double the cost of treating a well-nourished patient due to the increased use of health-related resources (Guest et al., 2011).

4.2 Linking drivers to consequences

People of low socio-economic status are more vulnerable to the experience of loneliness than those of middle or high socio-economic status (Kearns et al., 2015).

Similarly, it is clear that in Australia, low education, low household income and residing in a more disadvantaged area are strongly linked to an increased likelihood of being socially isolated and lacking social support (Kung et al., 2021).

The health inequalities that socio-economic status creates extends to peoples experience of social isolation and loneliness.

Research shows older people experience higher levels of loneliness (Hawkley et al., 2008). During the COVID-19 pandemic, older people are at increased risk of loneliness due to self-isolation, social distancing, and visiting restrictions (Hwang et al., 2020).

Loneliness is a significant risk factor for malnutrition (Iizaka et al., 2008). A study showed that people over 65 living alone have a significantly lower body mass index compared with those living with their family. Socially isolated older people often experience reduced appetite, eat fewer meals in a day and have a lower intake of protein, fruits, and vegetables in their diet (Ramic et al., 2011).

The impact of frailty and nutrition on functional capacity

Frailty is often related to micro-nutrient deficiencies, especially in women (Michelon et al., 2006).

Frailty is associated with increased health service use, health costs (Comans et al., 2016), and reliance on hospital emergency services (Darvall et al., 2019).

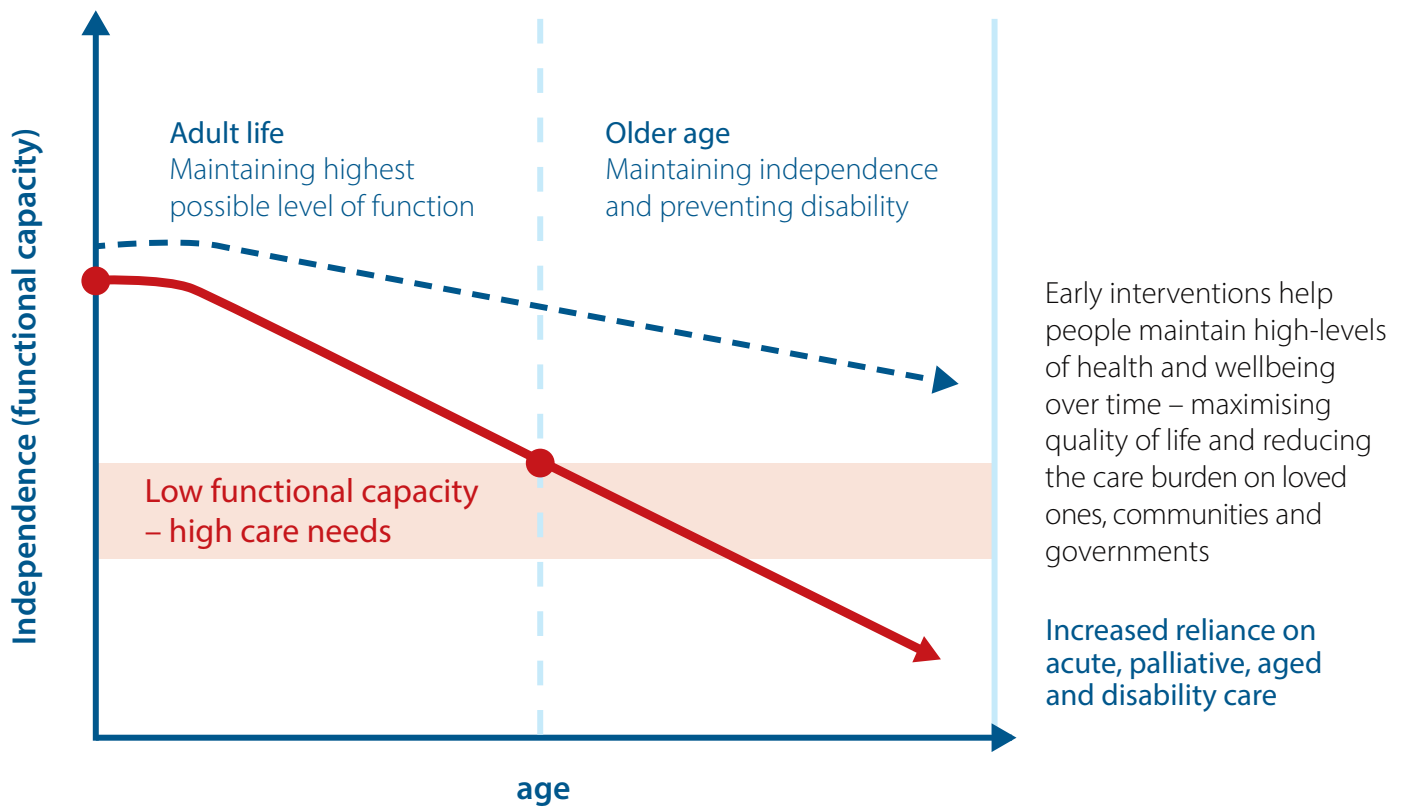
A wealth of evidence links poor nutrition and low levels of fitness in older people not only with increased risk of falls, but also increased severity of injuries resulting from falls (Sharma et al., 2018; Thomas et al., 2018; Walton et al., 2019; World Health Organization, 2007).

