Positioning Paper

The impact of home maintenance and modification services on health, community care and housing outcomes in later life

authored by

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ACRONYMS

AARP	American Association of Retired People
ABS	Australian Bureau of Statistics
ACHA	Assistance with Care and Housing for the Aged
AHS	American Housing Survey
AIHW	Australian Institute of Health and Welfare
ALGA	Australian Local Government Association
ALSA	Australian Longitudinal Study of Ageing
AURDR	Australian Urban and Regional Development Review
CACP	Community Aged Care Packages
COTA	Connecting Over-50s Throughout Australia
CSHA	Commonwealth-State Housing Agreement
DADHC	Department of Ageing, Disability and Home Care
DOH	Department of Housing
DOHA	Department of Health and Ageing
DOHAC	Department of Health and Aged Care
DHCS	Department of Health and Community Services
DHHS	Department of Health and Human Services
DVA	Department of Veterans' Affairs
EACH	Extended Aged Care at Home
EPAC	Economic Planning Advisory Council
HACC	Home and Community Care
HAS	Home Assist Secure
HMM	Home maintenance and modification
ILC	Independent Living Centre
ILEP	Independent Living Equipment Program
RAP	Rehabilitation Appliances Program
SHAs	State and Territory Housing Authorities
TADWA	Technology Assisted Disability Western Australia
TIMES	Territory Independence and Mobility Equipment Scheme
USA	United States of America
VHC	Veterans' Home Care
VHML	Veterans' Home Maintenance Line
WHO	World Health Organization

EXECUTIVE SUMMARY

Project goals and approach

The aim of this research project is to provide an analytical framework and research foundation for understanding the impact of home maintenance and modification (HMM) services on health, community care and housing outcomes in later life, and for developing more effective public policies relating to provision of these services. The project is predicated on a concern that the potential of HMM services is yet to be realised and that this is an under-researched area of policy and service provision.

The first two stages of the study, reported in this paper, include an international literature review and a review of the Australian service system. The Positioning Paper also includes a review of the Australian ageing policy context. Based on these reviews, the Positioning Paper presents an analytical framework for research and policy development relating to HMM services in Australia, summarised in Figure 1 (p. 68). The remainder of the project includes two studies, the first a more critical analysis of the service system and its links to ageing policy, the second a qualitative study of the experiences of consumers of HMM services.

Defining and conceptualising HMM

HMM services have developed in the contexts of health, community care and housing service systems, and the academic and professional literature in each of these contexts provides differing perspectives on the purposes of HMM policies and services, and emphasises different forms and types of provision. We propose an integrated approach to HMM that encompasses these three approaches, enabling the field of HMM to be considered as a whole. This integrated approach, including examples of types of interventions and service goals, is shown in Table 1 (p.14).

This integrated framework defines HMM services as structural and non-structural modifications, repairs, and ongoing maintenance of the homes of people in later life designed to enhance their safety (the health perspective), independence (community care) and/or sense of identity and lifestyle (housing). HMM services may be direct (actual service provision) or indirect (information, advice, assessment, case management, grants and loans). HMM services have in common a focus on the living environments of older people, and it is this that distinguishes them from other forms of care and support for older people.

We argue that a comprehensive approach to the provision of HMM services will be concerned with health, community care and housing outcomes, and will be integrated with the health, community care and housing service systems. The challenge is to develop an integrated approach that transcends the separate development paths that HMM services have taken to this point, and that is cognisant of the diversity of roles that these services can play for people in later life.

The Australian policy context

This project is concerned with the role and potential role of HMM services in policies and service systems designed to respond to the ageing of the Australian population. There are three broad themes in Australian ageing policy that provide the broad policy context for HMM services: fiscal sustainability, positive ageing and ageing in place. Within this wider context, HMM services can play small but significant roles in health, community care and housing policies for older people. These include reducing rates of hospitalisation amongst older people, preventing falls and other accidents, reducing demand for residential aged care services and social housing for older people,

facilitating healthy and independent living in older age, enabling older people to continue to participate in community life, enabling older people to 'stay put' and avoid involuntary and unwanted moves, and expanding housing and location choices for people in later life.

The Australian service system

HMM services in Australia have developed in an incremental fashion across several policy and service fields, and have lacked a clearly articulated or integrated policy framework. The HMM system is characterised by unclear and poorly integrated policy goals, complex and unsystematic funding arrangements, unevenly developed service models and systems, and lack of evaluation of outcomes. There are great differences in the levels and forms of provision among the states and territories. There appears to be a need for a more rigorous approach to the development of the HMM service system. The location of HMM at the intersection of the health, community care and housing systems may have impeded its development, but this is a strategic location with great potential for expansion. The key to the future of HMM is to maximise its contribution to the achievement of key outcomes in each of the health, community care and housing systems.

The international and Australian research

There is a large body of international research that should be drawn on to inform the development of the Australian HMM service system. This body of research covers three broad areas: need and demand for HMM services, service system and service delivery issues, and outcomes of HMM. There is, however, a paucity of research on the Australian HMM system. There is a need to undertake Australian research in each of the three main areas covered by the international literature in order to provide an evidence base to support the development of HMM policies and services in Australia.

The research framework

The research framework portrayed in Figure 1 (p. 68) provides a conceptual framework for the development of an evidence base for HMM services in Australia, including the current study. It indicates the kind of research questions that need to be addressed in the three key areas of need and demand, the service system, and outcomes; and it shows how research in these areas would provide a basis for policies that explicitly link HMM services to the wider goals of ageing policy.

With respect to the need and demand for HMM services, there is currently only data at a highly generalised level on which estimates of need and demand for HMM services can be assessed. The international literature indicates a range of ways in which more targeted need and demand studies in this area might be conducted.

With respect to service system and service delivery issues, there is only very limited Australian research, other than some analysis of HACC data. The service system review reported in Chapter 4 is the first detailed, descriptive overview of HMM in Australia. This review, together with the review of the international literature, provides a set of research questions and issues to begin the task of systematically analysing this service field.

Consumer and policy outcomes from HMM service provision are under-researched both internationally and in Australia. The research framework identifies the types of consumer and policy outcomes associated with HMM services, and suggests the need for studies than analyse the links between HMM services and these outcomes.

Conclusion

The Positioning Paper presents a detailed analysis of the current state of research on HMM services in Australia and internationally, and a detailed description of the Australian HMM service system. It concludes that there is a paucity of Australian research and that the service system itself requires analysis, review and further development. The service system and consumer studies to be conducted in the second part of this project will provide more in-depth understanding of the need and demand for HMM in Australia, the Australian service system, and consumer and policy outcomes. This will provide a foundation for a more extensive program of research to provide an evidence base for Australian HMM services.

1   INTRODUCTION

1.1 Project goal and context

The aim of this research project is to provide a theoretical and empirical research foundation for understanding the impact of home maintenance and modification (HMM) services on health, community care and housing outcomes in later life, and for developing more effective public policies relating to provision of these services. The project is predicated on a concern that the potential of HMM services to address the health, care and housing needs of older Australians is yet to be realised, and that this is an under-researched area of policy and service provision. The project aims to develop an approach to the understanding of HMM services in Australia that transcends particular service systems, and that looks holistically at the role of HMM in improving the wellbeing of Australians in later life.

Public provision of HMM services for older people in Australia has developed in the context of the health, community care and housing systems since the mid-1980s. The main source of provision is the Home and Community Care (HACC) program, but services are also provided through the Australian Government Department of Veterans' Affairs, state and territory housing authorities, and some hospital and health services. Public involvement in HMM takes a number of forms, including: information, assessment, advice and referral services; direct home modification and repair services; home and garden maintenance; and grant and loan services. Programs promoting universal and accessible housing design have similar purposes to HMM, but are not defined in this paper as part of the HMM service system (de Jonge, Ainsworth and Tanner, 2006). The focus of this paper is HMM services that have been developed under public auspices in the state and community sector. However, home maintenance and modification services for people in later life are widely provided through the market and household sectors, and the potential for a more integrated approach to HMM involving the state, community, market and household sectors is a key issue.

While the number of HMM programs around Australia has increased steadily over recent decades, the public policy framework for provision of these services is under-developed, and the research evidence-base for policy and service development is sparse. Linkages between the current array of programs and wider objectives of ageing policy such as 'ageing in place' and facilitating housing adjustments in later life are not well articulated. A systematic policy approach requires a theoretical and empirical understanding of the linkages between older persons' housing needs, the provision of HMM services, and key outcomes for individual and social wellbeing. These links have not been explored in depth in the Australian context. We have only limited data on: current and future need and demand; the distribution, range and types of services; outcomes for consumers; and impact on demand for other services, including health services and residential aged care.

From a policy perspective, there are two imperatives for examination of this area. The first is to assess the role of HMM in service provision for Australia's ageing population. Is investment in HMM an efficient and effective means of managing the social and economic challenges associated with population ageing in Australia? The second is to examine the role of HMM services in achieving health, community care and housing outcomes for Australians in later life. What contribution can HMM services make to the safety, independence and lifestyles of older Australians? To this point, HMM services have been relatively minor parts of the health, community care and housing systems for older Australians. This study will examine the issues associated with

viewing HMM from a more holistic perspective. Given the anticipated expansion of the older population, what roles can HMM play in managing population ageing and enhancing the wellbeing of older people?

1.2 Methodology and scope

The research evidence-base to underpin HMM policies in Australia is under-developed (de Jonge et al., 2006). Although there is extensive international literature on HMM, this material appears to have had only limited impact in Australia. The main Australian research to this point comprises analysis of service provision and consumer satisfaction data relating to services provided through the HACC program, some overall data on the need for HMM services, and a small number of evaluations of HMM programs. No comprehensive research synthesis of Australian findings is available, and nor is there an overall theoretical framework to underpin a systematic program of research.

This project will contribute to the development of an evidence base by addressing five research questions:

1. *The theoretical framework.* How should the links between home modification and maintenance services and outcomes for individuals and public policy be conceptualised? What is the best way of conceptualising this policy and service field, and the links between older persons' housing and living needs and preferences, their dwelling characteristics, the provision of home modification and maintenance services, and key outcomes such as home safety, capacity for independent living, and individual and social wellbeing?

2. *The service system.* What is the scope and shape of the current home modification and maintenance service system? Who provides what services, to whom, with what level of coverage and comprehensiveness, and according to what eligibility and priority processes? What are the main inputs (funding, staffing, resources) and outputs (services)? What are the roles of the public, community and private sectors in this system, and the relations between sectors? How can we portray the current characteristics of this service system and its capacity to meet the challenges of an ageing population?

3. *The service providers' perspectives.* What are the perceptions of service providers concerning the adequacy, appropriateness and effectiveness of current service systems? What do they view as the key issues of policy and provision?

4. *The consumers' perspectives.* What are the perceptions of consumers of the impact of these services on their independence, safety and wellbeing? What are consumers' perspectives on the quality of the services, and on the extent to which their needs and preferences are met through these services?

5. *The policy and research implications.* What are the implications of these findings for housing assistance and community care policies? What are the implications for the development of a research evidence base for future policy on home modification and maintenance services?

The project has five stages, corresponding to each of these research questions. The first two of these stages have been completed and are reported in this paper. They are:

1. *International and Australian literature review and development of conceptual framework.* A review has been conducted of the relevant policy and research literature of the past 10 years, based on the University of Queensland library catalogue, web sources, and data bases: *Social Services Abstracts, Sociological Abstracts, Medline, Rehab. and Physical Med., Allied and Complementary*

Medicine Database, APAIS and *Family and Society Plus.* This review also included data pertaining to HMM produced by the Australian Bureau of Statistics (ABS) and the Australian Institute of Health and Welfare (AIHW), including program data from the Home and Community Care (HACC) program. The findings of this review are reported in chapters 2 and 5 of this paper. The review identifies the main themes and findings in the international and Australian literature, and proposes an approach to conceptualising the corpus of HMM research.

2. *The Australian service system review.* A review has been conducted of the Australian HMM services system based on analysis of documents, secondary data and interviews with key informants. Extensive searches were undertaken of government and community agency websites to identify relevant policies, agency and program plans, program documentation, program data, evaluation reports and consumer information resources. Face-to-face and telephone interviews were conducted with approximately 10 key informants, and requests for information and surveys were emailed to another 10 key informants. This review, reported in Chapter 4, provides a broad overview of the main components of the service system, and the pattern of service provision in each of the states and territories.

Building on these initial stages, the project will include three further investigative stages, which will be reported in the Final Report. These are:

3. *Focus groups and key informant interviews with service delivery managers and professionals in each state and territory.* Focus groups and key informant interviews will be conducted with up to 10 policy makers, service managers, health professionals and technical staff in each state and territory, to identify key issues. Questions will be derived from data collected in stages 1 and 2. The intent is to build an in-depth understanding of the key policy and service delivery issues to be addressed in this field. The aim is to obtain the critical perspectives of well-informed informants on the following range of issues: the aims, approaches and outcomes of services; the levels and types of services; the extent and nature of demand; the characteristics of those who use or do not use services, including the impact of tenure; consumer awareness; methods of assessment and rationing, including equity issues; service integration and coordination; service delivery issues; service evaluation issues, and new strategies to promote, finance, deliver and plan home modification services.

4. *Semi-structured interviews with consumers.* Approximately 30 semi-structured interviews will be conducted with older people who have received a home modification or maintenance service during the prior year. Consumers will be identified via existing services and purposively chosen to represent diverse characteristics including age, sex, nature of ability/disability, type and level of service, dwelling type and tenure, and location (urban/rural). Particular attention will be paid to seeking a diversity of dwelling types and tenures within the consumer sample, and drawing participants from a range of service types. It is anticipated that interviews will be conducted in at least three states and territories, to ensure that key differences in policies and service systems among jurisdictions identified in stages 1 to 3 are taken into account in the selection of consumers. Interviews will be conducted in consumers' homes to facilitate assessment of the 'fit' between dwelling characteristics, consumers' expressed needs, the nature of the service provided, and consumer outcomes. Each interview will be recorded, and permission sought from consumers to access client record data. A 'case study' of each interviewee will be constructed. The purpose of the consumer interviews is to obtain qualitative information on the consumer experience of these services. This information is intended to develop a more detailed and nuanced

understanding of the dimensions of consumer experience of HMM services, and in particular to draw out any inconsistency between consumer experiences and preferences and current policy settings and professional practices. Clearly, this small sample of consumers will not permit generalisations to be made regarding the whole population of consumers. The intent is to develop greater understanding of consumer issues and perspectives, in order to inform policy, practice and further research.

5. *Analysis of policy and research implications.* The findings of the previous research stages will be integrated into a Final Report detailing the relations between consumer needs and demand, HMM services, and the outcomes of HMM services for the wellbeing of older people and ageing policy objectives. Key issues for public policy, program development and research will be identified.

1.3 Overview of positioning paper

The purpose of the Positioning Paper is to provide a foundation for further research and policy development in the field of HMM, particularly the research and policy analysis to be conducted in the later phases of this project. Each chapter of the Paper contributes to this purpose in a specific way.

