The community aged care model in rural and remote Australia

Analysis of supply and demand in relation to aged care and the aged care workforce: Final Report

presented to

Helping Hand Aged Care

by

The Australian Institute for Social Research

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1 INTRODUCTION: CONTEXT FOR THE RESEARCH

This Report brings together findings from project exploring the viability of the community aged care model in the face of population and workforce ageing, increased demand for care services, and increasing challenges related to resource usage – with specific application to rural South Australia.

Australian aged care policy is increasingly focused on the provision of care in the home and the community. The implementation of the HACC program in 1985 was influenced by broader moves to de-institutionalisation and by the goal of prevention of unnecessary or premature institutional care for older people. The importance of providing a choice between residential or community aged care has also been widely recognised. The piloting and implementation of aged care packages, providing the equivalent of low to high residential aged care in the home has seen the continuing strengthening of the growth of community based care.

While most people would prefer to age in the environment of their own home and local community, the universal application of the community care model brings a number of implications that are not yet tested. For example, will family and friends be able to provide the level of support on which this model depends? Are occupational health and safety standards able to be met to an equivalent standard achievable in a residential setting? Will efficiencies in the allocation of staff be compromised? As clients' dependency levels grow, how can the challenges associated with keeping them safe be addressed, especially when their care packages do not support constant monitoring and surveillance?

At present, most aged care packages, whether HACC or Commonwealth funded, involve a small number of hours of service provision for most clients. This means that care package staff spend a significant proportion of their time travelling from one client's home to another. In the face of scarce resources and increased demand for aged care due to an ageing population, it is not known if the aged care system's future workforce availability can support increased uptake of community based care.

There is also a gap in available information about the aged care workforce due to population and workforce data bases not being designed to yield an accurate profile. ABS data provide a category for residential aged care but not for community aged care. To our knowledge, there has not been a Census undertaken that would yield an accurate aged care workforce profile identifying those in the residential and community care (HACC program and Commonwealth funded and regulated) sectors. The workforce involves a wide range of occupations – including registered and enrolled nurses, the various allied health occupations, geriatricians, domestic staff, home maintenance, policy and management staff, and personal care workers. In the absence of a defined aged care workforce category, developing a profile relies on estimates.

It is also not known how many of the current aged care workforce will continue to work past the usual retirement age, and if they do, how best to enable them to work effectively in the face of their own ageing-related health and other issues. Australia is experiencing skills shortages in a number of occupations and these are projected to continue for at least the next ten years, and it is not known what this may mean for the aged care workforce. The overriding question is – *Will workforce supply be sufficient to meet the demand for community care in the next ten, then twenty years?* If there is a shortfall in meeting projected demand, apart from developing strategies to meet that gap, there is also an urgent need to identify strategies to ensure that workforce training, support, development, and deployment makes maximum use of scarce and valuable resources. This would include redesigning jobs, workplaces and care delivery. Just how this can be done is currently unknown.

Finally, it is not known how the *Baby Boomer* generation's experience of supporting their own parents in a strongly community based aged care system, will affect their attitudes to their own care when they are old. The community care model depends on the input of friends and family and the Baby Boomers are now being referred to as the 'sandwich generation' – caring for older parents while still having parental responsibilities of their own, and usually juggling this with work. The concept of Work-Life-Balance is becoming increasingly important. Will the pressures faced by many *Baby Boomers* act as a deterrent to their support for the community based care model? This is a question that requires its own research project.

With these challenges in mind, Helping Hand Aged Care (HHAC) commissioned the Australian Institute for Social Research (AISR) to undertake research with a specific geographic focus on the mid North of South Australia. This is where the bulk of HHAC's rural workforce is located, and given workforce efficiencies associated with travel time involved in community care provision, it makes sense to study the issue where distance and time are more pronounced – as occurs in a rural setting. The mid North region also offers a degree of diversity in setting, with town sizes vary from small to large as well as more isolated rural environments. It is intended that findings from the study will be extrapolated to the rest of the State.

One of the Mid North region's greatest challenges over the next few decades will be to deal with issues arising from population ageing. The South Australian population as a whole is in the midst of transition from a population dominated by younger ages, to one in which older people will be predominant. According to Australian Bureau of Statistics (ABS) projections, by 2056 there will be less than two people of working age for every person aged 65 years and over (ABS: 2009)[1]. Furthermore there are indications that population ageing will be most significant in non-capital city areas (Hugo: 2001)[2].

1.1 Guiding research questions

The following research questions were identified at the inception of the project.

[1] Australian Bureau of Statistics (2009) *Future population and ageing*, ABS cat No. 4102.0

[2] Hugo, G. (2001) ' What is really happening in regional and rural populations', In: Rogers, M.F. and Collins, Y.MJ., Eds, 2001, *The Future of Australia's Country Towns*, La Trobe University, Bendigo, pp. 57–71

1 *What will be the key features of population ageing over the next 10-20 years in the mid North region of South Australia?*

2 *What will this mean in terms of future demand for care, and the future aged care workforce?*

3 *Are there other forms of demographic, economic, technological and social change that need to be taken into account in projecting aged care workforce requirements? For example, will the growing demand for mining sector workforce and the relative proximity of the mid-North to mining sites be a source of competition?*

4 *What impact will internal and overseas migration have on those projections?*

5 *Taking the first four questions into account, what scenarios can be modelled for the community aged care workforce in 10 to 20 years' time, given inherent inefficiencies eg travel, petrol? How would this compare to the residential care workforce from an efficiency perspective?*

6 *Are there research studies focused on workforce efficiencies and resource issues associated with home based aged care?*

7 *Are there research studies focused on the impact of caring for older parents on the Baby Boomer generation on their expectations for care in their own old age?*

8 *What are the gaps in existing research and what specific studies should be recommended to address those gaps?*

1.2 Project methodology

To date, all research questions – except for #5 (which will be addressed through a separate project based on economic modelling methodology) have been addressed. There have been two main components to the project methodology, involving qualitative and quantitative research strategies –

I. A review of the literature – presented as a Discussion Paper (Report 1)
II. An analysis of relevant population data, of labour force data, of information about aged care services in the defined study Region, and of Helping Hand Aged Care workforce data – presented as Report 2.

The Discussion Paper was structured to provide information about –

- Future demand for community aged care services in Australia
- The role of informal care in the community care model
- Future availability of informal carers

- The impact of consumer-directed care on community care services
- Studies of the community care model from an efficiency perspective
- Community aged care in rural and remote settings
- Strategies for achieving efficiencies in community care.

Report 2 was designed to present current demographic and workforce data alongside indicators of future *demand* for aged care services (current and projected population of older people) and future *supply* of workers (current and projected working population) across the region studied. The report structure reflected this aim and had five main components –

- A demographic profile of the population living in the region studied – by age, gender, people requiring care and unpaid carers, people of non English speaking backgrounds, all by Local Government Area, and based on 2006 Census data.

- Projected population changes in relation to a) the older population (65 years and over) and b) the working population (15 to 65 years) across LGAs in the region studied, using Department of Health and Ageing Projections, 2007-2027.

- Mapping of existing residential aged care services in the region studied, using 2006 Census data and 2008 Department of Health and Ageing data, and highlighting Helping Hand facilities. (It was not possible to map community aged care services with available data.)

- An overview of key characteristics of the HHAC workforce located in the Mid North region – by work role and hours, by location and age group, by employment status, by hours worked, by age and gender, and in comparison with the HHAC workforce as a whole.

- An analysis of future workforce supply, based on Department of Health and Ageing Projections, 2007-2027. This examines the projected age and gender of the population in the region studied and analyses the projected ratio of working aged people to older people as a key indicator of future capacity to meet demand for aged care.

1.3 Definition of the region studied

The geographic boundaries of the region studied were defined by HHAC and include the area within which the organisation currently delivers care as well as some adjoining areas. While HHAC was primarily interested in the Mid North agricultural area of SA, the northern urban fringe area (Barossa region) was also of interest as a potential source of additional aged care clients and workers in the future. As urban fringe areas and agricultural areas tend to have quite different demographic compositions and also tend to differ in important drivers of population growth/decline, Report 2 presented information on each of these two zones as well on the *'Helping Hand Aged Care Study Region'* as a whole (which combines both).