In 2010 it was reported that the average cost of treating a fracture resulting from a fall in old age was over \$92,000 (Access Economics, 2011).

In Australia, the growth in frail and pre-frail populations is projected to be significantly faster in outer metropolitan, regional and remote areas (Taylor et al., 2019).

By redesigning our health, aged and disability care systems, and with a stronger focus on prevention, we can help people maintain their independence and compress morbidity to the latest possible point in the life course, lowering costs and amplifying the economic benefits (Beard et al., 2011).

Figure 3: Benefits of maintaining functional capacity⁷



In general, the earlier an intervention is put in place – the more effective it is likely to be, especially if risk factors are addressed before old age when people’s natural adaptive capabilities are reduced (Friedrich, 2003; Oakes, 2013).

⁷Adapted from World Health Organization, 2002

4.3 Successful measures that address socialisation in ageing and isolated populations

The combination of social and nutritional support may have synergistic effects on functional capacity (De Castro, 2002; McHugh et al., 2015), as the case study below highlights.

Case study: Combining nutrition and social support

One of the largest nutrition assistance programs for older adults in the USA – and possibly the world – is the Elderly Nutrition Services Program. This program provides grants to state agencies to support home-delivered and congregate meals to people aged 60 and over (Colello, 2011).

The primary aim of the program is to improve the dietary intakes of older adults, improve socialisation opportunities for older adults and to delay the onset of adverse health conditions resulting from poor nutritional health or sedentary behaviour (Colello, 2011).

The program targets highly vulnerable groups including the very old, people living alone, people below or near the poverty line, minority populations and individuals with significant health conditions (Colello, 2011).

A major national evaluation of the elderly nutrition services found that the program makes substantial contributions in both improved diet and socialisation (Ponza et al., 1996).

In particular, participants have a higher average daily intake of nutrients and a greater average number of social contacts per month than a matched comparison group.

- Meals supplied well over 33% of the recommended dietary allowances for key nutrients, were nutrient dense, and significantly increased the dietary intakes of participants.
- The program provided direct opportunities for socialisation, either through contacts at the congregate sites or conversations with people delivering meals to the home (Ponza et al., 1996).

Other key outcomes were the reduction in social isolation seen in the evaluation participants, community development, linking agencies with the home and community-based long-term care system, and the cost effectiveness of the program (Ponza et al., 1996).

Participants eat the meals and perceive the social contacts as meaningful. - Ponza et al, 1996

Social support appears to be best received if presented as incidental. Social contact is more acceptable to older adults than purposeful contact, which may highlight a stigmatised condition of social isolation (Farmer et al., 2010).

Research suggests services that build social interaction into interventions that improve nutrition will deliver better outcomes for governments, communities and individuals, by contributing to a reduction in the level of unnecessary hospital admissions, reducing the duration of stays in hospital and improving the management of chronic, non-communicable diseases.

For the cost of just one day in an intensive care unit (Hicks et al., 2019) or one week in residential aged care (Aged Care Financing Authority, 2019), two people could receive five nourishing meals a week, with social support available during each meal delivery, for almost a year⁸.