The aim of Chapter 2 is to carefully define and delineate HMM as a policy and service field. The complexity of HMM as a policy and service field is due to the fact that it straddles three broad policy and service fields: health, community care and housing. HMM has tended to be addressed both in the research literature and in policies and programs as a small component part of each of these wider systems. This has meant that a diversity of policy, professional and research perspectives has been applied to HMM, and that the field has lacked an overall identity of its own. In Chapter 2, these three perspectives on HMM are critically analysed, and their policy and practice implications are identified. A reconceptualisation of HMM as an integrated field of policy and service provision is proposed, linking the diversity of HMM services and service types to a wide range of outcomes for older people and households.

The aim of Chapter 3 is to introduce the Australian policy context of HMM policies and services. The development of HMM services and growing interest in HMM as a policy field derives from the growth, and anticipated further expansion, of the older population. The broad themes of ageing policy in Australia, and key policy issues, are identified, with particular attention to health, community care and housing policies. The links between ageing policy and the growth of HMM services and programs are identified, and the need for greater clarity in these relations established.

This reformulation of the parameters and purposes of HMM provides a foundation for Chapter 4, where the Australian HMM service system is described. Two perspectives on the service system are presented. First, the four main components of HMM services are described: HMM in the home and community care system, in the social housing system, in the veterans' services system, and in the health care system. Secondly, the HMM services system in each of the states and territories is examined. A brief portrayal of the nature of the service system in each jurisdiction is noted, and similarities and differences identified. On this basis, the key characteristics of the Australian HMM service system are listed and critically discussed.

Chapter 5 provides an extensive report on the international and Australian literature on HMM organised around three broad topics: consumer need and demand; the organisation of service systems; and outcomes. The aim of the chapter is to identify the main findings of the international research literature on HMM, and relate it to the Australian context. The chapter provides a basis for identifying key research and policy issues that need to be addressed in the Australian context. It provides a

foundation for developing a theoretical and empirical research framework linking need and demand, service provision, and outcomes of HMM policies and services.

The final chapter draws together the findings of the first stages of the research project, and outlines the research strategy to be pursued in the remainder of the project. First, a broad framework of analysis is developed based on the definition of the policy and service field (Chapter 2), the Australian ageing policy context (Chapter 3), the description of the Australian service system (Chapter 4), and the international literature review (Chapter 5). This framework is then used to identify key research and policy questions in the Australian context. The research strategy proposed for the remainder of the study is based on these questions, and details of the proposed research methods for both the service provider and consumer studies are presented.

2 DEFINING AND CONCEPTUALISING HMM

2.1 Introduction

The purpose of this chapter is to provide a conceptualisation of HMM services and programs that both includes and transcends particular policy and service fields. A characteristic of HMM services in many countries, including Australia, is that they are located at the intersection of the health, community care and housing policy fields. In the USA, they have been described as a 'complex patchwork' where various types of services have been developed and delivered through different service systems, each with their own particular goals, approaches and interventions (Pynoos, 2001). In order to develop a comprehensive understanding of HMM policy and service systems, it is therefore necessary to begin by examining the ways that HMM have been conceptualised in the policy and professional literatures in each of the health, community care and housing contexts. While these are overlapping contexts with a number of commonalities, each provides a distinctive perspective on HMM in terms of the goals and intervention repertoires of HMM, and links to wider policy issues. In this chapter, each of these three approaches to HMM is analysed, drawing primarily on the international policy and professional literature. In the final section of the chapter, a conceptualisation of HMM is proposed that integrates the main themes from the health, community care and housing literature. It is argued that this 'joined-up' definition provides a foundation for an inclusive approach to the analysis and development of HMM services in the Australian context that recognises the contribution of HMM services and programs to health, community care and housing objectives.

2.2 The health perspective

The terms 'home modifications' and 'home adaptations' have been used widely in health care contexts to refer to 'any permanent alteration to a building carried out with the intention of making the building more suitable for a disabled person' (Heywood, 2004a, p.134). Somewhat more broadly, these services have been defined as 'changes made in a home environment in order to accommodate a particular set of human abilities' (Bridge, 2005). From this perspective, home modifications are viewed as corrective for problems specific to an individual, within a broadly medical approach (Wylde, 1998). Services are provided as part of discharge planning following hospitalisation (Auriemma et al., 1999) or within community health or health-funded in-home services.

In the context of health care systems, home modifications are generally recommended by professionals to ensure that a person with a particular impairment or health condition is safe and independent in their home (Auriemma et al., 1999), and to reduce the likelihood of admission to a hospital or care facility (Auriemma et al., 1999; Gitlin, Miller, and Boyce, 1999). The health condition is generally seen as having a predictable pathology, which allows care to be routinely managed and provided. Often recommendations are made with reference to a specific health problem and less consideration is given to other difficulties or impairments the person may have (Tinker et al., 2004). Home modifications may be part of a suite of interventions, including medication and remedial exercise, which focus on remediation or correction of the health condition. However, home modifications, along with assistive devices and other interventions, are also used where function is permanently impaired. With the focus being on the health condition of the person and the resulting consequences, interventions that remediate the condition or address the resulting dysfunction directly are prioritised.

In this approach, the home environment is conceptualised as a discrete physical entity where modifications can be routinely recommended in response to the person's identified functional impairments or health-related conditions. At times, assessment of the person's functional ability may be carried out in a clinical setting and recommendations made for the home environment without an on-site evaluation (Pynoos et al., 1998). When the home environment is examined, the focus is on potential safety concerns or specific physical barriers to performance of daily activities, with particular emphasis on non-discretionary self-care activities. Consequently, the focus tends to be primarily on the inside of the home, with less attention given to the ongoing maintenance and repair of the house and property and access to facilities in the yard and community. Typically, the types of modifications recommended include non-structural changes such as grab rails, shower seats and other assistive devices (Pynoos et al., 1998; Renforth, Yapa, and Forster, 2004). Structural changes such as widening doorways and ramps are less common due to the time required to arrange these, and cost factors (Auriemma et al., 1999; Pynoos et al., 1998; Tabbarah, Silverstein, and Seeman, 2000). With the focus on the individual's function, less attention tends to be given to the long-term suitability of the residence. Issues such as security concerns, the social acceptability of the modifications, or the impact of the changes on the meaning or value of the home tend not to be emphasised.

More recently, concerns about the prevalence of falls amongst older people living in the community have directed attention to potential hazards in the home environment, especially because approximately half the falls occur inside the home (Rogers et al. 2004). Home modifications have been recognised as one of a number of risk management strategies to reduce the number of falls among the elderly (Gillespie, Gillespie et al., 2001). Along with medication review, exercise, gait training and education regarding safe use of assistive devices (Rubenstein et al., 2002), home modifications have been used as a preventative measure to address the potential hazards in the homes of older people. A range of hazards such as clutter, obstacles, loose rugs, lack of supports and poor lighting have been identified as potential fall hazards (Clemson, Roland and Cumming, 1997) and interventions are focused on removing these to ensure the older person's safety. However, to date there is little evidence that broadly targeted programs aimed at removing environmental hazards in the homes of community living older people reduce the incidence of falls (Gillespie et al., 2001). More success has been achieved with tailored programs targeted at the specific needs of people with increased risk of falls, such as the frail elderly (Cumming et al., 1999) and those who have fallen previously (Close et al., 1999; Nikolaus and Bach, 2003).

Concerns regarding the rising incidence of dementia have resulted in a growing interest in ways to support older people with cognitive changes to remain living in the community. In this context, home modifications aim to support the caregiver who has responsibility for supervising and assisting the person in the home as well as the person with a cognitive impairment (Silverstein and Hyde, 1997). The focus of modifications and adaptations is to ensure the person's safety in the performance of activities of daily living in the home by preventing accidents and injuries and improving capacity to respond to dangerous situations such as fire. However, carer concerns with managing difficult or dangerous behaviours are also addressed (Colombo et al., 1998; Gitlin and Corcoran, 2000; Silverstein and Hyde, 1997). Modifications may include structural changes such as an additional bathroom or bedroom, reassigning particular rooms in the house, and adaptations such as fencing and gates, safety locks on doors and cupboards, outlet covers, night lights, and improved lighting. A

range of electronic devices such as smoke detectors, movement monitoring and alarm systems have also been used (Silverstein, Hyde, and Ohta, 1993).

New assistive technologies are increasingly recognised as being useful both in enabling older people and in monitoring and managing people with complex health conditions in the home (Colombo et al., 1998). Many generic technologies such as mobile phones, sensors, passive alarms and remote video cameras are being used to enhance the safety and independence of older people (Tinker, 1999). Dedicated environmental control, robotics, communication and security technologies have also been developed and are being integrated into the design of 'smart homes' (Cowan and Turner-Smith, 1999; Tinker et al., 2004). These technologies have the potential to decrease the likelihood of an adverse incident and also allow health conditions to be managed in the home rather than in a health setting. However these technologies raise ethical dilemmas (Tinker, 1999). Concern has been raised over whose needs are being met through these technologies. Older people may be at risk of being further isolated from human contact if they are to be managed and monitored remotely. Furthermore, the homes is a place of privacy, and intrusive technologies may be resented by the occupants or may adversely affect the meaning of 'home' (Heywood, 2004a).

Traditionally in health systems, changes in the home have focused on physical impairments or vulnerabilities. Somewhat less attention has been given to ways in which the home can be adapted to accommodate sensory, cognitive, emotional and social changes associated with ageing. With vision and hearing impairment being common in elderly people, attention is being directed to how the environment can be made easier and safer for people with sensory impairments. Better lighting, enlarged fittings, amplification devices, auditory signals, and contrasting colours are examples of such modifications in the homes of older people (Auriemma et al., 1999). Limited attention has been given to date to how the home environment can address the emotional and social needs of older people in the health system. It has been acknowledged that a supportive home environment makes it easier to carry out daily activities, thereby increasing self-confidence and self-esteem (Pynoos et al., 1998).

In summary, health care systems, policies and programs have provided one of the key contexts for the development of HMM services. Within the health care system, HMM services have been associated with discharge planning following hospitalisation, with care of chronically ill older people in the home environment (including older people with dementia and their carers), and with falls prevention. While practices vary widely, a number of characteristics of a health approach to HMM can be identified. The primary focus is on a particular health problem or condition, and home modification is perceived as one of a suite of interventions designed to remediate the problem or address dysfunction. The key concerns are with safety and the capacity to independently perform daily self-care activities. The main mode of intervention is the provision of minor, non-structural modifications, although structural changes are recommended in particular situations such as the care of older people with dementia in the home environment. There is increasing interest in the use of new assistive technologies as enabling and monitoring instruments. As the health approach to HMM emphasises individual function, there is less concern with issues such as the long-term suitability of a residence, the social acceptability of modifications, and issues of identity, meaning and lifestyle. The predominant emphasis is on physical impairment, and somewhat less attention has been paid to the sensory, cognitive, emotional and social changes associated with ageing.

2.3 The community care perspective

As well as being part of the repertoire of health service interventions for older people, HMM services have emerged in recent decades as part of the range of interventions provided through community care services. The central emphasis of community care policies in many countries has been on enabling older people to remain living in their own home and community, and on reducing admissions to residential care (Duncan, 1998a; Stone, 1998). In this context, HMM services have been defined as 'adaptations to living environments intended to increase ease of use, safety, security and independence' (Pynoos et al., 1998). The emphasis is on enabling the older person to continue living in the home environment, acknowledging their need to manage activities in and around the home, maintain the dwelling, and be safe and secure in their home. From the community care perspective, HMM services are one of a wide range of community care programs, which also include home nursing, delivered meals, home help, transport, shopping assistance, allied health services and respite care. Community care services are designed to assist families and carers in supporting older people (Steinfeld and Shea, 1993), as well as directly assisting older people.

While the main focus of HMM in health contexts has been on home modifications, in community care contexts the emphasis has been on both home maintenance and modification. The mode of delivery of these services varies considerably from place to place. Modification assessments are undertaken mostly by professionals situated in either health or social services (Klein, Rosage and Shaw, 1999), and the modification work is then undertaken by tradespeople and building contractors. Home maintenance assessments are undertaken by a wider variety of individuals including handymen, tradespeople, building contractors, social service organisations, and families themselves (Pynoos et al., 1998). Many community services provide maintenance and modification services directly to the consumer. However, it has been suggested that brokerage services that assist in both assessment and identification of a suitable provider may be more appropriate model for meeting older people's HMM requirements (Newman, 2003).

A number of ways of describing the range and diversity of HMM services in community care contexts have been developed. As well as the evident difference between modifications and maintenance (including repairs, and home and garden maintenance), a common distinction is between minor and major modifications, based on overall cost (Klein et al., 1999). However, this does not provide a clear description of the nature of adaptations undertaken. Home-based adaptations have also been described as behavioural, non-structural or structural (Pynoos et al., 1998). Behavioural adjustments include adjusting the way in which activities are carried out. Non-structural adaptations involve reassigning spaces, installing grab bars or better lighting, or using special equipment or assistive devices. Structural changes include ramps, wider doorways, stepless showers, and lowered countertops and cupboards (National Resource Center On Supportive Housing and Home Modification, n.d.; Pynoos et al., 1998).

There is considerable overlap between home modifications and use of assistive devices (Pynoos et al., 1998). In the United Kingdom, housing adaptations are classified as an assistive technology, defined as 'any device or system that allows an individual to perform a task that they would otherwise be unable to do, or increases the ease and safety with which the task can be performed' (Cowan and Turner-Smith, 1999, p. 325). While assistive devices are typically mobile and not attached to the structure of the house (Pynoos et al., 1998), home modifications are more permanent, secure and fixed in place. Assistive devices are sometimes favoured by professionals

and consumers when they are uncertain about how to undertake modifications (Pynoos et al., 1998; Steinfeld, Levine, and Shea, 1998), or reluctant to commit to a permanent or more costly change (Pynoos and Nishita, 2003).

A central theme in the community care literature is the role of HMM in delaying the need for personal assistance or avoiding an unwanted move, including a move into residential care (Gitlin et al., 1999). There are a number of practical, financial and personal reasons why older people may wish to remain living in their existing home (Heywood, Oldman and Means, 2002). Some may find the prospect of moving overwhelming (Heywood et al., 2002). Others may be uncertain about what is involved and lack the energy required to make such a change (Heywood et al., 2002). Downsizing may also present the challenge of storing or disposing of furniture and other possessions (Heywood et al., 2002). The cost of moving, fear of loss of an asset, or reduced security of tenure may prevent some older people from making a move. For many the family home holds a great deal of personal meaning and is an expression of their identity. It represents their achievements and history and provides them with status (Heywood et al., 2002). Many older people also wish to retain their independence as long as possible and consider a move a threat to their autonomy (Heywood et al., 2002). In all these circumstances, HMM services can assist the individual to 'stay put' rather than moving under duress (Clapham, 2005).