The two zones comprising the *'Helping Hand Aged Care Study Region'* (the Study Region) consist of the following Local Government Areas (LGAs):

Zone A: Mid North Region (number of persons 46,171[1])

- Clare and Gilbert Valleys
- Goyder
- Mount Remarkable
- Northern Areas
- Orroroo/Carrieton
- Peterborough
- Port Pirie (City and Balance)
- Wakefield

Zone B: Barossa region (number of persons 40,813[1])

- Barossa (Angaston, Barossa and Tanunda)
- Light
- Mallala.

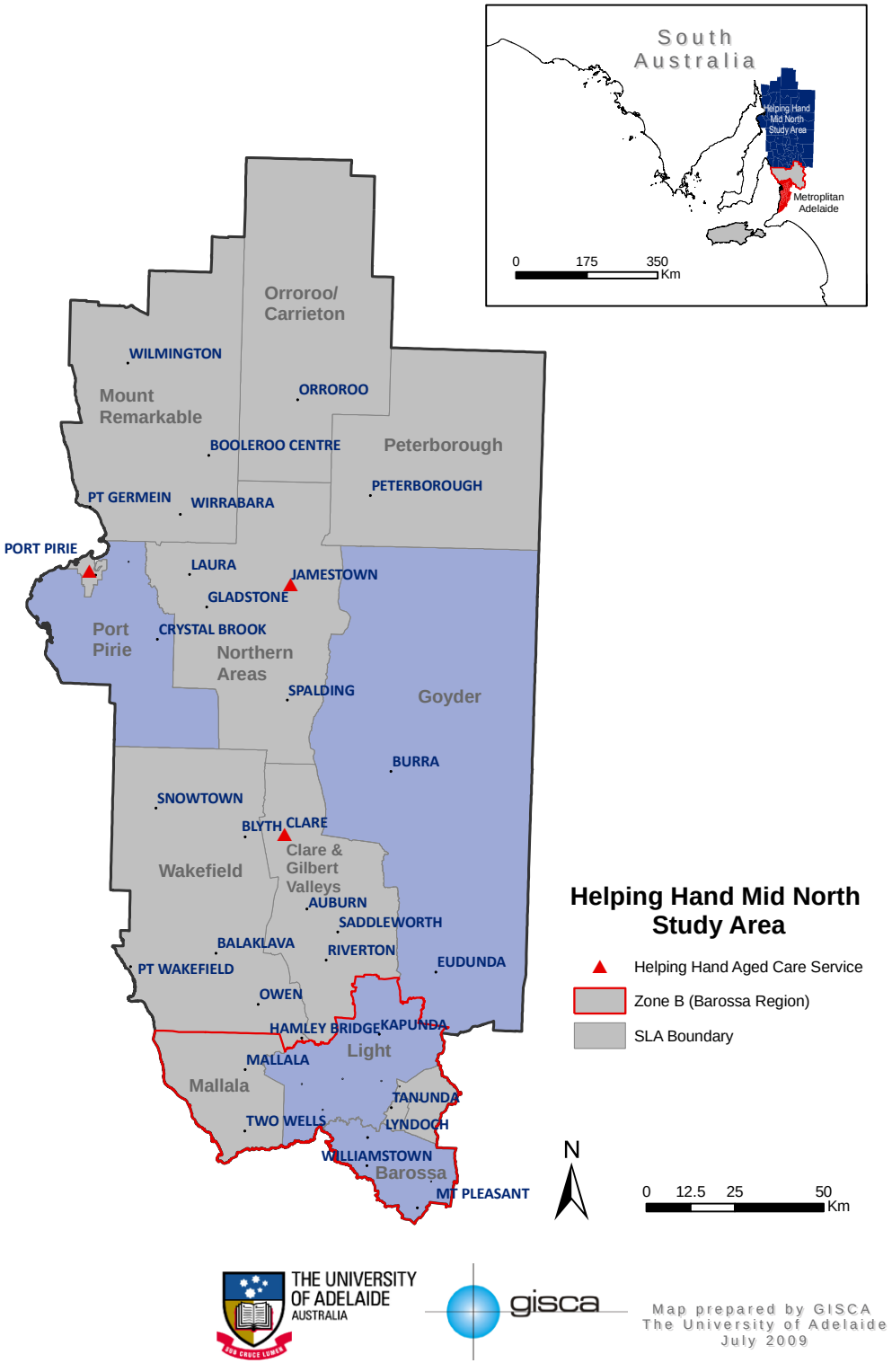
The Study Region offers a diversity in setting, from more densely populated areas such as Barossa LGA (20,548 persons) and large regional centres such as Port Pirie and surrounds (17,142 persons), down to more isolated rural environments such as Orroroo/Carrieton LGA (935 persons).

Figure 1 provides a map of the Study Region. Zone B (Barossa subset) is indicated in a **red** border and the Statistical Local Area (SLA) boundaries in **light grey**. *SLAs are based on the geographical boundaries of incorporated local government bodies (LGAs) and the SLA boundaries were utilised in this case to split the LGA into smaller units in the case of the Barossa (Angaston, Tanunda) and Port Pirie (City and Balance).* For further explanation of Local Government Areas (LGAs) and Statistical Local Areas (SLAs), please refer to ***Error! Reference source not found.*** of this Report.

The map inset indicates the HHAC study region in **blue** and a **red border** for Zone B (Barossa) against South Australia as a whole. Metropolitan Adelaide Statistical District is also indicated (filled **red**) within the map inset. **Figure 1** also shows the location of current Mid North HHAC facilities (indicated in a red triangle ▲) at Clare, Jamestown and Port Pirie. There are a number of other rural centres within the study region; townships with a Census population (ABS Population Census, 2006) are also shown on the map.

Figure 1: Map of the Helping Hand Aged Care (HHAC) Study Region

Source: ABS 2006 Geographical boundaries (GISCA)



2 SUMMARISING THE KEY FINDINGS FROM THE LITERATURE REVIEW

This Discussion Paper was framed by Research Questions 6, 7 and 8, and presented findings from the literature relating to -

- Future demand for community aged care services in Australia
- The role of informal care in the community care model
- Future availability of informal carers
- The impact of consumer-directed care on community care services
- Studies of the community care model from an efficiency perspective
- Community aged care in rural and remote settings
- Strategies for achieving efficiencies in community care.

2.1 Future demand for community aged care services in Australia

The most significant driver of demand for community aged care is population ageing. Changing fertility and life expectancy rates, general improvements in health and a fall in age-related disability rates, improvements in the treatment of illness and disease will see an increase in the number of people living at very old ages (Access Economics, 2004: 26; Madge, 2000: viii). The proportion of the population aged over 85 is projected to rise from 1.5 per cent to 5 per cent between 2003 and 2044 (Productivity Commission, 2005a: 7). Numerically, this means that those aged 85 and over will quadruple by 2040 (Access Economics, 2004: 27-28).

Apart from demographic change, the Productivity Commission has identified these other factors as affecting demand for aged care –

- **Age-specific disability rates**, which are falling in Australia and most other OECD countries. This trend is projected to reduce overall demand for residential care.
- **Wealth and income effects** – the combined effect of economic growth, net capital accumulation, increasing asset prices and greater superannuation coverage are seen as increasing the purchasing power of older people. Increased wealth and income may reduce the likelihood of disability while also increasing future demand for services, with the net impact of these opposing forces unable to be determined.
- **Institutional factors** – demand for formal care is regulated by government regulation of the availability of subsidised places and entry limited by needs based assessment. These act as rationing mechanisms and the way in which they are applied in the future is difficult to determine, being influenced by the combined impact of community expectations and government policy (Madge, 2000: viii-ix, 39).

Based on current patterns of service, the Department of Health and Ageing has estimated that the number of people aged 85 and over needing community care services will increase from 81,000 in 2002 to 140,000 in 2019 (Allen Consulting, 2007: 28, citing 2003 Departmental data). This estimate is supported by Productivity Commission projections which see the number of HACC and CACP clients more than doubling over the next forty years (Allen Consulting, 2007: 28; Productivity Commission, 2005a: 179). The model developed by Access Economics for the 2004 Hogan Review projects significant increases in aged care consumers between now and 2042, with the sharpest rise associated with the HACC program. (Access Economics, 2004: 10).