Early intervention programs targeting nutrition, social isolation and loneliness also have a greater impact in regional, rural and remote areas because these areas have greater exposure to health and social risk factors.

During the COVID-19 pandemic, it was clear to decision-makers that older people would find shopping and preparing meals difficult. People living alone would also have fewer social cues to eat. When considering how to combat social isolation and loneliness during the COVID-19 pandemic, governments internationally, including the Australian Government, invested in Meals on Wheels and similar nutrition and support services⁹.

Research shows that Meals on Wheels and similar services play a vital role in not only alleviating loneliness but also in improving dietary intake and helping prevent malnutrition in older people living alone (Wright et al., 2015).

⁸Based on current Australian Government funding for meal services under the Commonwealth Home Support Program, utilising a Meals on Wheels service model, which includes face-to-face contact, and social support where required, as part of each meal delivery. | ⁹Joint media release issued on 31 March 2020 by the Hon. Scott Morrison MP, Prime Minister, and Senator the Hon Richard Colbeck, Minister for Aged Care and Senior Australians, about funding for vital meal delivery services to support senior Australians. Viewed at: <https://www.health.gov.au/ministers/the-hon-greg-hunt-mp/media/meals-on-wheels-programs-reinforced-to-help-senior-australians-at-home>

5. Actionable information

Preventive interventions struggle to fit neatly into government funding allocations alongside curative, diagnostic and palliative interventions, because of the somewhat uncertain and distant nature of their outcomes.

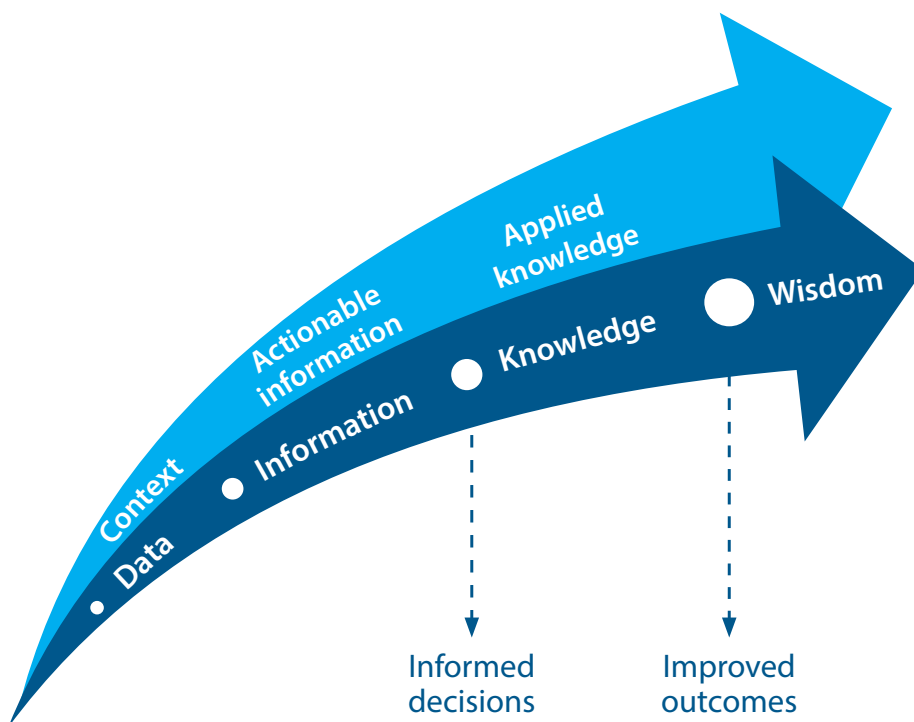
This places early intervention measures in a league of their own and often makes decision-makers uncomfortable about diverting resources away from uses that have a more immediate and certain return, particularly in a tightly resource-constrained health and care systems in which it is not even possible to fund all potentially available curative interventions. (Sassi & Hurst, 2008).

Within a constrained budgetary environment, how can decision-makers ensure services are delivered at the right time, in the best place, for people with different levels of capacity, and different personal circumstances and aspirations?