While community care programs vary widely in their approach to the provision of HMM services, a number of dominant themes characterise the recent professional and practice literature. There is a strong emphasis on viewing the focus of HMM assessment as analysis of the transaction between the person and their environment. Assessment models developed in the past decade have recognised the limitations of focusing on either the person and their impairments or the barriers in the environment, and have emphasised the interaction between the person and the environment (Rousseau et al., 2001a). The emphasis is on the way in which the person lives in the home environment, rather than on more narrowly defined self-care activities (Peace and Holland, 2001). These models recognise that environments can provide challenges or 'press' (Lawton and Nahemow, 1973), and that these vary for each individual. It has been proposed that the home environment needs to be adapted to better match the capabilities of older people, with an emphasis on establishing a balance between environmental demands and individual competencies (Gosselin et al., 1993; Rousseau et al., 2002). In this approach, home interventions are tailored to meet the particular needs of the individual. Difficulties the person experiences in the home are observed and analysed so that environmental challenges to daily activities can be addressed.

This emphasis on the transaction between the person and environment is underpinned by the social model of disability, with its emphasis on the role of the environment in creating disability (World Health Organization, 2001). From this perspective, an older person's disability arises from the inability of the home environment to accommodate their changing capacities (Cowan and Turner-Smith, 1999 Tinker et al., 2004). It has been proposed that older people are 'architecturally disabled' by shortcomings of residential design (Hanson, 2001), and this has led to an emphasis on reducing barriers to access and activity participation. The focus of attention has also shifted from the performance of basic self-care tasks to the capacity to manage in the home and the community. The social model of disability also extends the conceptualisation of the environment to include social and personal as well as physical factors.

The concept of 'independence' is central to the community care approach, both generally and with respect to HMM services. Independence is commonly associated

with the idea of living at home rather than in residential care, and it is sometimes argued or assumed that independence in this sense is the purpose of community care services, including HMM (Clapham, 2005, p. 216). However, studies of the meanings of independence held by older people suggest more nuanced associations with the use of this term, including 'being able to look after oneself', not being indebted to anyone', and 'the capacity for self-direction' (Clough, et al., 2004, pp. 119–20). Indeed, some older people considered that their independence was enhanced by a move to residential care. Central to the idea of independence is the sense of being in control with respect to both family and friends and formal caregivers (Heywood et al., 2002, pp. 55–7).

It is important to note that while HMM services are established in many countries as part of community care systems, there is evidence that these interventions are often under-developed relative to other community care services due to lack of training of providers and funding difficulties (Pynoos et al., 1998). Community care systems tend to prioritise those at risk of being institutionalised (Clapham, 2005). This may result in services being directed towards those with the least resources and the greatest level of 'need' as defined by professionals, rather than older people themselves (Clapham, 2005). Professionals tend to give highest priority to health and safety concerns, followed by independence issues, and then quality of life matters (Mann et al., 1994). These priorities may result in other community care services being given higher priority than HMM.

In summary, the development of community care programs in recent decades has provided significant impetus to the development of HMM services. Although HMM services remain relatively under-developed in many countries relative to other community care services, they have an established place as part of the repertoire of community care services designed to enable older people to remain living at home, and to reduce admissions to residential care. The key value underpinning HMM services is the 'independence' of older people, defined as the provision of choice to older people to 'stay put' in their own homes and as a sense of personal control. In the community care context, HMM services encompass home and garden maintenance, repairs, and non-structural (including assistive devices) and structural home modifications. An emphasis in the professional literature on HMM services provided in community care contexts is the need to focus on the interaction between the person and their living environment, rather than focusing more narrowly on individual abilities. From this perspective, HMM services need to be tailored to the particular circumstances of individuals and households, and to focus broadly on the capacity to manage in the home and the community.

2.4 The housing perspective

Many older people make modifications to their home environments and seek assistance in home maintenance independently of the health and community care systems. Viewed from this perspective, HMM services can be understood not primarily as part of the health and community care systems, but rather as generic services designed to assist people in later life to make housing decisions, choices and adjustments that best match their needs and preferences. As people progress through later life, their housing requirements and aspirations may change as a result of changes in household and family composition, employment status, health status, and life interests and lifestyle. In these circumstances, individuals have two broad choices: to move house or to make modifications to their existing housing. From a housing perspective, the purpose of HMM services is to enable people to modify and maintain their existing homes to accommodate changing circumstances, lifestyles and identities during later life. This conceptualisation of HMM encompasses, but is more universal in

scope than the ideas of, 'accommodating a particular set of human abilities' (the health perspective) and 'adapting living environments to increase ease of use, safety, security and independence' (the community care perspective). It suggests that HMM services may be applicable to many older people at all stages of later life, rather than only to older people with a diagnosed need for health and community care services. It also suggests the need to view all HMM services from a wider perspective that emphasises identity and lifestyle.

The patterns of changes that people make to their housing arrangements at different points in their life course are referred to in the housing literature as housing adjustment (Howe, 2003), housing careers (Kendig, 1984) or housing pathways (Clapham, 2005). These are similar concepts but with distinct emphases. Housing adjustments refers to the actual changes that individuals and households make in order to 'adjust' their housing to their needs, circumstances and preferences (Peace and Holland, 2001). Housing careers refers to the sequence of housing arrangements that an individual or household makes over their life. It is argued that broad societal changes are creating changes and greater diversity in established patterns of housing careers in many countries, including Australia (Beer, Faulkner and Gabriel, 2006). Housing pathways have been defined as 'patterns of interaction … concerning house and home, over time and space' (Clapham, 2005, p. 27). While the housing career approach focuses primarily on changes in the consumption of housing related to factors such as age, household structure, income and wealth, employment, and disability, the housing pathways approach emphasises the social meanings and relationships associated with housing. From a pathways perspective, housing must be viewed as more than a set of physical characteristics (space, layout, condition, access, etc.):

> … the house will (also) have a particular set of meanings to the household which may relate to its use as a home and the patterns of interaction within it. The house may be an element in the identity of the household, and the individuals within it, and may be a factor in lifestyle choice' (Clapham, 2005, p. 28).

This wider understanding of the significance of the home environment for all people, including people in later life, is widely recognised in the research literature. A dwelling, as well as providing essential shelter, has social, cultural and personal dimensions that contribute to the meaning that home holds for individuals (Fisher, 1998). Homes are places where people can express themselves through their possessions or routines, where they can engage in a range of roles, and where they can exert autonomy and control over use of time and space (Peace and Holland, 2001). At any age, housing bears significantly on quality of life (Pynoos and Regnier, 1997). Whether viewed emotionally or financially, it is often the 'biggest single investment that many people make in their lives' (Hanson, 2001, p. 37). For many older people, housing may hold even greater importance if they spend a great deal of time at home (Newman, 2003) or have lived in the same house for many years (Pynoos and Regnier, 1997). Whether rented or owned, the home is often the focus of people's 'hopes, dreams, achievements and memories', and connects them into social networks with their neighbours, friends and family (Hanson, 2001, p. 37).

The concepts of 'identity' and 'lifestyle' are central to this wider understanding of the meaning of home, as elaborated by Clapham, drawing on the sociological, theories of Giddens and others (Clapham, 2005). It is argued that in contemporary societies the decline of traditional institutions has resulted in a move towards individualism, and a situation where individuals are more able to make choices about the way they live. 'This is encapsulated by the concern with "lifestyle", by which is meant the desire to

choose an individual identity that leads to self fulfilment' (Clapham, 2005, p. 13). Identity is our sense of who we are as individuals, and is forged by our relations with others. Identity is never settled, and individuals engage in processes of 'life planning' as they adapt to changing circumstances. Lifestyles are distinctive modes of living that differentiate us from others. They concern consumption, use of time, and choices about household and family relations. 'Lifestyles are expressions of identity in daily life. They help to define our identity by patterning our interactions with others' (Clapham, 2005, p. 16).

These concepts provide a framework for thinking about housing in later life, including HMM services, that is broader than that suggested by the health and community care approaches. From this wider perspective, housing should be viewed not primarily in functional terms but as 'a means of fulfilment that allows other human activities to take place' (King, quoted in Clapham, 2005, p. 17). Most people in later life can be viewed as seeking to maintain or establish identity and lifestyle. Few think of themselves as being 'old' (Wylde, 1998) and even fewer identify themselves as 'disabled' (Heywood et al., 2002; Wylde, 1998). A wider focus on identity and lifestyle takes as its starting point the diversity of the housing aspirations of older people, and suggests that for many older people their housing needs and preferences will be shaped by lifestyle choices rather than by perceptions of their future frailty. The health and community care approaches have tended to be based on professionally defined concepts of need, and in many countries are increasingly targeted at those assessed as having 'special needs' and at those at risk of admission to residential care. They are based on a conventional view of the nature of the life course (Clapham, 2005, p. 222). 'When care is provided to (author emphasis) older people on the basis of professional definitions of need based on physical abilities, it is unlikely to meet the lifestyle and identity needs of older people' (Clapham, 2005, p. 232).

Clapham's formulation of the concept of housing pathways, with its emphasis on identity and lifestyle, has three specific implications for HMM policies and services for people in later life. Firstl HMM services can be viewed as centrally important to the provision of housing choice in later life. While many older people choose to move house as their needs and preferences change (Heywood et al., 2002; Stone, 1998), others have a strong preference to continue to live in their current dwelling, and HMM services have the potential to open up choices for this group (Tinker, 1999). Most obviously, HMM service can assist people in later life to adapt their house to their changing abilities. But HMM can also assist people in later life to: modify the use of particular rooms and spaces to suit new uses, interests and lifestyles; carry out maintenance, repair and up-keep; enhance the security of a house; reduce the cost of home maintenance; and change the appearance of a house. Older people use a wide range of strategies to enable them to remain living in the community (Peace and Holland, 2001). HMM services can be viewed as one important means of enhancing the range of options available to people in later life to create housing and living arrangements that meet their needs and reflect their identity and lifestyles.

This conceptualisation of the role of HMM services is consistent with a wider view of the role of housing policy for older people that emphasises the role of governments in facilitating housing choice and housing adjustment rather than prescribing specific housing outcomes. Howe (2003, p. 10) has suggested that the housing situation of older people is of interest to policy because of mismatches between the housing they occupy and their housing need, and that the extent and nature of the mismatch varies widely across the older population. All older people can be classified according to their need to making a change in their present housing, and their capacity to make the desired change. Within this framework, the role of HMM policy and services is to provide assistance to those wishing to make housing adjustments within the context of

their current dwelling, with a particular focus on those who for reasons of low income, limited skills or lack of information have limited capacity to make these changes. The 'aim of public policy should not be to achieve particular outcomes on the housing pathway but to enable people to take control of their pathway through the ability to make choices' (Clapham, 2005, p. 234).

The second implication of an emphasis on identity and lifestyle is the need to take these factors into account in the design and delivery of HMM services. Concern has been raised about the negative effects of home modifications on the meaning of home, and the lack of attention to this dimension in HMM programs and policies (Messecar et al., 2002). Home modifications have been found to have a negative impact on people's self-image and connection with the home (Heywood, 2005), as well as on routines and sense of heritage (Heywood, 2005). Adaptations to the home can result in older people being labelled as different and, more importantly, make them vulnerable to ridicule or violence (Fisher, 1998). For this reason, it is important that adjustments in the home are considered holistically, rather than focusing solely on specific issues such as performance of self-care tasks (Heywood, 2005). It has been shown that acceptance of interventions such as assistive devices is influenced by whether they support or undermine the older person's sense of personal identity (Harrison, 2004). Older people and their families may reject HMM services because they have different perspectives and priorities than those of the service providers (Gitlin, Luborsky, and Schemm, 1998), or because of the perceived impact on their sense of independence and autonomy (Messecar et al., 2002).

Thirdly, an emphasis on identity and lifestyle suggests the importance of viewing HMM services simply as one set of options for older people seeking to adjust their housing, rather than viewing 'staying put' as an overriding policy goal. The perceived importance of 'staying put' has been one of the cornerstones of public policy in community care. However, it has been argued that 'staying put' has influenced evaluation of consumer need to such an extent that the housing needs of older people can be overshadowed by assessments for community care (Peace and Holland, 2001). While research suggests that many older people prefer to remain living at home as long as possible (Parker et al., 1998), it cannot be assumed that all older people are well served by 'ageing in place' (Auriemma et al., 1999; Filion, Wister and Coblentz, 1992). Many may not prefer to remain in houses that are ill suited to their requirements in old age. A significant number of older people live in large, old homes in constant need of maintenance and repair, which provide an ongoing challenge to their safety and independence (Tinker, 1999). What was once a 'castle' and a testament to their status and identity can become a 'cage' or millstone, undermining their identity and restricting their freedom and lifestyle (Heywood et al., 2002). Dwindling social networks and mobile families can also result in older people feeling isolated in changing communities. While many older people do wish to 'stay put', 'independence' for many people means more than simply remaining in one's own home (Heywood et. al, 2002). HMM services are a means of adjusting housing to match an individual's lifestyle, rather than a means of enabling individuals to 'age in place'.

In summary, HMM services can be viewed from a housing perspective as services of universal applicability that enable people to modify and maintain their existing homes to accommodate changing circumstances, lifestyles and identities during later life. Housing choices in older age are shaped by the broader quest to maintain or establish identity and lifestyle, as well as by the need for shelter and support. From this perspective, HMM policies and services are designed to assist people to take control of their housing pathways in later life, rather than to achieve specific housing outcomes. HMM services are a means of enhancing the range of options available to

people in later life to create housing and living arrangements that meet their needs and reflect their identity and lifestyles. They should be delivered in ways that take into account the meanings of house and home for older people, but they do not assume that 'staying put' is an overriding objective.

2.5 An integrated perspective

The definition of HMM services is a contested issue. HMM services have developed in the contexts of health, community care and housing service systems, and the academic and professional literature in each of these contexts provides differing perspectives on the purposes of HMM policies and services, and emphasises different forms and types of provision. As will be shown later in this Positioning Paper, this theoretical diversity is reflected in the fragmented nature of HMM service delivery systems. Theoretical divisions are mirrored in patchwork services.

One purpose of this Positioning Paper is to propose an integrated approach to HMM that encompasses the three approaches identified in this study, and enables the field of HMM to be considered as a whole. This integrated approach, including examples of types of interventions, is shown in Table 1. Home maintenance and modification (HMM) services are defined as structural and non-structural modifications, repairs and ongoing maintenance of the homes of people in later life designed to enhance their safety, independence, and/or sense of identity and lifestyle. HMM services may be direct (actual service provision) or indirect (information, advice, assessment, case management, grants and loans). They may be provided on a selective or universal basis, and may or may not involve user charges or co-payments. The recipients of HMM services include older people living in their own houses as owners, purchasers or renters, and older people living with friends or family. While older people are the focus of this study, many HMM programs and services are also relevant to the needs of younger people with permanent or temporary incapacity.