The majority of older Australians are expected to live in community settings (Brown *et al*, 2004: 2). In part, this reflects consumer preferences, but fulfilling those preferences becomes increasingly difficult for both informal carers and service providers when needs become more complex. **A key policy question is how suitable is the community care model, from both an effectiveness and efficiency perspective, for people whose needs require intensive support.**

Critical to the ability of older people to live independently in their own homes is the design of those homes, with significant potential existing to maximise that independence and quality of life. The Discussion Paper noted the importance of this, and the need for policies that address accommodation and aged care as two sides of the coin of independent living. **Helping Hand Aged Care may have a role to play in providing housing that maximise independent living ability.**

2.2 The role of informal care in the community care model

Informal care is the dominant form of care for older people in most countries but is often regarded as a 'free' resource by policy makers because of its hidden costs being borne primarily by informal carers, and to a lesser extent by the public sector and society (Glendinning *et al,* 2004: 24). A key feature distinguishing community from residential aged care is its reliance on informal carers. The report commissioned by Australia's Community Care Coalition is one of few that acknowledges the important role of informal care and its relationship to community care (Allen Consulting, 2007).

Unpaid, informal care has been estimated to account for some **74 per cent** of support provided to older Australians and people with a disability, and 63 per cent of all informal carers live with the person in their care (NATSEM, 2004: 28). *Section 3.1.2* identifies the LGA of Orroroo/Carrieton as having the highest proportion of informal carers in the Mid North Region.

Changing demographic patterns and increasing life expectancy at advanced ages brings a number of implications for family care by adding to the complexity of family structures. Potentially four generations may supersede three generations as the predominant structure, of which two may need to be supported by the two younger generations (Jacobzone, 1999: 6).

Carer willingness and availability will also vary across different groups of carers and across the stages of life – for example, grandparents providing care for grandchildren to support their own children's

participation in paid work, parents combining child rearing with paid work, and older retired couples supporting each other.

What is not known is the future willingness of informal carers to accept this responsibility. ABS surveys of carers show that the key motivator is a wish to provide the best possible care and to fulfil family obligations. Therefore, factors which would work against this include increasing rates of relationship breakdown, reduced family formation among young adults, widespread changes in the traditional role of women as carers, and separation of parents from adult children. In the past decade or so, there has been a 64 per cent increase in lone person households and this trend is predicted to continue (AIHW, 2004: xv).

Two other factors that affect motivation to provide informal care are –

a) The **costs (direct and indirect) to informal carers**, and participation (or need to) in paid employment. More than half of carers experience declines in their physical health and two-thirds believe that their mental and emotional health has suffered from providing care. One-third have been physically injured in the course of providing care and 30 per cent face difficulties in attending to their health and other appointments because of their caring duties (AMP:NATSEM, 2006: 17, citing previous research findings).

b) **Participation by women in paid employment** - women, the traditional source of informal care, now comprise a significant part of Australia's skilled workforce with a higher proportion having diploma or associate diploma qualifications than males. Female labour force participation increased from nearly 54 per cent to nearly 58 per cent between 1999 and 2007 while male participation fell slightly. The labour force participation of people of working age is projected to rise from 76.2% in 2006-07 to 78.1% in 2046-47, with female participation rates expected to increase across age groups but particularly for older women (TOCC, 2007: 12, citing Treasury data).

   At the same time, the need to provide informal care can lead to a reduction in working hours, or under-employment. Recent research by the Taskforce on Care Costs (TOCC: 2007), found that

   - One in four carers had reduced their paid work hours because they could not afford to purchase formal care, with little difference existing in relation to care of older people and care of people with a disability.
   - Furthermore, 34% of carers surveyed believed that their careers had suffered because of competing work and caregiving responsibilities, and 67% stated that they would refuse a job or promotion if it prevented them from fulfilling those responsibilities.
   - 44% had selected work roles below their skill level in order to have the flexibility they needed to balance their responsibilities (TOCC, 2007: 22-23).

These findings highlight the importance of **workplace conditions** in providing appropriate leave and flexibility. In assessing the future of community aged care, the degree to which workplaces support

informal care is a variable which must be taken into consideration. In addition, broader **legislative provision** to prevent the discrimination of employees needing time away from the workplace to manage the care of older people is another critical factor. While some protection exists through State Government anti-discrimination legislation, at Federal level, there is a significant gap regarding caregivers (TOCC, 2007: 18) and the Australian Human Rights Commission has recently recommended that the Federal Government address this gap through appropriate legislation.

Workforce participation and retention for mature aged workers is now a high priority for governments in the face of workforce skills shortages and ageing. At the same time, government policy promotes aged care in the community, which is reliant on a supply of informal carers, most of whom will be mature aged or older. These two policy directions are in conflict and this issue will need to be addressed as the demand for informal care increases.

2.3 Future availability of informal carers

Critical to the future of the community care model, and its ability to achieve resource efficiencies, is the availability of informal carers.

The possibility of a reducing supply of informal carers has been identified by a relatively small number of researchers (TOCC, 2007: 12-13; Percival & Kelly: 9-11, 2004: Glendinning *et al*, 2004: 24; Jacobzone, 1999: 9).

Carers Australia commissioned the National Centre for Social and Economic Modelling (NATSEM) to develop a model that would project the future demand for and supply of carers of older people in Australia (Percival & Kelly: 2004). NATSEM's modelling projected the number of informal carers of older people to **increase** between 2001 and 2031 by some **57 per cent**. This includes greater growth in the numbers of ***co-resident*** carers whose numbers are projected to increase by **71 per cent** (reflecting the ageing of carers themselves) while ***non co-resident*** carers are expected to fall from 37 per cent of all carers in 2001 to 31 per cent in 2031. By 2031, older carers will constitute **56 per cent** of all carers, up from 42 per cent in 2001 (Percival & Kelly, 2004: 28-29, 36).

In order to measure the **availability of carers**, NATSEM calculated a ratio of older persons needing care (that is, aged 65 or more with a severe or profound disability and living in private dwellings) to people likely to provide care. Between 2001 and 2031, it is projected that this will **fall** from 57 primary carers for every 100 older people needing care, to **35 carers for every 100** needing this care (Percival & Kelly, 2004: 30-31).

These projections raise concerns about the capacity of community care to meet future need where increased dependency levels arise, and it needs to be remembered that these are likely to underestimate the challenge, given the number of 'hidden' carers, and number of people needing formal services but not receiving them.

This would indicate a choice for government aged care funders to meet this need through increased residential care or increased intensive (and therefore costly) community care services.

2.4 The impact of consumer-directed care on community care services

Consumer-directed care (CDC) is a strategy that is designed to provide service users with more scope to direct their own care while improving the flexibility of the community care system. It is not regarded as a replacement for the community care system but as a parallel provision that is part of a reformed system (Allen Consulting, 2007: 49, 55). Available in the disability sector since the early 1990s, the Australian Government has expressed interest in exploring its applicability to the aged care sector (ACSA, 2008: 2). The CDC model has been found to increase the use of community care through providing support that increases the capacity of informal care to support older people at home (ACSA, 2008: 15; Glendinning *et al*, 2004: 13, 20).

The CDC model is based on an assumption of sufficient service supply to enable consumer choice. However, in the face of lengthy waiting lists for many aged care services, and resource restrictions which limit the total number of hours of formal care possible per consumer, serious concerns arise regarding the viability of this model. Apart from having services from which to choose, meaningful consumer choice also relies on the availability of information and services to support effective decision making (Glendinning *et al* (2004: 14).

Anna Howe raised cautions about claims that CDC achieves savings in administration and overheads by reducing the need for service providers, and notes that not all older people will be able to, or want to, manage their own care. Rather than involving cost savings, CDC is a cost-shifting model (Howe, 2003: 15-16). ACSA too raises cautions about the model's potential efficiencies because of the range of supports required to make it effective (ACSA, 2008: 15). A final concern relates to the need for informal carers to receive appropriate training of informal carers in order to ensure quality care and the safety of the carer and the client.