5.1 Seek actionable information

Informed decisions are taken when information is presented in a way that can be easily utilised – that is, ensuring the evidence-base is the right mix of timely, credible and relevant.

Figure 4: Applied knowledge hierarchy¹⁰

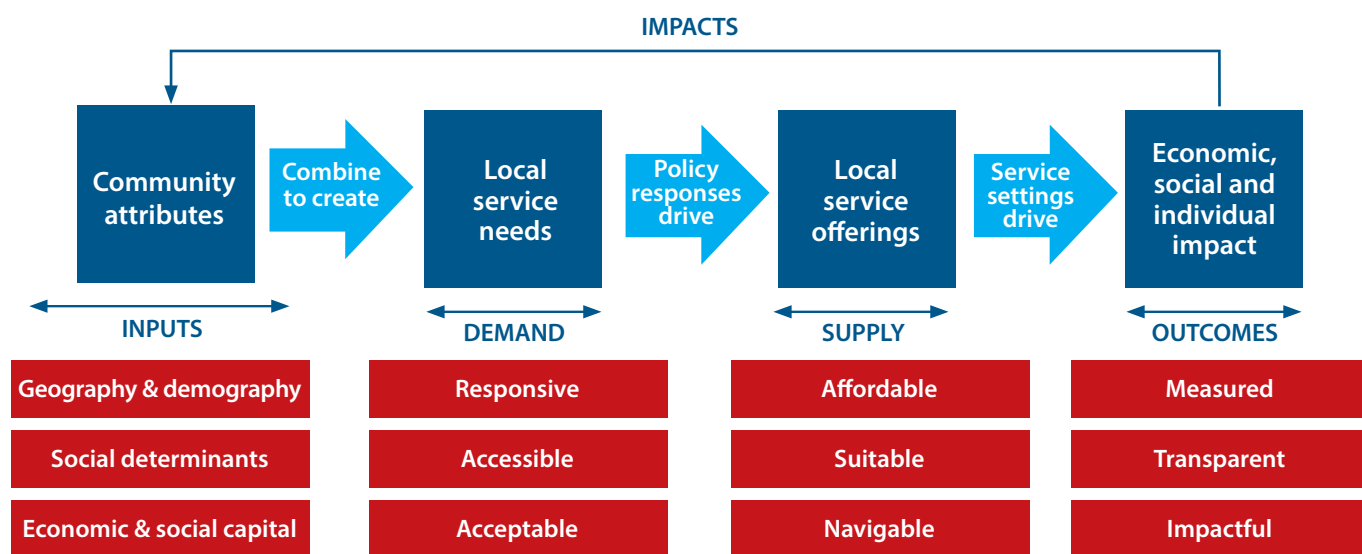


¹⁰Adapted from Zeleny, 1987

Miles Morgan Australia has created a knowledge framework to support policy design so that decision makers can actively seek the information required to ensure citizens have access to the services they need.

Starting with Penchansky and Thomas’s seminal work characterising factors influencing entry and use of care systems (later expanded in Saurman, 2016), Miles Morgan Australia’s knowledge framework identifies the basic information requirements for different stages of the policy lifecycle.

Figure 5: Miles Morgan Australia’s knowledge framework for care services¹¹



¹¹ Adapted from Saurman, 2016. The dark blue boxes represent knowledge requirements. The red boxes represent information requirements.