The three goals or outcomes of HMM services reflect the primary emphases of the health (safety), community care (independence) and housing (identity and lifestyle) perspectives discussed in this chapter. It is stressed that these perspectives are presented as 'ideal-types': a particular health, community care or housing-based HMM service may well have elements of each, and there has been significant cross-fertilisation of ideas. Furthermore, many individual services cannot be unambiguously classified as health, community care or housing services, being located at the intersection of service systems. Nevertheless, safety, independence, and identity and lifestyle do represent alternative conceptions of the primary purpose of HMM services. While these goals may be viewed as complementary, the relative weight given to each within a particular HMM service or service system will affect the type of service offered, eligibility and priority arrangements, service rationing, modes of service provision and delivery, staffing and assessment of outcomes. A comprehensive approach to the provision of HMM services would be concerned with health, community care and housing outcomes, and would be integrated with the health, community care and housing service systems.

Table 1: HMM services: goals and interventions

	Safety	Independence	Identity and Lifestyle
Structural modifications (Changes to the fabric of the home)	→ Redesign of bathroom/kitchen → Improved lighting → Additional rooms for carers → Fencing and gates	→ Redesign of bathroom/kitchen → Widening doorways and passages → Lowering countertops and cupboards	→ Safety and independence modifications undertaken in ways that avoid 'institutional' appearance of home → Addition and modification of spaces to new uses, interests, lifestyle and household structure
Non-structural modifications (Installation or alteration of fittings and fixtures)	→ Grab-rails → Clear swing hinges → Non-slip flooring → Stepless showers → Safety locks → Outlet covers → Night lights → Alarm systems → Smoke detectors → Movement monitoring	→ Grab-rails → Bath-boards → Shower seats → Security lighting → Security doors and grills → Mobile phones → Smart home technologies → Amplification devices and auditory signals → Reassigning spaces → Insulation and heating	→ Safety and independence modifications undertaken in ways that avoid 'institutional' appearance of home → Minor modification of spaces and furnishings to facilitate hobbies and interests, and social and recreational activities → Safety and independence modifications provided in ways that enhance privacy and self-esteem
Repairs (Fixing damaged or unserviceable elements of the home and its surrounds)	→ Repairs handrails, steps, cracked paths, uneven flooring	→ Repair steps to maintain access → Repair locks, latches, security doors → Repainting to prevent deterioration	→ Repairs to preserve appearance of home
Maintenance (Maintaining the functioning or amenity of the home and its surrounds)	→ Replacing smoke alarm batteries → Replacing light bulbs	→ Mowing lawns to allow access to yard → Yard maintenance to signal house is occupied	→ Maintenance to preserve appearance of home → Lawn mowing and rubbish collection to maintain appearance

The goals of safety, independence, and identity and lifestyle are consumer-focused in that they relate directly to consumer outcomes, whether defined by professionals, service providers or consumers themselves. However, the goals of HMM services may also be defined in policy and system terms. Within the health system, HMM services may be linked to the goal of reducing health expenditure by preventing falls and other accidents, by enabling patients with chronic illness to be managed in the community, and by facilitating early discharge from hospital and reducing risk of readmission. Within the community care system, HMM services are part of a suite of community care services designed to prevent unnecessary admission into residential aged care facilities. From a housing system perspective, HMM services enable older households to make efficient and effective choices with respect to their housing consumption. They can be viewed as part of a wider package of measures to enable older people to address their housing needs and reduce demand on the social housing system from people in later life.

The four forms of provision identified in Table 1 have in common a focus on the characteristics of the dwellings of older people. This is the focus that distinguishes them from other forms of care and support for older people which are centred on the tasks of daily living (cleaning, meal preparation, etc.), and provision of nursing and care services in the home. Prevailing terminology concerning the types of HMM services is not standardised and terms are used inconsistently. It is common for a distinction to be drawn between minor and major modification, usually in terms of the cost of the work undertaken, but this definitional boundary is sometimes blurred. In some programs the provision of minor modifications is categorised as a form of 'equipment and aids', but this is not a consistent usage. Home maintenance is variously defined as including or excluding repairs and garden maintenance.

The approach adopted in Table 1 is to distinguish between 'structural' modifications that require changes to the fabric of the home (e.g. widening doorways and passages and re-modelling kitchens or bathrooms) and 'non-structural' modifications that are mainly concerned with installation or alteration of fittings and fixtures (e.g. grab rails and ramps). Repairs involve mending damaged or unserviceable elements of the home and surrounds, including steps, paths, floor coverings and lighting. Maintenance is work that is required on a continual basis to maintain the functioning and amenity of the home and surrounds, such as replacing smoke alarm batteries and garden maintenance. Each of these four types of HMM services can be linked to the outcomes of safety, independence, and identity and lifestyle.

Another useful distinction is between direct and indirect HMM services. Direct services involve actual service provision, while indirect services may take many forms, including: the provision of information and advice; assessment, case management, and brokerage; project management; and grants and loans. Examples of HMM services provided in the Australian context are:

→ Modifications undertaken by public and community housing landlords to meet the needs of individual tenants;

→ Grants or loans to assist homeowners or renters with home modifications;

→ Information, advice, tools and kits to assist in planning and implementing modifications or locating assistance;

→ Occupational therapist and building assessments of the need for modifications, and of the form these should take;

→ Project management of home modification work;

→ Provision of home and garden maintenance services.

Some HMM services may specialise in only some forms of assistance, while others may provide a comprehensive service, including case and project management. HMM services may be provided in the state, community or market sectors, and the role of each of these sectors in HMM is an important service system issue. Services may be provided free of charge to the user, or there may be a charge or a co-payment (often for materials). HMM services may be fully or partially subsidised, may seek full cost recovery, or may be set up as profit-making enterprises.

In summary, a broad conceptualisation of HMM services must take account of the three contexts in which HMM services have evolved: health, community care and housing. While each of these contexts has a distinctive mode of operation and primary goal, an integrated approach to conceptualising and developing HMM services will recognise safety, independence, and identity and lifestyle as complementary goals. The development of a public policy framework for HMM must be based on recognition of the role of these services in achieving health, community care and housing outcomes. The challenge is to develop an integrated approach that transcends the separate development paths that HMM services have taken to this point, and that is cognisant of the diversity of roles that these services can play for people in later life.

3 THE AUSTRALIAN POLICY CONTEXT

3.1 Introduction

This project is concerned with the role and potential role of HMM services, as defined in Chapter 2, in policies and service systems designed to respond to the ageing of the Australian population. This requires an examination of the emergence of ageing as a policy focus in Australia, and the nature of this policy field. This is the focus of this chapter. The starting point is a brief description of the nature and extent of population ageing in Australia, and the emergence of ageing as a political issue. The main themes of the ageing policy debate are then introduced, with particular attention to the themes of 'fiscal sustainability', 'positive ageing' and 'ageing in place'. The key issues relevant to HMM in the three ageing policy fields of health, aged care and housing are then introduced. The chapter concludes by summarising the potential significance of HMM services to ageing policy in Australia. This provides the context for the detailed description of HMM services in Australia in Chapter 4 and the identification of key research and policy issues in Chapter 5.

3.2 Population ageing in Australia

The conventional starting point for analysis of ageing policy in Australia is the demography of older age. As is the case in many developed countries, Australia's population is ageing and is likely to continue to do so at a rapid rate over the next several decades (ABS, 2003a, p. 1). The ageing of Australia's population has been in progress for a century or more, but the current phase of increase of the older population has taken place since the 1970s (Borowski and Hugo, 1997, p. 23). In 1971 the proportion of the population aged 65 or over was 8.3 per cent, rising to 9.8 per cent in 1981. A decade later this proportion had risen to 11.3 per cent, and in 2001 it had reached 12.6 per cent (ABS, 2003a, p. 1). During much of this period, Australia's rate of population growth was one of the highest among comparable countries (Gibson, 1998, pp. 7–10). However, according to population projections prepared by the ABS, this proportion is likely to rise at a much faster rate in the early decades of the new century, rising to 22.3 per cent by 2031 (ABS, 2003a, p. 7). While the accuracy of population projections is contingent on the assumptions on which they are based, the broad pattern of population ageing is undisputed: 'substantial ageing in Australia over the next few decades is absolutely inevitable' (McDonald and Kippen, 1999, pp. 50–1).

As well as ageing structurally (i.e. the proportion of older people in the population), the population of Australia is ageing in numerical terms. There were 2.4 million Australians enumerated in Australia in 2001; it is projected that by 2031 this will have risen to 5.4 million (ABS, 2003a, pp. 1 and 7). Much of this anticipated increase is due to the 'baby boom' cohort of Australians born between 1946 and 1965, the oldest of whom will be aged 65 in 2011. The anticipated social and economic impact of the baby boomers, a group widely perceived to have quite different experiences and expectations than those of previous generations of older people, has become a major public policy concern in the early twenty-first century.

There are also important changes to the age structure of the older population resulting from reductions in the death rate amongst older Australians during the past 30 years and increases in life expectancy. In 2001, there were 262,700 Australians aged 85 or over, up from 151,100 ten years earlier. People aged 85 or over comprised 1.4 per cent of the Australian population in 2001, compared with 0.9 per cent in 1991 (ABS 2003c, p. 5). It is projected that this age group will comprise 2–3 per cent of the

population in 2021 and 6–8 per cent by 2051 (ABS, 2006a). However, increases in life expectancy have not been matched by improvements in rates of disability and handicap, and incidence of chronic illness among the elderly (Borowski and Hugo, 1997, pp. 34–6). Hence, the structural ageing of the older population is likely to have a significant impact on the nature and size of demand for a wide range of health, aged care and housing services, including HMM.

3.3 The emergence of ageing policy

The ageing of the Australian population emerged as a political issue during the 1980s and 1990s, reflecting the growth of the older population. While population ageing had been a focus of policy concern at various times during the first half of the twentieth century, issues relating to ageing and later life were generally not centre-stage during the 25 years after the Second World War (Borowski, Encel and Ozanne, 1997, pp. 1–2). During these decades, the elderly were perceived as a group with special needs for income support, aged care and health services (Kendig, 1990, pp. 8–11). However, 'up until the early 1980s, it was virtually impossible to identify a distinctive strand of Australian public policy which could be called "policy on ageing"' (Pfeffer and Green, 1997, p. 276).

Since the 1980s, and most particularly during the past decade, public and political interest in ageing has burgeoned. Ageing policy, in the early twenty-first century, is now well established on the national political agenda. At the Australian Government level, a number of national reports have drawn attention to the challenges posed by population ageing and the need for a whole-of-government approach. These include the *National Strategy for an Ageing Australia* (Andrews, 2001), the *Intergenerational Report, 2002–2003* (Australia, 2002), the *Intergenerational Report, 2007* (Australia, 2007), the Productivity Commission's report on the *Economic Implications of an Ageing Australia* (Australia, Productivity Commission, 2005), and the report of the House of Representatives Standing Committee on Health and Ageing on its *Inquiry into Long-Term Strategies to Address the Ageing of the Australian Population Over the Next 40 Years* (Australia, Parliament, House of Representatives, 2005). There is a national Minister for Ageing, one of two ministers for the Department of Health and Ageing (DOHA), with responsibility for aged care programs and related ageing policy matters, which are managed by the Ageing and Aged Care Division. The Australian Government's interest in ageing has focused on its key areas of responsibility and expenditure: health care, aged care, income security, employment, and management of the national economy.

This level of policy attention is mirrored at the state and territory levels. During the 1980s, several states developed administrative units with a focus on ageing (Pfeffer and Green, 1997, pp. 293–8), and all states and territories now have ageing policy units variously located in departments concerned with human services, ageing or community development, or in the Department of the Premier or Chief Minister. A central task of most of these units is the development of whole-of-government ageing strategies, and all states and territories have such strategies in place (these are documented in Jones et al., 2007, pp. 88–9). The Australian, state and territory governments jointly developed a strategy on healthy ageing in 2000 (Australia, DOHA, 2000). The policy significance and political influence of these administrative units and strategy documents varies from state to state. However, collectively they signify the high level of awareness of ageing as a policy issue in Australia the early twenty-first century.

The emergence of ageing as a public policy theme has been driven by demographic change combined with growing awareness of the need for substantial change to public policy settings to address the challenges of an ageing population (McDonald and Kippen, 1999, p. 48). It has been argued that ageing has emerged as a policy concern primarily as 'a dominant rather than an oppositional discourse' (Gibson, 1998, p. 5), that is, as a concern of policy makers anxious about the perceived challenges and difficulties of governance of an ageing society. While this is clearly so, a number of other factors are also reinforcing the political salience of ageing. Population ageing is a characteristic of many economically developed nations (Hill, 2006, pp. 241–58), and national concerns are highlighted by the international focus on ageing (e.g., Andrews, 2002). There has been a rapid growth in the size and number of industries providing services to older people, including health care, aged care, financial services and housing, and these service industries have become increasingly vocal, organised and politically influential. There has also been an expansion of research on ageing, which has resulted in a large and ever-growing volume of information, ideas and policy proposals. Older people as a class are also becoming politically organised through organisations such as COTA (formerly the Council on the Aged, and now called Connecting Over-50s Throughout Australia), and awareness of the electoral significance of older people is well established. In short, the prominence of ageing policy over the next two decades appears to be as 'absolutely inevitable' as the growth of the older population itself.

3.4 Major themes

The growth of the older population and the emergence of ageing policy provide the general backdrop to contemporary interest in HMM policies and services. However, it is necessary to link HMM more explicitly to specific ageing policy themes. Three key sets of themes are relevant: fiscal sustainability, positive ageing, and 'ageing in place'. In order to place HMM services in the broader ageing policy context, each of these themes needs to be briefly described.

3.4.1 Fiscal sustainability

The central issue in ageing policy in Australia during the past decade has been the impact of ageing on the long-term fiscal sustainability of Australian government. This issue gained prominence internationally in the early 1990s, and gained momentum in Australia in the mid-1990s (Borowski et al., 1997, pp. 8–15). A report prepared by the Economic Planning Advisory Council (EPAC) in 1994 drew attention to the economic implications of population ageing for Australia, focusing on issues such as the likelihood of increasing expenditure on health and welfare, and reduced labour force participation rates (Clare and Tulpule, 1994). A far stronger statement was delivered by the National Commission of Audit in 1996 (Australia, National Commission of Audit, 1996). It argued that Australia was facing a dramatic increase in ageing dependency in coming decades that would result in strong budgetary pressures. It proposed a series of measures involving shifting of responsibility from governments and towards greater self-reliance in older age (Borowski et al., 1997, pp. 12–13).