2.5 Studies of the community care model from an efficiency perspective

This literature review found almost no studies focusing on the community care model from an efficiency perspective, and its future viability. Similarly, the Productivity Commission could identify only one study of productivity in aged care and this study focused on residential care only. This was undertaken for the Hogan Review by the Centre for Efficiency and Productivity Analysis (CEPA) at the University of Queensland and tested the importance of a range of factors in explaining differences in efficiency (Productivity Commission, 2008: 180).

The research found that remotely located residential facilities were less efficient in comparison with those in other locations, partly due to the increased costs involved in employing skilled labour. Consistent with international studies reviewed by the Productivity Commission, **for-profit** facilities were found to be more efficient than not-for-profit facilities and for-profit providers were less likely to be operating rural and remote services than not-for-profit organisations. Facilities with

higher **measured quality** achieved lower scores for efficiency, reflecting the higher input costs of better quality care. International studies reviewed by the Productivity Commission found that providers operating multiple facilities generally have higher average efficiency scores, mainly because of the economies of scale that can be achieved (Productivity Commission, 2008: 180-181).

Productivity Commission analysis of long term aged care supply and costs concludes that the **labour intensive nature** of such care, with little scope for substitution or increases in productivity, combined with a **dwindling supply of labour force**, make it likely that wage rates are likely to increase and with them, overall costs of care (Madge, 2000: 46).

The Productivity Commission (2008: 175) identified conflicting analyses of the potential for improving productivity and efficiency in aged care, with some arguing that no room for this exists and others (particularly the Hogan Review) insisting that significant scope exists. The Commission noted that opportunities may arise from adopting more **flexible workforce practices**, improving **management practices**, using **assistive and information technologies** more extensively, and **changing regulatory arrangements** in order to facilitate both innovation and efficient resource usage (*ibid*).

In their analysis of efficiency in long term care, Glendinning *et al* (2004: 17) identified the important role of care management as a mechanism for achieving input and outcome mix efficiencies.

2.6 Community aged care in rural and remote settings

Inequities between metropolitan and rural communities are well documented. In terms of ageing, a higher proportion of Australia's older people live in rural and remote communities than in capital cities – partly because of out-migration by younger people and significant in-migration of older people seeking peaceful retirement settings. This is particularly evident in many smaller coastal towns and some regional centres. It is known that the health of older people in rural and remote Australia is generally poorer than that of their metropolitan counterparts (AIHW: 2003). Rural regions have average incomes that are 30 per cent lower than inner metropolitan levels and 36 of Australia's 40 poorest areas are classified as rural or remote (ACSA:NHRA, 2004: 4).

Apart from their average older age profiles, regional areas also exhibit more rapid rates of growth in the number of people aged 65 or more, compared with metropolitan areas (Sappey Bone & Duncan: 2007, citing ABS data). The key barrier of distance between most consumers and aged care providers is well documented (Sappey Bone & Duncan: 2007; Gibson Braun & Liu: 2002; AIHW: 2002) and a key element in the relatively high costs of delivering care in rural and remote locations. Three specific factors have been identified as affecting the higher costs of rural aged care – distance and travel, the need to customise services to address local conditions, and labour recruitment barriers (Sappey Bone & Duncan, 2007: 5).

Research by Aged Care Services Australia (ACSA) and the National Rural Health Alliance (NHRA) identified five key challenges associated with the delivery of aged care in rural and remote Australia.

- **Workforce challenge** – workforce issues are more acute in rural and remote than in metropolitan locations. The supply of qualified and experienced staff is restricted and turnover is high. The existing workforce is older than its metropolitan counterpart with the average age of nurses being 53 years in rural areas compared with 42 years for the nursing workforce as a whole. 57 per cent of all rurally located aged care workers are over 45 years of age.

  Access to training is difficult and lifelong learning opportunities are restricted by the costs associated with purchasing education from outside the local area. In addition, many health and community aged care professionals work alone with little or no administrative or professional support, and their occupational health and safety is often compromised when making home visits or working alone at night.

- **Funding system challenge** – many rural and remote providers face significant viability issues as many are small in size with limited financial and staff resources. This makes it difficult to achieve economies of scale, compounded by the higher costs (relative to metropolitan providers) of delivering care. Community care providers are challenged by the high costs arising from the dispersed location of clients and the cost associated with travelling to them, as well as by the very small size of many services.

- **Capital funding challenge** – residential aged care providers have higher construction and operating costs and significantly lower capital incomes (due to accommodation bonds reflecting relatively lower housing prices in rural and remote settings, coupled with the relatively lower incomes of older people in these locations).

- **Planning challenge** – current service boundaries created by government funding programs do not necessarily reflect local need and lack flexibility to adapt to that need. The range of inter-related services supporting older people are not able to be planned in a coordinated way, or in a way that could achieve synergies and efficiencies.

- **Transport challenge** – inadequate public and community transport infrastructure in rural and remote areas mean that older people are reliant on family, friends and volunteers, and service providers themselves, to access services (ACSA & NRHA: 2004).

2.7 Strategies for achieving efficiencies in community care

The literature review identified four strategies for achieving efficiencies in community aged care –

1. the application of creative models of collaborative delivery
2. effective use of new technologies
3. effective use of spatial analysis and micro-simulation modelling
4. local workforce development.

2.7.1 The application of creative models of collaborative delivery

The Hogan Review (2004) recommended cooperative approaches to purchasing accounting, technological and training services and products – as is evident in the establishment by the Aged Care Association of Australia (ACAA) of *Aged Care Efficiency Services* which has been found to reduce facility operating costs by collective purchasing power, and in the UK Department of Health's *Care Services Efficiency Delivery* program.

Following a detailed study of issues associated with delivering aged care in rural Australia, Sappey Bone and Duncan (2007: 7-8) argue that the regional model that has been adopted for natural resource management in Australia be adapted for the aged care system. Both sectors are identified as sharing similar challenges. This model sees decisions about resource allocation being made at the **regional level,** tapping into local networks but providing an i**ntegrated** solution to planning. Catchment management authorities, directly responsible to a State Minister, have replaced numerous volunteer management committees, but public engagement and participation remains essential to fulfilling statutory requirements. The researchers argue that the advantage of this model for aged care is that it provides a mechanism for addressing ageing needs as they interact with social, economic and other issues.

There may be scope for rurally located community aged care providers to pool their workforce resources, and with the use of spatial technologies (*see Section 2.7.4*) adopt a planned approach to delivering in home care that streamlines care and enables a sharing of travel related costs. This would also involve local workforce training and development initiatives to tailor demand to workforce supply and the identification of other agencies employing staff of similar skill levels in order to build meaningful jobs with adequate remuneration.

2.7.2 Effective use of technology

The continuing trend to deliver aged care in the home and community, together with a growth in demand for aged care services due to population ageing, is seen by some researchers as stimulating the development of technologies which can provide a supportive infrastructure for community aged care (Gururjan, Gururjan & Soar: 2005).

A collaborative research program has been established at the University of Southern Queensland to support the development, implementation and evaluation of aged care related technologies and of information management strategies for aged care. Designed to provide a research evidence base for these technologies, the Centre for Ageing and Agedcare Informatics Research (CAAIR) has been informed by the *National Strategy for an Ageing Australia* (2001) which identified the crucial role of health information in quality improvement, and the need for research to underpin this. Operating as a virtual centre across geographically dispersed locations in Japan, Ballarat and Southern Queensland, the CAAIR is pursuing a number of research studies, including a focus on 'efficiency, productivity and quality' which aims to streamline aged care administration and reporting. Another project is researching and evaluating innovative technologies, including for remote delivery while

another is identifying appropriate information standards for aged care (Gururjan, Gururjan & Soar: 2005).

Centres like the CAAIR are both an indicator of the growing importance of new technologies in delivering effective aged care, and of the need for these to be based on research and evaluation so that their application is informed (Productivity Commission, 2005b: LIII-LIV). They are also important because they involve designing technology to meet needs in aged care, rather than adapting technologies created for other sectors and other purposes and superimposing them on the delivery of aged care.