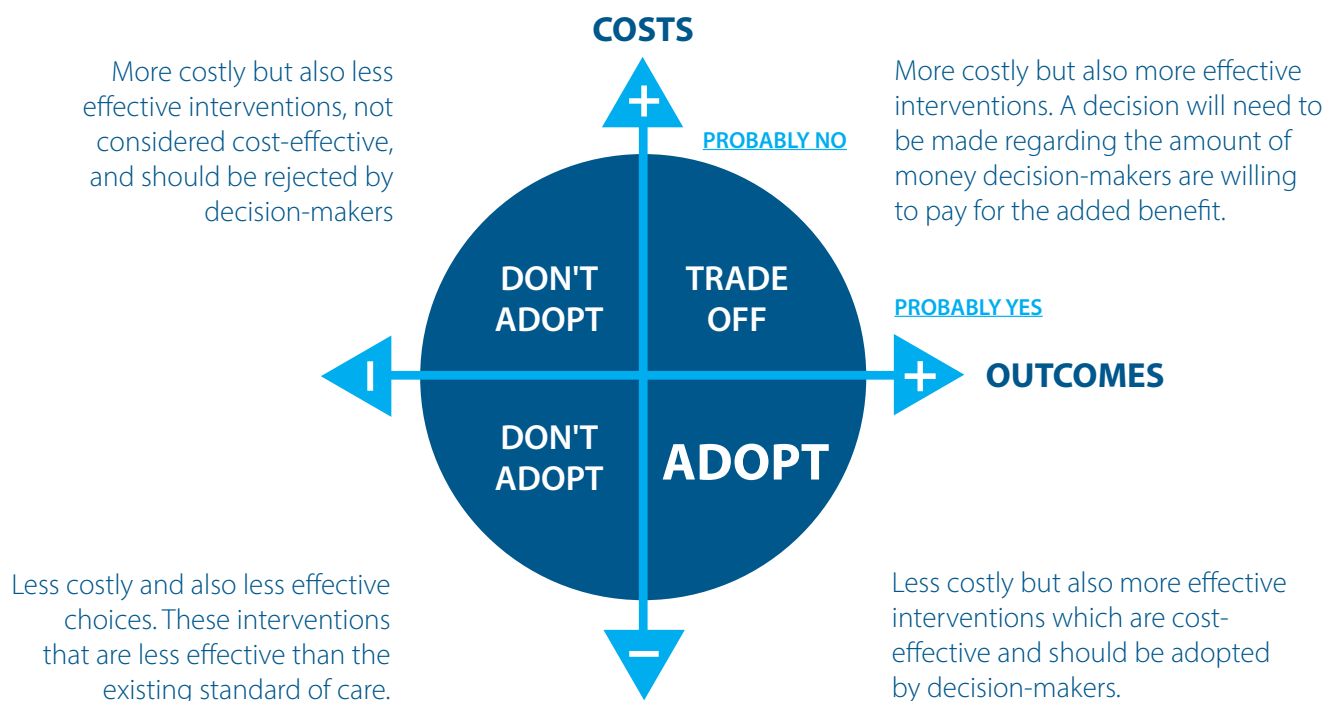
5.2 Building a case for early intervention

While the evidence points to any number of healthy ageing interventions that could lead to cost savings – at the individual, area and population level, many initiatives appear to be overlooked due to poor data or an inability to frame a compelling business case.

While the knowledge framework set out in Figure 5 provides a pathway to build a solid foundation of actionable information, any successful business case will also require information on cost-effectiveness.

Figure 6 presents a cost-effectiveness plane to structure comparative assessments of healthy ageing initiatives.

Figure 6: Cost-effectiveness plane¹²



¹²Adapted from Page & Winstone, 2018.

The high cost of inaction

For seniors, less social interaction may mean an increased risk of health issues (physical, mental, and emotional), requiring more support in attaining services, and a less developed sense of community (Gitelson et al., 2005).

Failure to address risks of malnutrition puts unnecessary additional pressure on already constrained health care systems and can also lead to sub-optimal quality of care (Page & Winstone, 2018).

National cross-sectional studies worldwide indicate that significant improvement in dietary patterns and nutritional intake is possible (Pietinen et al., 2008).

Longitudinal studies on dietary habits and cardiovascular disease risk in older populations have also demonstrated that dietary intervention strategies for older adults can prevent cardiovascular disease morbidity and mortality, and improve quality of life (Tourlouki et al., 2009).

A growing body of evidence supports refocusing health and aged care systems away from medically- focused treatments from GPs, to a system focused on prevention and early intervention undertaken by multi-disciplinary teams (McPake & Mahal, 2017).

Compared to other OECD countries, Australia currently spends very little on preventative health measures, approximately 1.5% of total health expenditure (Infrastructure Australia, 2019).

- Australia is amongst the most expensive countries in relation to emergency room visits and hospitalisation costs related to falls in older age (World Health Organization, 2007).
- Under-nourished older adults are more likely to experience adverse outcomes upon discharge and are more likely to be readmitted to hospital (Locher & Wellman, 2011).