More recent reports prepared by the Productivity Commission (Australia, Productivity Commission, 2005), the Commonwealth Treasury (Australia 2002; Australia 2007), and the Department of Health and Aged Care (now the Department of Health and Ageing) (Australia, DOHA, 1999) have developed a more elaborate understanding of the fiscal and economic implications of population ageing in Australia. The dominant perspective presented in these reports is that population ageing will require new policy approaches, but that it is not a crisis at this stage. The Productivity Commission summarised its position as follows:

Population ageing has been called the quiet transformation, because it is gradual, but also unremitting and ultimately pervasive. Population ageing will accelerate over the next few decades in Australia, with far-reaching economic implications. It will slow Australia's workforce and economic growth, at the very time that burgeoning demands are placed on Australia's health and aged care systems. Unless offsetting action is taken, a gap will open up between Government revenue and spending that will need to be closed … Population ageing will require new policy approaches at all levels of government (Australia, Productivity Commission, 2005, p. xiii).

Whereas earlier analyses focused on measures such as dependency ratios, the most recent Australian Government reports have emphasised 'fiscal gap', that is, the amount by which spending is projected to exceed revenue at various points into the future as a consequence of population ageing and other factors (Australia, 2007, p. vii). The most recent Intergenerational Report projected that the fiscal gap in 2046/47 for the Australian Government would be around 3.5 per cent of GDP, a significant improvement over the 5 per cent projected in 2002/03 (Australia, 2007). Factors identified as having contributing to the improved outlook include reductions in the estimates of the rate of growth of projected spending per person and higher projected GDP per person. Two small but significant changes during the past five years have been an increase in the fertility rate and an increase in the workforce participation rates of older men. Looking forward, the major pressures on the expenditure side continue to be in the areas of health and aged care expenditure, and on the income side the negative impact on GDP of reduced overall workforce participation rates. The central emphasis of public policy on ageing at the national level is to address the fiscal gap over the long term through measures to increase labour force participation and economic productivity, while limiting public expenditure in areas such as income support by encouraging private saving (Australia, 2007). This broad approach developed by the Treasury and the Productivity Commission now constitutes the prevailing approach to macro-ageing policy in Australia.

3.4.2 Positive ageing

Alongside the macro-ageing policy discourse is another that is concerned with the issue of how older people are perceived and treated both in public policy processes and in community life more generally. This set of ideas is broadly concerned with addressing negative stereotypes about older people and their role in society, and constructing public policies that facilitate more positive views of older people, that enhance their quality of life, and that recognise and make possible their societal contribution. These ideas stem in part from developments in social gerontology since the 1970s that challenge a prevailing view of growing old as a period dominated by physical and mental decline, often accompanied by disengagement from society. There has been an emphasis in social gerontology on the ways in which societal processes, including public policies, have constructed the experience of older age (Phillipson, 1998). This has led in turn to an emphasis on the need to develop more positive constructions of ageing both in public policy and in the wider society.

The idea of viewing ageing in a positive frame, and developing policies and programs accordingly, has been adopted with great enthusiasm by policy makers and older people's advocacy organisations in Australia since the 1990s. Whereas the macro-ageing issue of fiscal sustainability has been the primary motif of economic policy departments and agencies at the national level, 'positive ageing' (and its synonyms) has been the core theme of the State and Territory Offices or Ageing and of many other departments and agencies involved in health and social service provision to older people. The titles of the strategic plans and frameworks developed by the states

and territories during the past decade reflect the dominance (and the diversity of emphases) of this theme. The Commonwealth, state and territory ministers responsible for ageing produced a combined 'strategy on healthy ageing' in 2000 (Australia, DOHAC, 2000). Tasmania has had a plan for 'positive ageing' (Tasmania, DHHS, 1999), Western Australia and the Northern Territory have had 'active ageing' strategies (Northern Territory, DHCS, 2006; Western Australia, DCD, 2004), and New South Wales has had a framework for 'healthy ageing' (New South Wales, ADD, 1998). The notion of inclusion of older people in society is stressed in Queensland's 'State for all ages' (Queensland, DOF, 2003), and Victoria's 'Making this the age to be' (Victoria, DHS, 2003). Other terms such as 'successful ageing' (Powell, 1992), 'productive ageing' (Ranzijn and Grbich, 2001), and 'ageing well' have also become part of the common language of ageing policy.

The use of such terms serves a symbolic purpose in emphasising a positive construction of ageing in policy and social life. Linked to this symbolism are a number of specific themes, which are reiterated with great consistency across national, state and territory reports on ageing policy. While the 'principles' of ageing policy have been expressed in a number of different ways (e.g. Andrews, 2001, pp. 2–3; Australia, DOHAC, 2000, pp. 3–5; Victoria, DHS, 2003, p. 7), four themes clearly predominate: healthy ageing, productive ageing, social participation and personal responsibility.

The theme of 'healthy ageing' has been central in all national and state and territory strategies on ageing during the past decade. The intent has been to emphasis the potential for good health for a high proportion of the older population, and to develop strategies to enhance health in later life. Key emphases have been on reducing the incidence of preventable diseases, delaying the onset of conditions associated with ageing, and effectively managing illnesses that do occur (Andrews, 2001, p. 36). Strategies include the promotion of lifestyles among the general and older populations that maintain health, and encouraging older people to remain active, participating members of the community. There has been an emphasis on the development of programs of health promotion, prevention, maintenance of function, and rehabilitation (Australia, Parliament, 2005, pp. 64–6). An important theme has been the need to prevent unnecessary hospital admissions and to provide hospital discharge processes that assist older people to manage health problems at home (Australia, DOHAC, 2000, pp. 17–18).

The idea of 'productive ageing' has also been a dominant theme in recent Australian ageing policy. At its broadest level, productive ageing is concerned to emphasise the contribution that older people make as they age, and to redress the emphasis on economic dependency and the burden of ageing. There is a strong emphasis on the contribution that older people make as caregivers and volunteers, and the impact of these activities on reducing public expenditure (Australia, DOHAC, 2000, p. 13; Australia, Parliament, 2005, pp. 91–4). The role of older people as consumers, and the growth of new industries associated with the needs of older people, are also emphasised (Australia, DOHAC, 2000, pp. 14, 19–20; Australia, Parliament, 2005, pp. 89–90). There is also a strong emphasis on extending the length of time for which people remain in the paid workforce and reducing barriers to workforce participation in later life (Andrews, 2001, pp. 16–23). The Victorian ageing strategy summarised this theme by suggesting that, 'as the population ages, we will need to think more flexibly about breaking down the traditional distinctions between the various stages of life – education, work and retirement – and think more in terms of a continuum of productive activity' (Victoria, DHS, 2003, p. 24).

Positive ageing is also associated with the idea of active engagement with and participation in society in later life. In broad terms, the goal is to 'eliminate age as a

reason to exclude any person from participating fully in community life' (Australia, DOHAC, 2000, p. 4). Themes include the need to address discrimination and break down stereotypical views of older people, and to facilitate opportunities for people to be involved in education, training, the arts, recreation and employment, including an emphasis on lifelong learning (Australia, Parliament, 2005, pp. 17–20). There is an emphasis on 'age-friendly communities' that facilitate older people's participation and involvement (Australia, Parliament, 2005, pp. 13–17). The creation of age-friendly communities includes provision of transport, communication, technology, housing and leisure services and infrastructure that enhance the lifestyle and community participation of older people (Andrews, 2001, pp. 28–31).

Finally, in Australia, there has been a strong emphasis on the theme of personal responsibility and independence in later life, and reduced dependency on society. The principles outlined in the *National Strategy for an Ageing Australia* (Andrews, 2001, pp. 2–3) emphasised that 'public programs should supplement rather than supplant the role of individuals, their families and communities'. Similarly, the 'healthy ageing' principles enunciated by the Commonwealth, state and territory ministers in 2000 stressed the need to 'encourage personal responsibility while providing support for those most in need' (Australia, DOHAC, 2000, p. 3). While there has been a strong emphasis on developing a wide range of services for older people, in key areas such as retirement incomes, aged care, health, and housing, there has also been a strong emphasis on promoting opportunities for older people to prepare for their own ageing.

The reconceptualisation of ageing in positive terms is widely accepted and supported in Australia and constitutes a new orthodoxy of ageing policy. However, this perspective is not without its critics. It has been argued that some advocates of healthy ageing promulgate a romantic and unrealistic view of older age that insufficiently acknowledges the realities of ill health in older age and that may lead perversely to a withdrawal of support for older people (McCallum 1997, pp. 56–7). Themes such as productive ageing and independence in later life raise issues about the role and extent of public provision for older people, and may be used to justify limited public provision. They may reflect concerns about fiscal sustainability rather than positive views of ageing (Ozanne, 2000), and may not be realistic about many individuals' capacity to achieve self-reliance (Ranzijn et al., 2004). Issues of inequality and diversity amongst older Australians may be relatively neglected as policy attention focuses on the reconceptualisation of ageing for all those in later life.

3.4.3 Ageing in place

Fiscal sustainability and positive ageing can be viewed as the central macro-themes of ageing policy in Australia that affect a wide range of ageing policy areas. Another broad theme that has shaped ageing policy in areas of particular relevance to HMM is 'ageing in place'. In the Australian context, the term 'ageing in place' has carried a number of meanings. In the narrowest sense, it has been used to refer to changes introduced in the late 1990s in the residential aged care system that allow residents to make the transition from low-care to high-care service without having to move between facilities (AIHW: Angus et al., 2002). More broadly, it refers to the capacity of older people to continue to live at home for as long as possible, rather than moving to a residential aged care facility (Tinker, 1999). In the most general sense it is used to refer to the idea of 'staying put', that is, older people remaining in their own home and/or community rather than being required to make involuntary moves to new dwellings or locations.

Ageing in place has been widely viewed as a principle of ageing policy that should underpin policy and services in areas such as aged care, housing, urban planning, and provision of community infrastructure for older people. It is based on the

widespread belief that the majority of older people wish to remain in their current homes as they age. This is based on evidence that older people move residence far less frequently than younger people (ABS, 2003a, p. 16), on studies that emphasise the strong attachment that older people have to their home (e.g. Davison et al., 1993), and on a large international body of literature that indicates that most older people prefer to stay in their own homes rather than enter residential care (Gibson, 1998, pp. 12–13). The principle of ageing in place has underpinned the deinstitutionalisation of aged care and the growth of home-based care for older people in Australia (Gibson, 1998, pp. 10–16). It has also underpinned the development of a range of policies by state and local governments to create 'age friendly communities' (Bartlett and Peel, 2005; ALGA, 2006).

While the concept of ageing in place is widely used in Australia in the context of community care, housing and urban planning policies for older people, a number of questions have been raised concerning its use as a general principle in ageing policy. There is evidence of increasing residential mobility amongst older Australians, particularly voluntary moves associated with lifestyle factors (Borowski and Hugo, 1997, pp. 36–44). Recent research has suggested that older people are more attached to locality than to a particular dwelling, and that the baby boomer generation will be increasingly willing to move house as their life circumstances change (Olsberg and Winters, 2005). The emphasis in the international literature is now on understanding the range of factors that may lead an older person to move or stay put, rather than assuming that ageing in place is an underlying preference (Clough, et al., 2004; Heywood et al., 2002).

3.5 Key ageing policy fields

In Chapter 2, HMM was characterised as a policy and service system located at the intersection of the health, community care and housing policy fields. In order to locate HMM in its policy context it is therefore necessary to also briefly describe the main contours of these ageing policy fields in Australia and their links to HMM. A number of key themes in these policy fields have already been discussed. In this section, the emphasis is on locating HMM in the recent development of health, community care and housing policies for older people in Australia.

3.5.1 Health policy

Health policy is centre-stage in ageing policy. It is central to concerns about both fiscal sustainability and successful ageing, and is located at the interface of these perspectives (McCallum, 1997). With respect to fiscal sustainability, the main policy driver is concern over the impact of population ageing on health expenditure. The incidence of sickness and disability rises with age, and people aged 65 or over use significantly more health services per person than younger people. Health expenditure on people aged over 65 is approximately four times per person more than for younger people, and even greater for the oldest age groups (Australia, Productivity Commission, 2005, p. xxix). Health expenditure has been steadily rising as a proportion of GDP since the 1970s, and is predicted to continue to rise. The main drivers of increasing expenditure are technological developments such as new drugs and greater use of diagnostic procedures. However, population ageing is projected to contribute to one-quarter of the increase in health spending over the next 40 years (Australia, 2007, pp. 47–51).

These concerns, in tandem with the emphasis on 'healthy ageing' (discussed above), have driven a number of related policy and program emphases directly linked to the provision of HMM services. Of particular significance are falls prevention programs. Falls account for 55 per cent of total injuries reported in the 65 and over age group,

and the majority of falls take place in the home (Australia, DOHA, 2003, pp. 29–30). The incidence of falls is a major cause of hospitalisation of older people, particularly the very old, and falls are a leading risk factor for entry to residential aged care. The Australian Government's National Falls Prevention for Older People Initiative was introduced in 1999 to provide a coordinated national approach to falls prevention. HMM services have an important role to play in falls prevention, and there is increasing recognition that falls prevention needs to be viewed from a housing as well as a health perspective (Australia, Parliament, 2005, p. 69).

There is also recognition of the links between rates of hospitalisation of older people and the nature and quality of their home environments. The creation of age-friendly environments at home or in the local community that increase capacity for self-care and independence is of great importance to hospital discharge processes and the goal of minimising time spent in expensive hospital facilities (McCallum, 1997, p. 69). People aged 65 or over account for one-third of all hospital admissions and over 40 per cent of the cost. The average cost for a hospital stay for a person aged 65 or over is 50 per cent higher than for younger people (DOHA, 2003, p. 34). HMM services that improve the safety of the home environment, and assist older people to live independently, have key roles to play in reducing hospital admissions and the period of hospitalisation.

The roles of HMM services within the health care system for older people are also linked to the wider issue of the integration of hospitals, primary health care systems and community care services in managing the care of older people in the community with complex and chronic health conditions. There has been a long-standing emphasis in some areas of geriatric medicine on the need for an integrated approach to the management of older people with chronic health conditions, although this has been severely hampered by funding and organisational arrangements that separate hospital, primary health care and community care provision (Andrews and Carr, 1990, p. 119; Healy, 1990, pp. 144–6). In recent years there has been an emphasis on strengthening the capacity of the primary health care system to serve older people with chronic health conditions, and developing closer integration of health and community care services. However, the interface between the health and community care systems remains problematic (Australia, Parliament, 2005, pp. 124–7, 164–72; Healy, 1990, pp. 143–4; Howe, 1997, pp. 317–18).

HMM services also have an important role in the area of dementia care, as indicated in Chapter 2. It is estimated that over 160,000 Australians have dementia, and it is projected that as the number of older people (especially those aged over 80) increases, the number suffering from this disease will rise to 450,000 by 2041. A significant number of dementia-specific programs have been developed in recent years, and it is anticipated that there will be large increases in health and community care expenditure in this area in coming decades (DOHA, 2003, pp. 47–8). HMM services can play an important role in modifying home environments to facilitate safety and assist carers, particularly during the earlier stages of the disease.