It is important to understand and anticipate the role that technology can play in addressing both lifestyle and aged care needs of future aged care consumers. The Productivity Commission (2008: 184-186) identified a range of efficiencies attributable to information technology and assistive technologies designed for the health and aged care sectors. These include –

- digitally recorded clinical assessment and other bedside data, transferred by broadband and wireless technology to other staff;
- computerised clinical care management (assessment, care planning, evaluation) to reduce paperwork, duplication of record keeping;
- automatic medication dispensers;
- personal monitoring devices, badges using infrared in conjunction with sensors that allow client monitoring from a remote location;
- intelligent keyless entry and exit which not only controls door locks but also the simultaneous turning on and off of lights, air conditioning and other devices.

As new wireless and mobile technologies become more widely available, and speed and bandwith barriers are overcome, their potential to enhance the delivery of aged care is growing. Increased access to 3G mobile phone services, enabling m-internet, online interactive video, data service, m-commerce, m-payments and location based GIS services is also expected to be of particular value to aged care providers, particularly community care staff who are continually moving to deliver care. Mobile technology has been identified by researchers has achieving efficiencies in four areas – information-searching, evaluation, problem-solving and transaction, provided aged care organisations move to m-business in a managed process (Soar *et al:* 2005).

Japan is a world leader in the development of technology, including robotics, to assist with the care of older people and this can be traced to its government's promotion of a technology-driven road to economic growth following World War II. Japan holds an estimated 60% of the world's robots, with these originally designed for industry, but more recently being developed for use in the home and as an aid to improving the quality of life of older people and their carers. Some of the aged care specific robotic innovations overviewed by Dethlefs and Martin (2006) included The Aid-1 robot used for walking rehabilitation programs or gait training and was designed in response to staff shortages and associated staff burn out and enables patients to progressively strengthen their muscle power and ability to walk by controlling the burden of the patient's body weight; an interactive robot that is able to communicate verbally and non verbally (by reading facial expressions) with people and is

expected to be used in a range of sectors, including aged care, hospitals and education facilities; and the robotics sick room which allows monitoring of patients' breathing and movements, without intrusion, using robot technology.

Technology needs to be viewed as a continuum ranging from simple assistive aids to more complex and high-tech solutions such as, robotics. These have significant potential both as cost saving interventions as well as supports to independent living. New technologies hold significant scope for addressing many of the challenges associated with delivering aged care in rural settings.

2.7.2.1 Effective use of GIS technology – a South Australian example

New technologies such as GPS tracking, video conferencing or virtual link-ups to provide remotely delivered support, and GIS modelling of service provision and transport, offer largely untapped opportunities for rural service providers to deliver services across large areas and remote populations in more efficient ways.

The review of literature identified recent acknowledgement of the potential use of geographic information systems (GIS) to more efficiently organise and schedule community based care services and to contain transport costs (Productivity Commission: 2008). Analysis by Howie (2008) found that these costs can be reduced by more than one-third through using GIS.

In 2006, the Murray Mallee Aged Care Group (MMACG)[3] began to explore the use of a GPS system to map the locations of their clients and independent contractors in order to determine the distances being travelled and the most efficient client-contractor linkages. Initial assistance was received from GPS system users and from The Map Shop[4], where equipment (a handheld Garmin tracker, cables and appropriate computer software) was purchased and additional information obtained. The equipment was simple to use and required little training.

The MMACG then mapped all clients and independent contractors to set up a database, and this exercise took approximately 2 weeks. All coordinators received training in using the Garmin and the mapping program so that they could be responsible for mapping and monitoring their own areas. The service reports that as coordinators have become more familiar with the equipment, it is being used extensively in service planning and evaluation.

Funding for this initiative involved $637.00, a once-off outlay that has seen the 2006-07 travel budget of $85,024 reduced to $59,938 in 2007-08. During this period, the number of clients increased from an average of 70 to 75 as did fuel prices. **Therefore, even without the impact of increased fuel costs, the outlay of $637 plus staff time in mapping, achieved a savings of $25,086 in a single year**. The savings achieved were attributed by the service to more efficient and effective management of travel and care arrangements. For example, the GPS mapping enables visits to several clients to be consolidated into a single trip and contractors are able to be matched with

[3] www.murraymallee.org.au

[4] www.mapshop.net.au See also www.oziexplorer.com.au

clients on the distances between them. In addition, being able to visualise the spatial distribution of clients and contractors has enabled the MMACG to identify growth areas in service provision and areas where new contractors need to be sourced.

Building on the foundations set by the MMACG, funding has been provided for a three year study by the Department of Health and Ageing in collaboration with the MMACG. The '**Linking Rural Older People to Community through Technology**' project exemplifies how the application of GIS technology can enhance the delivery of aged care services in the Murray Mallee region. Once evaluated, it is intended that the project be applied in other rural regions.

2.7.3 Effective use of spatial analysis and micro-simulation modelling

Microsimulation models use a dataset that contains detailed information about the characteristics of individual households and people within a sample survey or an administrative database. Traditionally they have been used in tax and social security policy but recently have been extended to the health and aged care sectors (Brown *et al*, 2004: 3).

The National Centre for Social and Economic Modelling (NATSEM) at the University of Canberra has developed a spatial microsimulation model the aged care sector. This is known as *CareMod* and was designed within the framework of the *National Strategy for an Ageing Australia.* It synthesises data from the Census with that from the ABS *Survey of Disability Ageing and Carers* relating to people aged 55 and over. *CareMod* is designed to provide detailed regional projections for older Australians living in New South Wales up to the year 2020, and will answer a number of questions including - the number of older people living in different locations in 5, 10, 15, 20 years time; their functional status and need for care; their living arrangements and availability of informal carers; and their disposable income for contributing to the cost of their care.

These and similar models hold significant potential for achieving enhanced efficiencies due to more accurate planning data, especially in rural and remote locations.

2.7.4 Local workforce development

Apart from collaborative workforce development with other agencies operating in the region (as discussed in *Section2.7.1*), there is scope for aged care providers, particularly in rural areas, to look to training and paying informal carers and to including them in their overall workforce planning and development. This is already occurring in parts of rural and remote Australia.

There is also scope to source other local workforce members – for example, partners of those working in the mining industry, and train them to deliver care.

3 SUMMARISING KEY FEATURES EMERGING FROM THE ANALYSIS OF QUANTITATIVE DATA

3.1 Demand-side data

3.1.1 The older population in the region

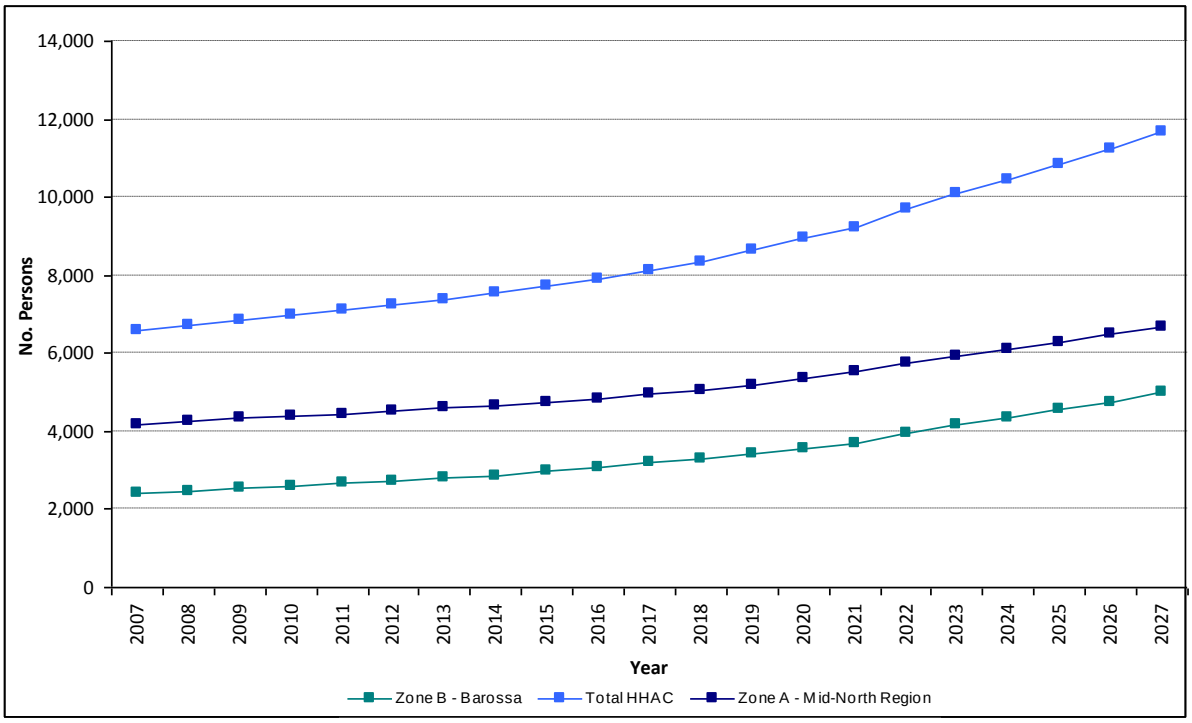
The older population was defined as involving these three age groups -

- 65 to 74 year olds
- 75 to 84 year olds
- 85 and older.