Malnutrition is preventable and treatable, and in some instances is a completely reversible condition. From a physiological standpoint, malnutrition can be treated by providing the energy, protein and micronutrients required to meet physiological need (Wellman & Kamp, 2017).

While a person's nutritional needs, and their body's ability to absorb different nutrients, will change as they age (Walton et al., 2019), malnutrition is not an inevitable consequence of ageing (Rist et al., 2012).

6. Opportunity to act

Service delivery models must adapt to meet the widely differing needs of regional, rural and remote communities and overcome the challenges of geographic spread, low population density, limited infrastructure and the significantly higher costs of delivery in these areas.

An opportunity exists to strengthen early intervention services across regional, rural and remote Australia through appropriate investment to create effective, integrated regional models of care that are fit for context.

6.1 Focus on what is preventable and treatable

Combined interventions targeting both nutritional and social challenges faced by older adults living alone, should help to address early or over-utilisation of health services.

Programs providing regular home-delivery of nutritionally balanced meals to older people living in the community have been found to be associated with:

- Decreased malnutrition
- Lower levels of depression and loneliness
- Improved social connections
- Reduced risk of injury from falls through improved bone and muscle strength, alongside avoidance of dizziness/delirium caused by hunger
- Improved recovery after illness and injury, and fewer instances of hospital readmission (Luscombe-Marsh et al., 2014; Sharma et al., 2018; Thomas et al., 2016, 2018; Thomas & Mor, 2013; Walton et al., 2019).

Compared to the high costs of hospitalisation from avoidable illness and injury, nutritional programs have been shown to be a cost-effective and scalable intervention for ageing and isolated populations (Access Economics, 2011; Sharma et al., 2018; Thomas et al., 2018; Thomas & Mor, 2013; Walton et al., 2019; World Health Organization, 2007).

6.2 Improve service system integration

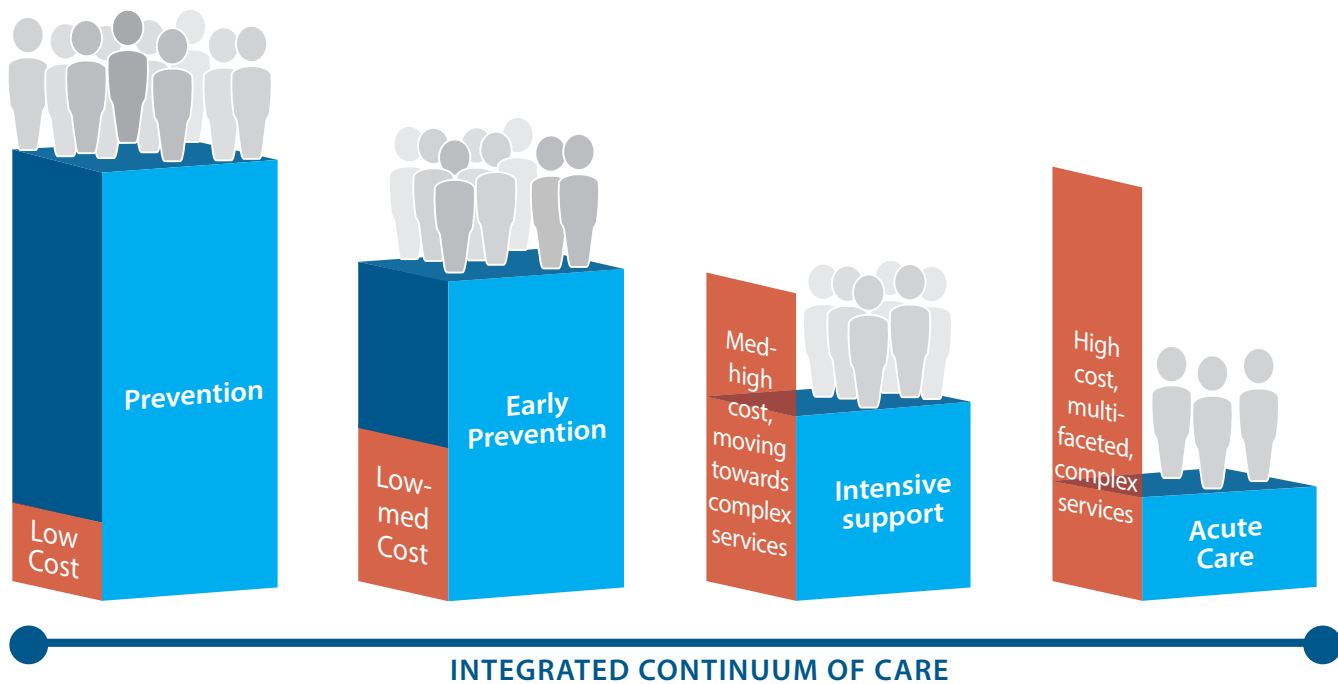
A new health care paradigm, focused on prevention and early intervention at scale, as opposed to individual treatment and remediation, is likely to aid in managing the increased demands an ageing population will place on the health system (Friedrich, 2003; Infrastructure Australia, 2019; World Health Organization, 2007).