3.5.2 Community care policy

The development of community care services in Australia during the past three decades has been the primary policy and service context for the development of HMM services. Community care services have emerged as part of the aged care system, which provides both residential and community care services for frail older people and their carers. Prior to the 1980s, the primary focus of public funding of aged care was in the residential care sector, both in nursing homes (higher-dependency residents) and in hostels (lower-dependency residents). However, from the mid-1970s concerns were expressed in government inquiries and reviews about the dominance of

institutional care and the inadequate supply of home- and community-based services. Services to provide care for frail older people at home were extremely limited in Australia prior to the 1980s. There were a small number of Commonwealth subsidy programs for home nursing, home help, home-based paramedical services and delivered meals. However, these initiatives were fragmented, poorly coordinated and small in scale (Gibson, 1998, pp. 28–33; Healy, 1990).

A number of major reviews of aged care services in the early 1980s recommended both a restructuring of residential care services and the coordinated development of home and community care services. The most important development in community care policy was the introduction of the Home and Community Care program (HACC) in 1984/85. Under this program, the Australian Government shares the cost of provision of home and community services with the states and territories, The HACC program brought together the pre-existing home care programs, expanded the level and proportion of aged care funding going to home-based services, and expanded the range of funded home and community care services. HMM services, which had previously been largely unavailable in most states and territories, were included in the repertoire of HACC services (Gibson, 1998, pp. 37–8).

During its early years of operation, the HACC program grew rapidly in expenditure, number of service provider organisations and number of clients. During these years the program experienced a number of difficulties, many of which continue to be issues of concern. Major differences emerged among the states in the level and mix of provision of HACC services, and in planning and service delivery arrangements. Concerns emerged about the lack of integration among services, the tendency for services to be extensively rather than intensively spread, and lack of clear rationing and priority guidelines. The relative priority given to different service types was also a matter of debate, with HMM services perceived by some analysts to be under-provided and under-valued (Healy, 1990, pp. 135–44).

Further important developments in community care took place from the late 1980s with the introduction of programs to provide home care services on a more intensive basis for more highly dependent clients. Community Aged Care Packages (CACP) were initiated in 1992 to provide the equivalent of low-level residential aged care in the home. The number of CACP clients rose rapidly, to around 31,000 in 2004/05 (AIHW, 2006, p. 3). Extended Aged Care at Home (EACH) packages providing high-level care for people living at home were introduced in 1998, and supported more than 1,700 older Australians in 2004/05 (AIHW, 2006, p. 3). Other community care programs funded through the Australian Government include the National Respite for Carers program, the Assistance with Care and Housing for the Aged (ACHA) program, and a range of other programs targeted at specific issues such as dementia, incontinence and carer support (Australia, DOHA, 2004, p. 45).

Intensive community care programs such as CACP and EACH have been a main focus of innovation and growth in the community care system during the past decade. However, the core HACC program has continued to expand, with Australian Government expenditure reaching $792 million in 2004/05 and anticipated to increase to over $1 billion by 2007/08 (Australia, DOHA, 2004, p. 14). As of September 2005 there were approximately 3,100 HACC-funded organisations providing services to approximately 750,000 people per year. In recent years there has been a major emphasis on streamlining and coordinating services provided through all community care programs including HACC, CACP and EACH, including standardisation of need and eligibility assessment and criteria, user charges, quality assurance, information management and planning. A framework for future growth of community care services has been developed, comprising a three-tiered model of service provision: early

intervention and information; basic care; and packaged care. This new strategy signals intent at the national level to develop and expand a more integrated, coordinated and standardised community care system drawing together the main community care initiatives of the past decade (Australia, DOHA, 2004). However, there is widespread evidence that poor coordination, fragmentation, variable quality and difficulties accessing services are continuing challenges (Australia, Parliament, 2005, pp. 124–33).

In summary, the community care system, mainly through the HACC program, has provided the most important policy and service context for the development of HMM services in Australian during the past two decades, and this is likely to continue into the future. This means that access to and provision of HMM services will continue to be shaped both by generic HACC and community care system policies and processes and by the priority and place that HMM services are given within this system. These issues are explored further in Chapter 4.

3.5.3 Housing policy

The policy fields of health and community care are well established and core components of ageing policy in Australia. In comparison with these areas, housing policy for older people has received relatively little systematic attention. At both the national and the state and territory levels, comprehensive planning and policy development around older person's housing is conspicuously absent (Jone et al., 2004; Jones et al., 2007, pp. 1–3, 86–91). The most recent systematic public sector reviews of housing issues for older Australians were undertaken in the early 1990s (Australia, AURDR, 1994; Howe, 1992). Neither report led to the adoption of a systematic national approach to the housing of older Australians. 'Policy for housing in an ageing Australia may be emerging as a subject of interest to the whole of government, but it has yet to be addressed in an integrated manner across different areas of government' (Howe 2003, p. 3). The lack of a cohesive policy framework around older person's housing is beginning to emerging as a matter of public concern (Australia, Parliament, 2005, p. 49).

Despite the lack of a comprehensive approach, public policies have a major impact on housing provision for older people in a number of ways. At the national level, taxation and income security measures have sustained high levels of home ownership among the older population. The Australian Government also provides rent assistance for private renters, including older people. Through the Commonwealth-State Housing Agreement (CSHA), the states and territories provide social housing for low income households, including many people in later life, as well as other housing assistance products. Most state and territory housing authorities are actively addressing the issues of stock and tenancy management associated with older tenants in social housing. The states and territories are also responsible for a wide range of matters pertaining to older people's housing including regulation of retirement villages, urban planning relating to the housing of older people, provision of information services for older people, promotion of accessible and adaptable housing design, home safety initiatives, and support of older homeless people and older people living in caravan parks and boarding houses. Some local governments have also become involved with older people's housing as partners with state governments in housing provision, and through local regulatory and planning activities.

A number of these areas have particular significance for HMM services. The role of the states and territories as social landlords has led to them developing extensive programs of HMM for social housing tenants. Some housing authorities have also developed loan products for home modification for older people, as an extension of

other housing assistance and home loan products. These activities and products are described in Chapter 4.

Housing authorities and other states and local government agencies have also been involved in initiatives related to the design of housing for the older population. There is widespread recognition that one factor impeding older people continuing to live in their own home is inappropriate design (Australia, Parliament, 2005, p. 49). There is extensive interest in the concept of adaptable, universal, inclusive and accessible housing, the philosophy of 'design-for-all' (Phillips et al., 2005) and 'lifetime homes' (Heywood et al., 2002, pp. 113–14). A range of initiatives have been undertaken or proposed, including the building of public housing according to accessible or adaptable building standards, supporting demonstration projects that encourage innovation in design and diversity of housing choice for older people (ALGA 2006), influencing the building industry via planning processes and/or taxation incentives, and introducing new requirements into the Building Code of Australia (Australia, Parliament, 2005, pp. 51–5). It has also been suggested that, as the population ages, market forces will result in changing practices (Phillips et al., 2005). The provision of HMM services and the appropriate design of housing for older people can be viewed as complementary strategies to achieve 'age friendly housing' (Australia, Parliament, 2005, p. 51).

What is lacking in current policy settings relating to older people's housing is a wider framework outlining the overall goals of public policy. While there are many individual programs and initiatives, it is not clear what the Australian, state or territory governments consider to be the core purposes of public involvement in the field of older people's housing. An indication of what such a policy framework might look like can be found in the *National Strategy for an Ageing Australia* (Andrews, 2001, pp. 26–7). Under the heading, 'How will housing need to change?', this document draws attention to the wide range and diversity of housing adjustments that people in later life must consider, and the changing patterns of adjustments for the current and emerging generations of older people. It suggests that the role of government may be to facilitate these adjustments through a wide diversity of interventions and instruments. As already discussed in Chapter 2, a framework of this kind would provide a clear housing policy context for HMM services. From this perspective, HMM services are one important means of enabling people in later life to adapt their housing to their needs. The role of governments is to provide a diversity of supports to enable them to do so, bearing in mind the cognate requirements of the health and community care systems.

3.6 Ageing policy and HMM

HMM is a small but significant component of the complex array of policies and services that the Australian community has been developing, and will continue to develop, to meet the challenges posed by the ageing of the population. The articulation of clear policies for HMM has been delayed by its location at the intersection of three policy and service systems: health, community care and housing. To this point, HMM services have developed as a relatively minor component of each of these service systems. There is a need to address the neglected role of HMM both generally in ageing policy and specifically in relation to the fields of health, community care, and housing policy for older people.

A first step is to articulate the relations between HMM services and the broad policy themes of fiscal sustainability, positive ageing, and ageing in place. With respect to fiscal sustainability, it can be argued that HMM services can play a significant role in reducing demand for expensive residential aged care services and in reducing rates

of hospitalisation of older people. HMM services can also play an important role as a preventative health measure, such as by reducing the incidence of falls amongst older people. HMM may also be viewed as a means of reducing expenditure on social housing for older people as it constitutes a less expensive form of housing assistance for some older people than direct social housing provision. In many cases, the fiscal impact of HMM may be maximised when HMM services are provided in conjunction with other health, community care and housing services.

With respect to positive ageing, HMM services can be viewed as one means of facilitating healthy and independent living in older age, and enabling older people to continue to participate in community life. Appropriate housing is fundamental to an individual's social participation, and HMM services can play an important role in enabling people in later life to live independently and safely, to maintain involvement with family and friends, to participate in home-based recreational activities, and to work from home. HMM services also can also assist in ensuring that the homes of older people maintain a positive appearance and are in good repair.

With respect to ageing in place, HMM together with other community care services enable many older people to live in their home for as long as possible. HMM services have the potential to enable many older people to avoid involuntary and unwanted moves, such as living with family or residential care. Viewed positively, HMM services may expand the housing and location choices available to older people faced with complex and important decisions about housing adjustments, particularly the key question of whether to move or to stay put.

While it has been suggested that the location of HMM at the intersection of the health, community care and housing systems may have impeded its development, it must also be stressed that this is a strategic location with great potential for expansion. The key to the future of HMM is to maximise its contribution to the achievement of key outcomes in each of the health, community care and housing systems. Developing a more integrated policy and service system is a major challenge facing many hurdles, and one aim of this study is to provide a conceptual framework to guide the development of policy and programs in this complex and tangled environment. Having defined HMM services (Chapter 2) and articulated the links between HMM and wider policy objectives (this chapter), we are now positioned to analyse the existing service system (Chapter 4) and to identify the key research and policy issues to be addressed (Chapter 5).

4 THE AUSTRALIAN SERVICE SYSTEM

4.1 Introduction

HMM services in Australia have developed in an incremental fashion across several policy and service fields, and have lacked a clearly articulated or integrated policy framework. This is reflected in the absence of any clear, descriptive overview of HMM services in Australia that presents a comprehensive overview of the various strands of HMM policy and service provision. This chapter seeks to fill this gap. It is divided into three main sections. The first (4.2) describes the key programs, service types and approaches to the funding and provision of HMM in Australia. This is followed by a detailed description of the HMM service system in each state and territory (4.3). These state and territory overviews include descriptions of the types of HMM services provided, funding arrangements, program design, and delivery systems. Where data is available, information is provided on the role of state, community or market agencies, the distribution of specialist or generalist services, the geographic distribution of services, types of services, and the extent of coordination or integration among programs and services. These descriptions are followed by an analysis and comparison of these service systems, and identification of the key characteristics of the Australian HMM service system (4.4).

This analysis is based primarily on a desktop review of available information obtained from documents and websites, supplemented by information collected from phone and face-to-face interviews with key informants in the various jurisdictions. A listing of the main sources and interviewees is provided in the appendix. It is intended that this initial description of the HMM service system provide the foundation for a more detailed analysis of the key issues facing HMM services in Australia, which will be provided as part of the Final Report of this project.

4.2 The service systems

HMM services in Australia are provided through four service systems. In addition to the health, community care and housing systems, HMM services are also provided through the veterans' services system. In the following description, the main programs that deliver HMM services in each of these systems are identified, and brief descriptions are provided of program goals, service delivery arrangements, and the levels and types of HMM services provided.

4.2.1 Health

In the context of the health services, HMM services are concerned with prevention of accidents and injury, reducing hospital stays, and managing chronic illness. Many health services appear to rely primarily on HMM services provided through the community care system, although, as noted in Chapter 3, this has been a problematic interface. The main focus of HMM services in the health system is on home modification, and assistance may be provided under the programs identified below. Little information is available on the extent to which HMM services are funded from the generic health budgets of hospitals or community health centres.

Post-discharge services

Hospital discharge programs aim to assist patients to return home following hospitalisation as a result of accident or surgery. It is unclear how home modifications are funded or delivered when they are considered necessary on hospital discharge. Informant interviews to date indicate that hospital occupational therapists may provide assessment advice and referral for patients, and modifications may be self-funded by

patients who have personal means or access to loans or insurance payouts. Some patients may be eligible for HACC or equipment and aids program funded modifications, or for specific government-funded initiatives such as the recently announced funding in Queensland to assist discharge from hospital of people with spinal cord injuries. Access by patients to home modifications assistance on discharge appears to depend heavily on coordination and advice from social workers and occupational therapists. One informant indicated that home modifications assistance from HACC could only be applied for once patients were living in their own homes rather than prior to hospital discharge.

Falls prevention programs

Falls prevention has attracted considerable interest in the health system as a way of maintaining the health of older people and avoiding hospitalisation. National approaches to falls prevention have been developed in recent years involving information and assessment programs aimed at identifying and addressing risk factors related to falls. Falls prevention programs do not specifically fund HMM services and rely heavily on existing services systems such as HACC for the actual provision of HMM services.

Equipment and aids programs

All states and territories have equipment and aids schemes, which developed following the dismantling of a previous national program. The names and scope of the programs and the eligibility guidelines vary between jurisdictions. These equipment and aids programs are administered by either disability or health agencies and are relatively small programs with annual budgets ranging from $0.47 million in Tasmania to $22.5 million in Victoria. In some jurisdictions, home modifications (generally non-structural modifications) are funded under these programs, while in other they are ineligible. Older people are eligible recipients under some equipment and aids programs, but are excluded from others.

Independent Living Centres

Independent Living Centres (ILCs) form a national network of services which have the primary aim of providing information and advice to people with disabilities, including frail older people, about products and services to assist them to live independently in their own homes. ILCs receive funding from a range of disability, health and housing sources and may provide additional services, including building and occupational therapist assessments, depending on local priorities and funding availability. Some ILCs are active in providing access to home modifications services and advice, while others have a stronger focus on assistive aids and equipment.

In summary, while a number of important health programs and functions such as hospital discharge and falls prevention are reliant on HMM services, particularly home modifications, there are no programs specifically focused on the funding or delivery of HMM services. Some programs with a wider disability focus play minor roles in the provision of HMM services. The health system is highly dependent on HMM services provided in community care and, to a lesser extent, the housing system.