- **The key message from the review of 2006 Census data mapped against location is that the older population in the region studied (that is, in the Mid North and in the Barossa Zone) is growing and will continue to do so until at least 2027.**
- **This includes those in the older age groups who are likely to require aged care services.**

As **Figure 2** shows, the number of people aged **75 years and over** is expected to increase steadily across the HHAC Study Region.

Figure 2: Number of projected persons aged 75 years and over for the Helping Hand Mid North Study Region

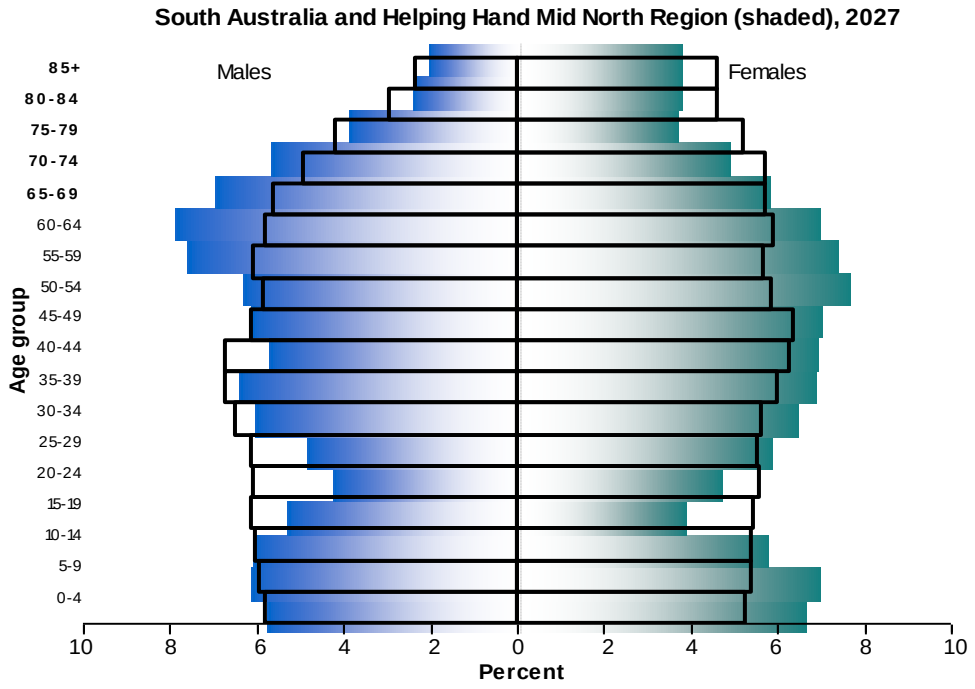


Source: Department of Health and Ageing Projections 2007-2027

This growth is higher than for South Australia as a whole, as can be seen in **Figure 3** which shows that there is projected to be a higher proportion of those aged **50 to 69 years** within the HHAC Mid North region compared to South Australia as a whole.

Figure 3: Helping Hand Mid North Region compared with South Australia: Age Sex Structure, 2027

Source: Department of Health and Ageing, 2007-2027 Population Projections



3.1.2 Differences based on Local Government Areas within the Region

- **This trend varies within the region, with <u>Orroroo/Carrieton</u> prominent as the locality with the most significant ageing related demand.**

  - **It currently has the *highest proportion* of those aged 75-84 years (10.7 percent of the population) and of those aged over 85 years (3.7 percent of the population).**

  - **Its *projected growth* in the number of older people will be higher than for other LGAs in the region.**

  - **It has the highest proportion of older people (aged 65 or over) undertaking *unpaid carer work* of all LGAs in the region.**

- **It has the least favourable *ratio of working age people to older people*. In 2007, Orroroo/Carrieton had a ratio of 3.1 working age people to every person aged 75 or over. This is projected to decrease to 1.5 persons by the year 2027.**

➢ **Other LGAs expected to show increased demand for aged care services are *Peterborough* which currently has the highest proportion of those aged *65-74 years* (11.5 percent of the population) and is projected to have the highest percentage change in the population aged *85 years and over* (2.6 percent), followed by *Mount Remarkable* and *Wakefield* (2.1 percent).**

➢ **Consequently, Helping Hand Aged Care's service hubs of Port Pirie and Jamestown are well located, and can expect continued demand for services, and will need workforces that can meet this demand.**

➢ **It could be feasible to develop a hub closer to the Orroroo/Carrieton LGA, and while the demand for aged care services will grow in the Barossa region, the authors do not have data about other organisations servicing this population (and whether Helping Hand should therefore plan to address this demand, and to what degree). However, the current hub in Clare is likely to experience growth and its services could be linked to another hub in the Barossa Valley.**

3.1.3 Ratio of the working age to older age population

The ratio of working aged people to older people (here defined as being 75 years or more) provides a powerful indicator for future capacity to meet aged care need.

➢ **It can be seen from**

- **Table** 1 **that the region as a whole will face increasing demand for aged care and a reduced number of people of working age to support them.**

  - In **2007**, the Study Region as a whole had a ratio of **7.2** working age people to every person aged 75 or over. By **2017** this reduces to **6** working age people to every person aged 75 or over, and by **2027,** it reduces further to only **4.3** working age people to every person aged 75 or over.

  - The Barossa region (Zone B) has a stronger ratio which was **9.8 : 1** in 2007, reducing to **8.5 : 1** in 2017, and dropping to **6 : 1** by 2027.

  - The (Zone A) Mid North region has the most worrying trend, beginning with a ratio of **5.6 : 1** in 2007, dropping to **4.4 : 1** by 2017, and to only **3 : 1** by 2027.

Table 1: Ratio of working to aged population in the HHAC Mid North Region, 2007, 2017 and 2027

	0-14 years		15-34 years		35-54 years		55- 74 years		75+ years		Ratio Working (15-54 yrs) to aged population
	n	%	n	%	n	%	n	%	n	%	(75+ yrs)
2007											
Barossa Region (Zone A)	9,154	21.2	10,101	23.4	13,617	31.5	7,967	18.4	2,410	5.6	9.8 : 1
Other Region (Zone B)	9,645	20.0	9,832	20.4	13,592	28.2	10,891	22.6	4,170	8.7	5.6 : 1
HHAC Mid North Region	18,799	20.6	19,933	21.8	27,209	29.8	18,858	20.6	6,580	7.2	7.2 : 1
2017											
Barossa Region (Zone A)	10,400	19.8	11,870	22.6	15,146	28.9	11,884	22.6	3,186	6.1	8.5 : 1
Other Region (Zone B)	9,260	18.8	9529	19.3	12,420	25.2	13,223	26.8	4,945	10.0	4.4 : 1
HHAC Mid North Region	19,660	19.3	21,399	21.0	27,566	27.1	25,107	24.6	8,131	8.0	6.0 : 1
2027											
Barossa Region (Zone A)	11,931	19.3	12,925	20.9	17,045	27.5	15,068	24.3	4,989	8.1	6.0 : 1
Other Region (Zone B)	8,930	18.0	8,752	17.6	11,503	23.1	13,857	27.9	6,670	13.4	3.0 : 1
HHAC Mid North Region	20,861	18.7	21,677	19.4	28,548	25.6	28,925	25.9	11,659	10.4	4.3 : 1