A commonly reported disconnect between the health care system and community-based services is that many older people in need of nutritional resources and support at home, especially post-episode, post-illness or post-hospitalisation, do not receive this support (Locher & Wellman, 2011; Sahyoun et al., 2009).

For example, community care workers are on the frontline of addressing malnutrition and social isolation in community-dwelling older Australians – and yet they have limited capacity to provide or receive information on the people they are in weekly, and sometimes daily contact with.

Improving interoperability between service systems will not only enhance the level of cooperation and collaboration between care professionals, it will also allow for a deeper understanding of health and ageing policy issues – creating a pathway for the development of more effective and efficient early interventions (World Health Organization, 2007; Grenade & Boldy, 2008; Wakerman & Humphreys, 2012; McPake & Mahal, 2017).

Figure 7: Imagining an integrated continuum of care



Prevention:
Coordinated population health planning, and a greater focus on social determinants of health (i.e. location)

Early intervention:
Proactive services based on epidemiological data, early intervention services **receive** referrals from local paramedics, GPs & allied health professionals

Intensive support:
Early intervention service providers can **send** (authorised) information to local allied health professionals & GPs on behalf of their clients

Acute care: care systems work together to provide wrap-around coordinated care, including intensive post-hospitalisation support

If proper pathways and resources are set in place, then nutrition-lead interventions will not only drive improvements in quality of life – they will also have a profound economic impact in terms of reduced health care utilisation and costs.

Appendix 1

Research approach

This document does not represent a systematic review, nor is it intended to capture the diverse, complex and often revisited theoretical and empirical research on priority health interventions for an ageing population.

The purpose of this research was to investigate the *benefits of addressing social isolation and loneliness*.

This research is presented in similar terms to a literature review – that is, to summarise and synthesise the arguments and ideas relating to the question under investigation – providing a foundation for the reader to conduct further exploration based on a detailed understanding of issues and opportunities.

The Miles Morgan Australia research team first searched journal databases using a combination of terms relating to the question, including but not limited to “social isolation”, “loneliness”, “connections”, “connectedness”, “community”, “resilience”, “social determinants”, “early intervention”.

Numerous online databases were searched, with the following electronic sources accessed: Pubmed; Elsevier ScienceDirect; BMJ Journals Online; SAGE Journals online; ProQuest; PMC; BMC; The Cochrane Library; Blackwell-Wiley; ASSIA; Oxford Journals; JSTOR; and Cambridge Journals Online.

Following a first pass of the available literature, the research focus was refined to better reflect the language and intent found in the papers most pertinent to addressing social isolation and loneliness. The research team also considered grey literature, government reports, program guides and resources.

Subsequently, our search terms were widened to include one or more of the following: “socio-economic”, “healthy ageing”, “ageing”, “aged”, “frailty”, “functional decline”, “functional capacity”, “malnutrition”, “nutrition”, “socialisation”, “regional”, “rural”, “remote”.

Queensland was not used as a search term or filter.

Sources were limited to those in English. International sources were analysed, where appropriate.

Sources relating exclusively to First Nations communities and/ or populations were not excluded from analysis however, culturally specific findings were not reported.

All sources considered by the research team are listed below under ‘Reference material’.

Reference material

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