4.2.2 Community care

The Home and Community Care (HACC) program is the primary source of funding for HMM services in Australia. HACC is a joint Australian Government, state and territory program that operates under the *Home and Community Care Act 1985*. The Australian Government through the Department of Health and Ageing (DOHA) contributes around 60 per cent of funding and is involved in setting broad strategic directions. The states and territories contribute around 40 per cent of funding and

administer the program, generally through health or community care agencies and local government (Australia, DOHA, 2006).

The HACC program provides assistance to frail aged people, younger people with disabilities and their carers, to promote and enhance independent living. As discussed in Chapter 3, HACC is the largest of a number of community care programs funded by the Australian Government. Other programs include Community Aged Care Packages (CACP), which provide community care services as an alternative to low-level residential care, and Extended Aged Care at Home (EACH) packages, which provide community care as an alternative to high-care residential services. HMM services are available through the CACP and EACH programs, as well as HACC. The Australian Government is also responsible for Carelink, a national program providing information to older people about available services, including HMM services, through shop fronts and the internet.

In order to access HACC services, clients must be assessed as being 'at risk of premature or inappropriate long term residential care'. Having met this test, they are considered to be 'HACC eligible'. The assessment process also determines the type and level of HACC services for which consumers are eligible. HACC funds the delivery of a repertoire of community care services of which HMM services are a relatively minor component. Other HACC services include day care, domestic assistance, personal care, transport, food services, community nursing, allied health services, advocacy services and support for carers. Services are heavily subsidised but require a co-contribution from service users based on their income.

Under HACC, home modification refers to structural and non-structural changes to the client's home, to enable the older person to continue to live and move safely about the house. The most common structural work includes changes to bathrooms and kitchens, and widening of doorways. Non-structural work includes fitting of rails, ramps, alarms and other safety and mobility aids. Home maintenance refers to general repair and care of a client's home and garden to help the client live comfortably and safely in their home. It may include handyman work, repairs, lawn mowing, rubbish removal, wood chopping and repairs to roof or guttering (Australia, DOHA, 2006, p. 61). In 2004/05, approximately 21,000 HACC clients received home modification services, with total expenditure on home modifications of $8,182 million. Approximately 97,000 received home maintenance services across Australia (Australia, DOHA, 2006, p. 9). As HACC serves some 750,000 clients per year, it can be seen that HMM services are received by only a small proportion of those using HACC services. Services are provided by specialist HMM organisations and by generalist community care agencies. The service delivery arrangements vary considerably across jurisdictions as detailed in the state and territory analysis provided later in this chapter.

HACC services are delivered through a range of state government agencies, local authorities, not-for-profit community organisations, religion-based welfare agencies and market sector organisations. Funding priorities and service delivery arrangements are determined in each state and territory based on annual plans negotiated with the Australian Government. The distribution of funding across geographic areas and types of assistance provided are made at the state and territory level, based on a planning process agreed jointly in annual plans by the Commonwealth, states and territories. The relative priority given to HMM under HACC varies considerably across geographic areas within jurisdictions, measured in terms of the number of services provided per 1,000 HACC target population (a standard HACC data definition). Interviews with HACC program managers in some states indicate that variations in the priority given to HMM in state and territory funding allocations relate to local planning

processes and the distribution of agencies with interest and capacity to provide these services.

There is a high level of variation among the states and territories in HMM service provision under HACC. The national average for home maintenance services was 470 hours per 1,000 HACC target population in 2004/05, ranging from 256 hours in New South Wales to 965 hours in Western Australia. The variation in home modification services is even greater. The national average expenditure was $4,598 per 1,000 HACC eligible clients in 2004/05. This ranged from $10,592 in the ACT and $10,411 in New South Wales to $871 in South Australia and $401 in Western Australia. The Northern Territory and Victoria reported no HACC expenditure on home modifications services at all (Australia, DOHA, 2006, p. 40). Average home maintenance hours and home modifications expenditure per 1,000 HACC eligible population increases with geographic remoteness, with major cities lowest and very remote areas highest in most jurisdictions. Lower population densities and additional costs and travel time involved in providing services in remoter areas may account for some of these differences.

In summary, the HACC program provides a significant level of HMM services for older people at risk of premature entry to residential aged care. However, HMM services are a relatively small component of all HACC services, and there are considerable variations between jurisdictions in the level and distribution of HMM services available.

4.2.3 Housing

State and territory housing authorities (SHAs) and other housing organisations are involved in the provision of HMM services in three distinct ways, although the nature and level of involvement varies considerably among jurisdictions. The three modes of involvement are: modifying and maintaining social housing dwellings; lending to home owners to undertake home modifications; and funding specialist HMM services targeted generally at older people in the community.

The provision of adaptable, purpose-built and modified housing for older people and people with a disability is now widespread among public and community housing providers in Australia. The social housing system is a major provider of rental housing for low-income older people, and considerable attention is paid to ensuring that housing is appropriate for tenants with special needs. All SHAs undertake modifications to meet the needs of their public housing tenants and most undertake or fund modifications to properties under their community housing programs. Social housing landlords are responsible for normal landlord maintenance on all properties and most maintain and clean the gardens and common areas of multi-unit developments. They are less likely to provide maintenance services that are the tenant's responsibility, such as gardening for older tenants where they live in detached housing.

The involvement of SHAs in home modifications has expanded considerably over the past two decades as the characteristics of public housing tenants has changed and SHAs have increased their focus on improving the quality of life for tenants. SHAs are increasingly including adaptable and accessible housing in their portfolios, through both planned acquisition and upgrade processes. They also consider requests from individual older tenants and their carers for home modifications. The capacity of SHAs to undertake this work has developed considerably through the employment or contracting of specialist health and building professionals, including occupational therapists, and adoption of adaptable and accessible building and design standards. Data is not available from all jurisdictions but where home modification activity is

reported, the levels are significant. For example, Queensland Department of Housing reported modifying over 2,000 dwellings in 2005/06 at a total cost of nearly $8 million.

SHAs in Queensland, Victoria, South Australia and Western Australia have a niche home-lending function, and in this context all provide home-lending products specifically designed to finance home modifications for eligible borrowers. Loans may incorporate features such as subsidised or capped interest rates, flexible repayment arrangements, and low (or no) deposits. A higher level of risk may be accepted than is usual for commercial lenders. In some cases, these loans are supplemented with advice, grants or subsidies.

The third and least common way in which housing agencies are involved in HMM is by providing or funding HMM services for people living in their own or privately rented accommodation. Queensland has most comprehensive programs of this type, known as the Home Assist Secure Program and the Home Access and Smart Housing Initiatives, which are described below. Other initiatives include volunteer maintenance programs in New South Wales, and a home renovation advice service in Victoria. Other similar, small-scale initiatives are detailed below.

In summary, the involvement of State Housing Authorities in HMM is strongly linked to their traditional roles in public housing and home lending. The funding of the Home Assist Secure program in Queensland indicates the potential for a broadening of the role of SHAs in the provision of HMM services.

4.2.4 Veterans' Affairs

The Department of Veterans' Affairs funds and administers a number of HMM services for eligible veterans. These include a home maintenance helpline, a program providing assistance with home and garden maintenance, a falls prevention service, loans for home modifications, and a rehabilitation appliances program. Each of these is described below.

Veterans' Home Maintenance Line (VHML)

The home maintenance line is a toll-free, national telephone service providing advice to veterans on home maintenance and repairs, and referral to local tradespeople. To be recommended by the service, tradespeople are required to meet a number of standards including trade qualifications, professional indemnity and public liability insurance. The service will also arrange home inspections to assess home maintenance issues. While the telephone advice service is free, recipients are responsible for the costs of their maintenance work. The operation of the maintenance line is contracted out to a private sector operator by DVA. During the 2005/06 financial year, 5,159 people were reported to have received assistance from the Veterans' Home Maintenance Line (Australia, DVA, 2006).

Veterans Home Care Program (VHCP)

Home care is a national program administered by the Department of Veterans' Affairs to provide low-level personal care, domestic assistance, and home and garden maintenance to eligible veterans and war widows, to enable them to live independently in the community. The focus is to 'assist in keeping the home safe and habitable by minimising environmental hazards in and around the home' (Australia, DVA, 2004a).

The organisation of the program has many similarities with the HACC program, in that assessment and delivery of services is contracted to local governments, community organisations, religious welfare agencies, and for-profit organisations. In 2005/06, the Home Care Program budget was $91.4 million. Over 70,000 veterans and war widows

were approved for services, including approximately 14,000 (20 per cent) for home and garden maintenance services. On average, clients receive about 4 hours of home and garden maintenance services per annum, compared with 30 hours for other service types. In total, home garden and maintenance service account for only approximately 3 per cent of service hours under the program (Australia, DVA, 2006).

The home and garden maintenance services provided under home care are restricted to minor maintenance or repair tasks that can be undertaken by a handyman, such as: replacing light bulbs and tap washers; installing batteries in smoke or security alarms; gutter cleaning; and window cleaning. Major tasks requiring a tradesperson are excluded. Services are subsidised but recipients make a co-contribution based on their income.

Home Front

Home Front is a program administered by the Department of Veterans' Affairs that aims to prevent falls and accidents in the home in an effort to maintain the health and independence of veterans and war widows, and reduce demand on medical and hospital services. A free Home Front assessment is available each calendar year and the Department makes a financial contribution to the cost of recommended items and modifications. The Home Front assessor also provides information about local community and public services available to assist veterans and war widows remain living in their own home for as long as possible.

Home front provides free home assessments to identify hazards in and around the home that may contribute to falls or accidents. Where hazards are identified, Home Front can provide advice, and arrange or financially assist with the installation of minor, non-structural modifications and safety appliances. Advice is also provided on other available assistance, including the Home Support Loan. In the 2005/06 financial year, 9,966 veterans and war widows/widowers used Home Front (Australia, DVA, 2004b).

Home Support Loan

This is a loan of up to $10,000 to assist with the costs of home maintenance, repairs and modifications that encourage independent living. Interest is subsidised to provide a capped rate up to 1.5 per cent below the market benchmark rate. Some veterans may also be eligible for a Defence Service Homes Loan, which provides up to $25,000 at subsidised interest rates for similar purposes.

Rehabilitation Appliance Program

Home modifications may be funded by DVA under the Rehabilitation Appliance Program where a clinical need is assessed by an occupational therapist. To be eligible for this assistance, veterans and war widows must have a Repatriation Health Card and not be a resident of an aged care facility. Both structural and non-structural modifications may be funded if they address issues of safety, access and independence in the home.

In summary, the DVA provides a wide-ranging package of HMM assistance to veterans and war widows that is a component of broader housing and health strategies for veterans. DVA provides approximately 18,000 clients annually with home maintenance assistance through the Home Care and Home Maintenance Line services. In addition, approximately 10,000 clients receive assessments and assistance to prevent falls under the Home Front program. The articulated policy objectives of DVA services include maintaining health and independence, enabling veterans to live in their own homes and local communities for as long as possible, and reducing demand for medical and health services and residential aged care facilities.

Service delivery is generally contracted out to community and market sector providers, many of whom also deliver HMM services funded under other programs. Some coordination occurs between DVA and HACC services in some states and territories, as discussed below.

4.3 HMM in the states and territories

The programs described in section 4.2 provide the main sources of funding and services provision of HMM in Australia. However, the characteristics of the service system vary considerably from state to state. An analysis of HMM in each state and territory is presented in this section to provide a more detailed understanding of HMM service provision within each jurisdiction. The main programs and services operating in each jurisdiction are described, together with information (where available) on the extent, types and distribution of services.

4.3.1 Australian Capital Territory

HMM services in the ACT primarily comprise HACC-funded HMM services and modifications undertaken by ACT Housing to meet the needs of their public housing tenants. Handyhelp Inc. is the primary HACC-funded community organisation specialising in HMM, whose services include project management of structural modifications. HACC also funds information, advice and referral services through the Independent Living Centre (ILC).

Although it has only one HMM service provider, the ACT is well serviced on a per capita basis compared with most other states and territories. In 2004/05, 328 clients were assisted with home modifications, and expenditure was $10,593 per 1,000 HACC clients. This is twice the national average and higher than in any other jurisdiction. Home maintenance services were provided to 1,380 clients in 2004/05, and the number of hours was 470 hours per 1,000 HACC target population. This equalled the national average and was only exceeded by Victoria, Western Australia and the Northern Territory (Australia, DOHA, 2006).

The ILC in the ACT provides advice about building standards and product options and makes referrals to builders who undertake home modifications. The service advised that they have a small number of builders on their books who undertake this work, including one builder who is contracted to ACT Housing and is now specialising in home modifications.

In summary, this is a compact service system with relatively high rates of HACC service provision. There is only one significant funding source (HACC) and one HMM provider, other than modifications undertaken within the public housing system.

Table 2: HMM services in the Australian Capital Territory

Programs	Characteristics
HACC Home modifications Home maintenance	→ One specialist community organisation (Handyhelp Inc.) provides both modifications and maintenance services
	→ Per capita expenditure on home modifications is the highest in the country
	→ Level of provision of home maintenance is at the national average
	→ HACC funds directed to Independent Living Centre to provide home modifications information and advice
Public Housing Home modifications	→ ACT Housing undertakes modifications for public housing tenants
DVA	→ DVA national programs

4.3.2 New South Wales

HACC is the primary program under which HMM services are provided in NSW. Funding totalling approximately $28 million is expended annually on HMM services through approximately 90 funded services, mainly community-based organisations. This is almost 6 per cent of the New South Wales HACC budget (KPMG, 2006; New South Wales, DADHC, 2006). While this is only a small part of the HACC service delivery system, it is a larger component than in most other states and territories. New South Wales expenditure on home modifications in 2004/05 was $10,400 per 1,000 HACC target population, twice the national average and second only to the ACT. Home maintenance provision was just over half the national average, at 256 hours per 1,000 HACC target population (Australia, DOHA, 2006).

The HACC program has a strong emphasis on home modifications in New South Wales, and a highly developed HMM service system relative to other states and territories. New South Wales is the only state to financially support HMM service providers. It has a service system that comprises local, regional and state-wide service delivery structures. Local service providers deliver modifications costing less that $5,000, regional service providers deliver modifications costing $5,000 to $20,000, and state-wide services deliver modifications costing over $20,000. This system is currently undergoing formal review (KPMG, 2006). The service system is supported by a peak organisation representing HMM services, and a research and resource centre hosting a website run by the University of Sydney. The University of Sydney website provides information and resources for service providers and professionals about home modifications, universal design and adaptable housing. In New South Wales the HACC-funded community organisations that specialise in HMM also offer their services on a fee-for-service basis and charge full cost recovery. They will provide HMM services on this basis for individuals who are not HACC eligible and also contract with other agencies such as DVA, disability agencies and so on.

The NSW Department of Housing provides housing for people with mobility-related disability through its ongoing program of home modifications. Typically, work includes modifications to handrails and ramps for physical access, and may also include minor alterations to kitchens and doorways. In 2005/06, total expenditure was $7.26 million and resulted in 1,613 dwellings being modified. Expenditure has increased from $4.93 million in 2001/02 (New South Wales, DOH, 2006). The Department also sponsors a neighbourhood aid program for public housing tenants that includes some home maintenance tasks.