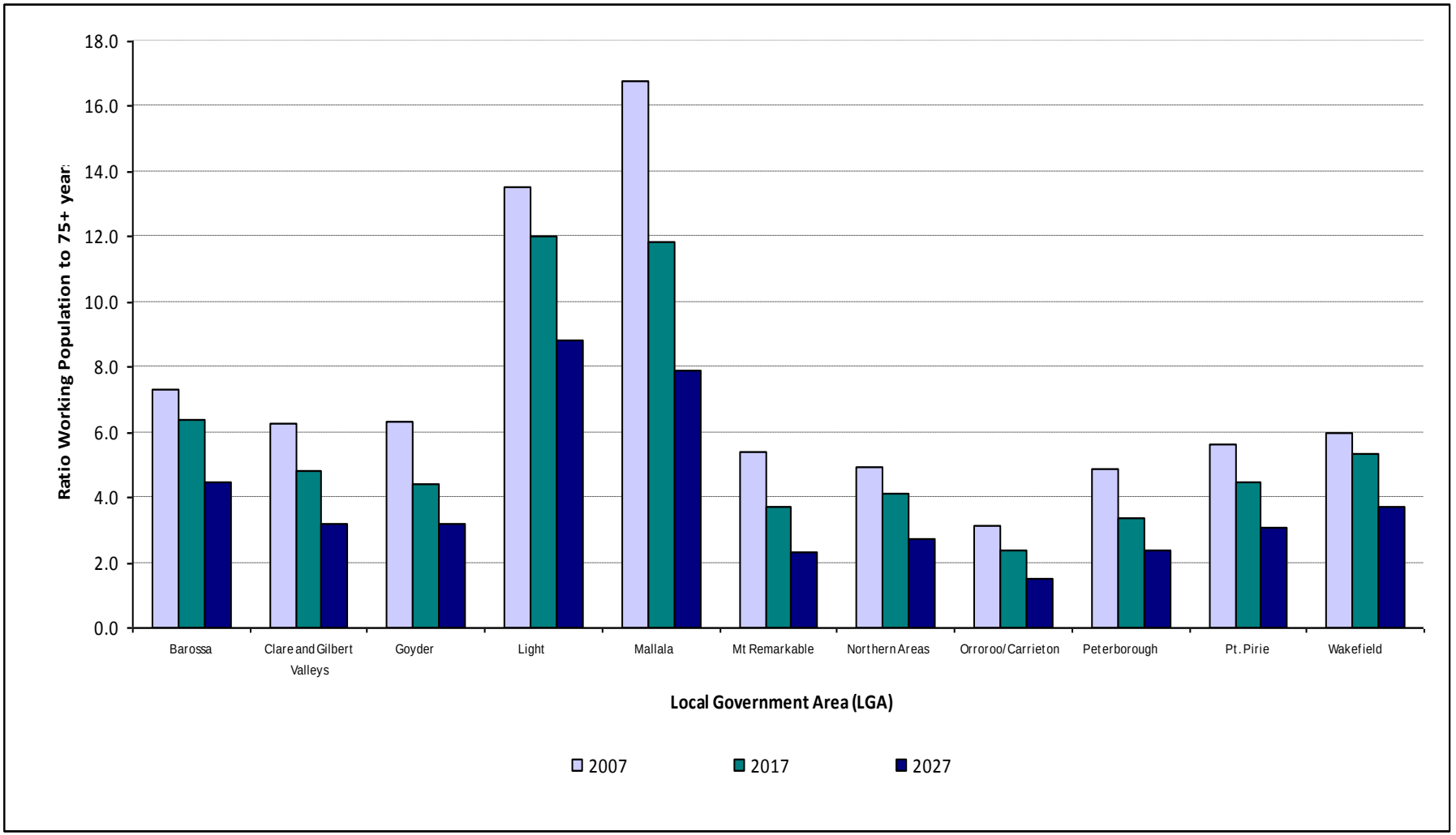
Sources: Department of Health and Ageing projections (Released January 2009 based on 2006 Census, using a cohort-component method)

- **Within the region there will be some LGAs where the ratio is more critical, particularly *Orroroo/Carrieton* which in 2007 had a ratio of *3.1* working age people to every person aged 75 or over. This is projected to decrease to *1.5* persons by the year 2027.**

Figure 4 indicates the working age population to population ageing ratios in 2007, 2017 and 2027 for each LGA within the HHAC Mid North study region. It shows that a majority of the LGAs by 2027 will experience a ratio of **less than 4** working age people to every person aged 75 or over.

Figure 4: Ratio of Working Population (15 to 64 years) to Aged Population (75 + years), Mid North South Australia, 2009

Sources: Department of Health and Ageing projections (Released January 2009 based on 2006 Census, using a cohort-component method)

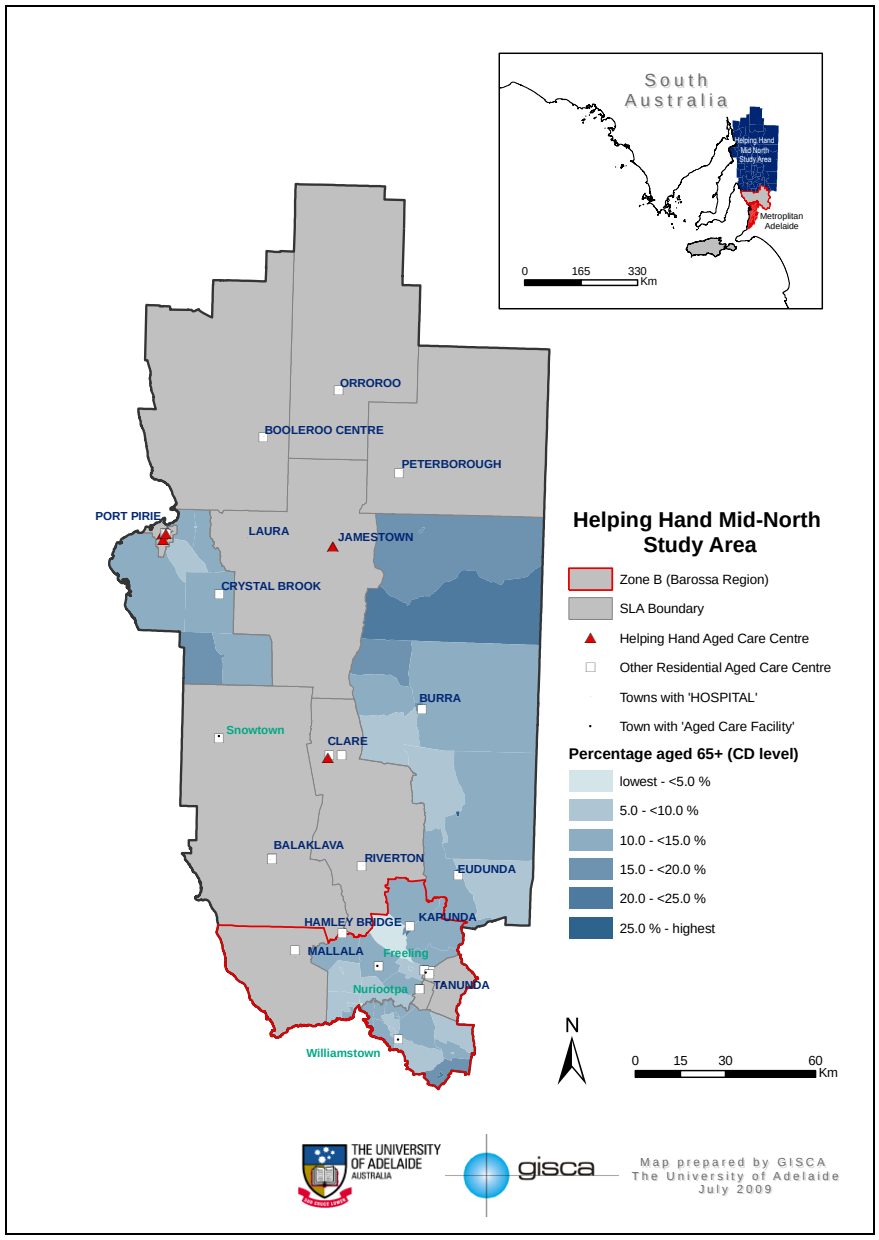


3.2 Supply-side data

3.2.1 Current hospital and residential aged care services in the region

A number of rural centres within the HHAC Study Region provide both hospital and residential aged care facilities, in particular within the Barossa zone. **Figure 5** maps the distribution of these facilities against the percentage of the population aged 65 and over within Census Collection Districts. Towns with a hospital are highlighted in **blue** and capitalised. Towns with an aged care facility are indicated in **green** and lower case. HHAC facilities are also identified as are other residential aged care centres. The data were current for **2008.**

Figure 5: Distribution of Residential Aged Care Facilities, HHAC Study Region, 2008



Source: ABS 2006 Census, and Department of Health and Ageing, 2008 (GISCA)

3.2.2 *The Helping Hand Workforce*

A substantial proportion (**28.8 percent**) of the Helping Hand Aged Care (HHAC) workforce is located within the Mid North region.

Table 2 provides a summary profile of the Mid North workforce. This shows the following trends –

- The workforce, like all aged care workforces, is highly feminised, with 94.4% of staff being women.
- The workforce is ageing, with most aged between 35 and 60 years (60.7%) – see Figure 6.
- The workforce is almost evenly divided between those who are employed on a full time, permanent basis (51.1%) and those (49.9%) who are employed on a casual basis.
- The workforce is employed for different amounts of time ranging from up to 7 hours a week (19.3%) to more than 35 hours (7.9%). However, part-time employment is the predominant mode.
- The highest numbers are employed in Port Pirie (44.3%), followed by Claire (32.1%) and Jamestown (23.5%).
- The most common work role is Care Worker (60.0%) followed by Nurse (19.3%).

Table 2: Helping Hand Aged Care (HHAC) Workforce Socio-Demographic Profile, Mid North South Australia, 2009

Workforce Feature	Helping Hand Workforce	
	n	%
Gender		
Male	17	5.6
Female	288	94.4
Age group		
Up to 34 years	56	18.4
35-54 years	185	60.7
Over 55 years	64	21.0
Employment status		
Casual	149	48.9
Permanent / Full-time	156	51.1
Location		
Clare	98	32.1
Jamestown	72	23.5
Port-Pirie	135	44.3
Work role		
Domestic or Home Maintenance Worker	38	12.5
Care Worker	183	60.0
Nurse (EN or RN)	59	19.3

Other staff	25	8.2
Workforce Feature	**Helping Hand Workforce**	
	n	**%**
Hours worked		
Up to 7 hours	59	19.3
7 to 14 hours	41	13.4
14 to 21 hours	48	15.7
21 to 28 hours	71	23.3
28 to 35 hours	62	20.3
Over 35 hours	24	7.9
Total Staff	**305**	**100.0**

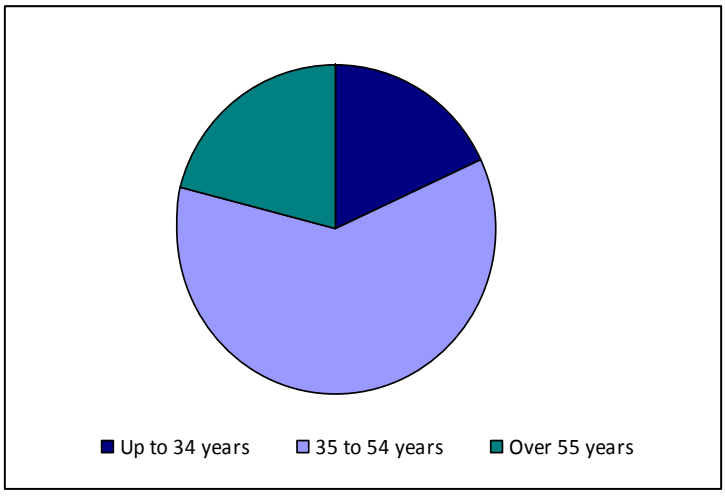
Source: Helping Hand Aged Care Mid North Region, Workforce data 2009

3.2.2.1 Ageing workforce

- **Helping Hand Aged Care's own workforce is ageing, and its workforce in the region will need to grow in order to meet projected demand – see Figure 6.**

  - There are differences in workforce ageing across the three centres of service delivery in the Mid North region. The proportion of **older employees**, that is, aged 55 and over, is higher in **Clare** and lower in Port Pirie (at statistically significant levels).
  - The proportion of **younger employees,** that is, aged less than 35 years, was lower in Clare compared with the other two centres. **This means that Clare is the centre that faces the most significant challenges relating to workforce ageing.**

Figure 6: Age profile of the Helping Hand Aged Care (HHAC) Workforce, Mid North South Australia, 2009



Source: Helping Hand Aged Care Mid North Region, Workforce data 2009

➢ **It will be important to develop strategies to retain older employees for as long as possible, to retain younger employees, and to continue to recruit new employees.**

3.2.2.2 Efficient use of workforce resources

➢ **Given the combined impact of a growing demand for aged care and the ageing of Helping Hand's own workforce, a key challenge will be making the most effective use of workforce resources, and possibly reviewing the balance of work role, employment status, and hours of employment.**

Table 3 summarises information about employee work role and hours of work across the three centres of service delivery, with tests of statistical significance applied to identify important differences across these locations. It can be seen that –

- **Care Workers** represented a significant majority of **casual** positions and a significant minority of permanent/FTE positions.
- **Nurses,** both RN and EN, showed a reversal in this pattern, with a significant majority being employed in a **permanent/FTE capacity** and a significant minority employed as casuals.
- A significant majority of 'other staff' (e.g. **management, administration**) were employed in a **permanent/FTE capacity** and a significant minority were employed as casuals.

Table 3: Helping Hand Aged Care (HHAC) Workforce by Work Role and Average Hours Worked, Mid North South Australia, 2009

	Domestic Worker		Care Worker		Nurse (RN/EN)		Other Staff	
	n	%	n	%	n	%	n	%
Employment status								
Casual	19	12.8	114	**76.5↑**	13	**8.7↓**	3	2.0v
Permanent / Full-time	19	12.2	69	**44.2↓**	46	**29.5↑**	22	**14.1↑**
Hours worked								
Up to 7 hours	2	3.4#	54	**91.5↑**	2	3.4#	1	1.7#
7 to 14 hours	6	14.6	31	**75.6↑**	2	4.9#	2	4.9
14 to 21 hours	8	16.7	29	60.4	9	18.8	2	4.2
21 to 28 hours	12	16.9	37	52.1	18	25.4	4	5.6
28 to 35 hours	2	3.2#	30	**48.4↓**	25	**40.3↓**	5	8.1
Over 35 hours	8	**33.3↑**	2	8.3#	3	12.5	11	**45.8↑**
Overall	**38**	**12.5**	**183**	**60.0**	**59**	**19.3**	**25**	**8.2**

↑↓ Statistically significantly higher or lower ($\chi 2$ test $p>0.05$) than the other categories combined

Insufficient numbers for statistical tests

Source: Helping Hand Mid North Region, Workforce data 2009

Table 3 also demonstrates some significant differences in hours worked in relation to different work roles.

- Domestic workers and 'other' staff were the two groups most likely to be working for 35 hours or more each week.
- Care Workers were the group most likely to be working for between 7 and 14 hours each week.
- Care Workers and Nurses were the two groups most likely to be working between 28 and 35 hours per week.

There were also statistically significant differences between the three Helping Hand service hubs in relation to employment status.

- There was a higher proportion of **casual employees** in **Clare** and a lower proportion of permanent/FTE employees.
- Conversely, **Port Pirie** had a higher proportion of **permanent/FTE employees** and a lower proportion of casual employees.

➢ **It will also be important to develop workforce planning strategies that take into account increasing demand for community based care and marry these with strategies employing GPS and other technologies that can reduce travel time and achieve efficiencies in resource allocation (as discussed in *Section 2.7.2).***

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