In summary, HMM services are provided in New South Wales for HACC- and DVA-eligible clients and for social housing tenants. There is strong support for home modifications under HACC through formalised local, regional and state-wide non-government service delivery structures. New South Wales is the only state to fund state-wide infrastructure to support HMM service providers. Repairs and maintenance services are also available through HACC- and DVA-funded services.

Table 3: HMM services in New South Wales

Programs	*Characteristics*
HACC Home modifications Home maintenance	→ State-wide network of 90 HMM services
	→ Funds NSW *Home Modifications and Maintenance Services State Council* as state-wide peak to represent services
	→ Funds University of Sydney to host website to provide information and resources for professionals involved in home modifications, universal design and adaptable housing
	→ Has a tri-level service system for modifications with escalating responsibilities for service system roles and financial delegations (under review)
	→ High levels of modifications relative to other States but lower levels of home maintenance
Public Housing Home modifications	→ Structural and non-structural modifications for public housing tenants
	→ NSW Department of Housing and Department of Ageing, Disability and Home Care sponsor Neighbourhood Aid program which involves volunteers providing assistance, including home and garden maintenance for older tenants in social housing
DVA	→ DVA national programs

4.3.3 Northern Territory

In the Northern Territory, HMM services include: HACC-funded HMM services provided through community organisations, modifications undertaken by Territory Housing to meet the needs of public housing tenants; and HMM services funded under the Territory Independence and Mobility Equipment Scheme (TIMES).

National HACC data indicates that NT provides the second-highest level of provision of home maintenance services in the country. In 2004/05, home maintenance services under HACC were provided to 435 clients at a rate of 765 hours per 1,000 HACC target population. There was a strong focus on very remote areas, where service provision was 2,685 hours per 1,000 HACC target population – more that twice the national average for very remote areas. This indicates a strong HACC focus on remote and Indigenous communities in the NT. The HACC national data does not report any home modifications services for the NT, although the high level of maintenance expenditure may indicate that home modifications are funded from the home maintenance budget category.

TIMES provides assistance with home modifications, repairs and maintenance. In 2000/01, 20 per cent of the TIMES budget was allocated to HMM services. Social housing tenants have access to home modifications provided by Territory Housing (Northern Territory, DHCS, 2001). There is some indication of coordination between community care, health and housing HMM programs, as evidenced by references in

HACC guidelines to coordination of referrals with TIMES and public housing modifications.

In summary, there is a relatively high rate of home maintenance provision through local HACC services. Service delivery seems to be highly decentralised, with a strong focus on remote and Indigenous communities. Limited data is available on home modifications provision under HACC, TIMES or public housing.

Table 4: HMM services in the Northern Territory

Programs	*Characteristics*
HACC	→ Relatively high level of expenditure on maintenance but none specifically allocated to modifications
Public Housing Home modifications	→ Structural and non-structural modifications for public housing tenants
TIMES	→ Funds home modifications, repairs and maintenance
DVA	→ DVA national programs

4.3.4 Queensland

Queensland has one of the most comprehensive HMM service systems, with a range of services and a wide geographic coverage. Assistance with structural modifications is available to HACC-eligible households through a state-wide network of services and is also available to social housing tenants. These services are complemented by subsidised loan and grant arrangements to assist home owners with the costs of home modifications. Non-structural modifications, repairs and maintenance are available to all older people through DVA, HACC or Home Assist Secure (HAS) programs, with subsidies available to low-income people for these services.

Queensland has seen a significant increase in the provision of HMM in recent years and has developed strong links between the HACC and housing HMM programs. Queensland is unique in having a state government funded program, Home Assist Secure, that provides a range of home maintenance, home security and minor modifications services to older people who are ineligible or unable to access HACC- or DVA-funded HMM services. HAS provides information, assessment, referral to private contractors, project management and financial subsidies to assist with non-structural modifications, repairs and maintenance to improve independence, safety and security. The focus of these activities includes falls prevention, home security and physical mobility and safety around the home. These services are delivered through a state-wide network of 41 services that assisted over 50,000 households in 2004/05. The 2005/06 annual budget for the HAS program was nearly $15 million. An evaluation of HAS in 2001 found high levels of demand for HAS services and a high level of client satisfaction (Queensland, DOH, 2002).

HACC-funded home maintenance services and home modifications valued at less than $1,000 are delivered by both generic HACC services and specialist HMM services, which may also receive HAS funding. Most of these specialist HMM organisations provide both HAS and HACC home maintenance and low-value modifications. HACC-funded home modifications valued at greater than $1,000 are delivered by a state-wide network of 13 home modifications services administered by the Queensland Department of Housing and are also coordinated with the delivery of the HAS program. A partnership between the Queensland Department of Health and the Queensland Department of Housing has seen coordinated planning and investment in HMM services increase considerably in recent years, and the provision

of structural modifications services expanded to state-wide coverage. The 2005/06 HACC budget for home modifications in Queensland was nearly $4 million.

Queensland has an extensive home modifications program for public housing tenants and employs occupational therapists in local offices to provide assessments and advice on modifications. In 2005/06, $7.9 million was expended on home modifications to 2,034 public housing dwellings. Between 2000/01 and 2004/05, a total of $34.4 million was spent on all home modifications to 11,546 public housing dwellings.

As part of its 'Home Access' strategy, Queensland Department of Housing introduced a Home Adapt loan in 2005 to assist low- and moderate-income home owners to modify their homes. This can be supplemented with a grant of up to $10,000. The take-up of the loan has been very small, with only five loans approved in 2004/05. The Home Access strategy includes tools for home owners and renters to assess and rate the accessibility of homes, and strategies to encourage the development of a sub-market in modified housing.

In summary, Queensland has relatively high levels of HMM provision funded under a suite of HMM programs and services delivered through an extensive network of (mainly) community organisations. It is common for HMM services to be funded by both HACC and HAS programs as these are coordinated through a formal partnership between the state government health and housing departments.

Table 5: HMM services in Queensland

Programs	*Characteristics*
HACC Home modifications Home maintenance	→ Home modifications funding administered by Department of Housing and coordinated with HAS at program and service delivery levels → Home maintenance administered by Queensland Health
Public Housing Home modifications	→ Modifications undertaken for public housing tenants
Home Assist Secure	→ A state-wide network of 41 services providing home maintenance, modifications and security services
Home Lending Home Access Loan	→ Home Adapt Loan introduced in 2005 → Home modifications grants
DVA	→ DVA national programs
Other	→ Home access

4.3.5 South Australia

The main components of the South Australian HMM service system are: HACC services delivered through a mix of government- and community-based agencies; home modifications provided for social housing tenants, and state government provided home lending for modifications.

Expenditure through the HACC program in South Australia is close to the national average for home maintenance services and significantly below average for home modifications. These services are delivered through community organisations and through a state government service delivery network, Metropolitan Domiciliary Care.

The Independent Living Equipment Program (ILEP) funds home modifications but this assistance is not available for older people. The South Australian Government home lender, Homestart, provides a carers loan of up to $35,000, with interest rate subsidies that can be used for home modifications. Social housing landlords provide home modifications for public and community housing tenants. Information and advice about home modifications is available through the Independent Living Centre.

In summary, HMM services in South Australia are available primarily to HACC-eligible older people and public housing tenants. Home owners who are not HACC-eligible may have access to a flexible loan to finance their modifications.

Table 6: HMM services in South Australia

Programs	Characteristics
HACC Home modifications Home maintenance	→ HMM delivered through a range of government and non-government organisations including the Metropolitan Domiciliary Care, which is a government entity → Relatively low level of provision of home modifications → Home maintenance provision at similar rate to national average
Public Housing Home modifications	→ Housing SA undertakes modifications to meet the needs of its tenants
Home Lending Home Start Carers Loan	→ Loan up to $35,000 with low-start repayments to finance home modifications → Administered by government home lending agency, Home Start Finance
DVA	→ DVA national programs

4.3.6 Tasmania

Tasmania's HMM service system comprises: HAAC home modifications services funded on a small scale; HACC-funded home maintenance services provided by both generalist and specialist HACC services; a state-wide information service through the ILC and a regional home maintenance advisory services funded by HACC; some local volunteer home maintenance and modifications services; and modifications undertaken by Housing Tasmania to public housing properties.

HACC funding for home maintenance is nearly $1.5 million per annum, which is about 4 per cent of the Tasmanian HACC budget (Tasmania, DHHS, 2005). Some minor modifications such as fitting handrails are provided using home maintenance funding. HACC home maintenance services are provided primarily by community organisations. These are complemented by home modifications services funded from a mix of HACC and state funding, and delivered through state government Community and Health Services Centres.

In Tasmania, HACC expenditure on home modifications is well below the national average. In 2005/06 it was reported as $73,000 in total, supplemented with $150,000 from other state government sources. HACC home modifications are funded on an occasional basis, the exception being a small amount of recurrent funding allocated to one service to employ a builder to undertake modifications work. Service providers are encouraged to use Department of Health and Human Services occupational therapists to assess client modification needs. According to the program guidelines, expenditure above $10,000 requires departmental approval. Program guidelines for HACC home modifications were introduced in 2003 (Tasmania, DHHS, 2005).

Social housing tenants are eligible for home modifications provided by the SHA. Advice and information is provided by the Independent Living Centre Tasmania. Service Clubs and church groups are involved in some localities in supporting HMM services, either in conjunction with local HACC services or independently.

In summary, HACC is the only significant funder of HMM in Tasmania, apart from the home modifications provided by the SHA. The level of provision of HACC home maintenance services is consistent with the national average, but there is limited provision of structural modifications, which are primarily funded on a non-recurrent basis. There appears to be a decentralised system of delivery of HMM services through community organisations, supplemented by state-wide and regional information and advice services.

Table 7: HMM services in Tasmania

Programs	Characteristics
HACC Home modifications Home maintenance	→ Limited recurrent funding for home modifications based on demand and funds availability
	→ Some minor modifications such as handrails may be funded from home maintenance program
	→ Average level of maintenance provision under HACC
	→ Local Community and Health Service Centres provide home maintenance services with a combination of HACC and state health funding
Public Housing Home modifications	→ Modifications made to public housing to meet the needs of its tenants
DVA	→ DVA national programs
Other	→ ILC provides state-wide information, education, advisory and consultative services

4.3.7 Victoria

Victoria's HMM service system comprises: property maintenance services funded under HACC; home modifications undertaken for public housing tenants; funding for minor modifications under the program of Aids for the Disabled; home loans provided by the Office of Housing; and advice and assessments provided by the Home Renovations Service.

In Victoria, non-structural modifications, repairs and maintenance services are funded under HACC and delivered primarily by local government. There is limited availability of structural modifications under HACC. Victoria is unusual in its high level of reliance on local government to deliver HACC services, including property maintenance. Victorian Government aged care commitments for 2006/07 include expansion of HACC services, including home modifications. Victoria has the highest pro rata level of maintenance services of any Australian state or territory, but reports no expenditure on home modifications. However, this is because property maintenance is a category of HACC services in Victoria that incorporates both non-structural home modifications and maintenance services.

The Victorian aids and equipment program is administered by Disability Services and delivered through state government health centres and hospitals. Eligibility includes 'frail aged' people and services include home modifications. There is a lifetime limit of

$4,400 per household and no structural work is funded except for widening of doorways.

Structural modifications are available to social housing tenants. The Victorian Office of Housing also provides home renovation loans and funds the Archicentre to deliver a home renovations advice and assessment service. This service is subsidised for low-income older people.

In summary, in Victoria HMM services are primarily funded by HACC and delivered through local government. They are also provided through the aids and equipment program delivered through the health system. Government assistance for structural modifications is limited to undertaking modifications for public housing tenants and providing assistance through loans and advice to home owners.

Table 8: HMM services in Victoria

Programs	*Characteristics*
HACC Property maintenance (includes home modifications and maintenance)	→ HACC property maintenance includes both maintenance and non-structural modifications → Local government is a significant providers of HACC property maintenance services → HACC funds are not allocated for structural modifications
Public Housing Home modifications	→ Office of Housing undertakes modifications to meet the needs of tenants
Home Lending Home Renovation Loans Home Renovation Service	→ Office of Housing administers a flexible loan of up to $25,000 to assist with home modifications → Office of Housing funds Home Renovation Service provided through the Archicentre to provide assessment and advice on home modifications
Program of Aids for Disabled People	→ Provides funding up to $4,400 for non-structural home modifications → Administered through Disability Services in the Department of Human Services and delivered primarily through hospitals
DVA	→ DVA national programs

4.3.8 Western Australia

The Western Australia HMM service system comprises: high levels of home maintenance and limited home modifications under HACC; modifications undertaken for public housing tenants; and a state government home loan available to home owners to fund home modifications.

HACC in Western Australia provides twice the national average of home maintenance services, delivered through local community organisations. However, there is limited funding (10 per cent of the national average) of home modifications, which are delivered through seven regional services (Australia, DOHA, 2006).

HomesWest employs a disability coordinator and contracts an occupational therapist to support an active home modifications program for public and community housing tenants. Keystart, the government home lender, administers an Access Home Loan Scheme, which provides loans of between $5,000 and $50,000 for home modifications. Fifty-one loans totalling $7 million were approved in 2005/06.

Information and advice about home modifications is provided by the Independent Living Centre of Western Australia and Technology Assisted Disability Western Australia (TADWA). The ILC also administers funding from LotteryWest that can be used for home modifications. Maximum Independence is a private company involved in providing self-funded home modification services.

In summary, Western Australia has limited availability of home modifications services, other than for public housing tenants and home owners who are able to self-fund modifications. Relatively high levels of home maintenance services are provided through HACC.

Table 9: HMM services in Western Australia

Programs	*Characteristics*
HACC Home modifications Home maintenance	→ High levels of HACC home maintenance services delivered through local service providers
	→ Limited HACC-funded home modifications delivered through seven services across WA
	→ TADWA and Independent Living Centre funded to provide information and advice
Public Housing Home modifications	→ HomesWest undertakes modifications to meet the needs of its tenants
Home Lending	→ Home Access Loan of up to $50,000 available to fund modifications
DVA	→ DVA national programs
Other	→ LotteryWest funding used by ILC for home modifications

4.4 Characteristics of the Australian HMM system

The description of the HMM service system for older people in Australia in sections 4.2 and 4.3 shows that it involves a complex array of programs and organisations at national, state and territory, and regional and local levels. Services are provided from the health, community care and housing service systems and involve a variety of state, community and market delivery mechanisms. There are no clearly identifiable policy or program frameworks that provide an integrated policy or planning approach, and there are major differences in the services available in each state and territory. It is therefore problematic to describe the provision of HMM as a service 'system', other than in the most general sense of that term. The overall characteristics of HMM provision in Australia based on the analysis undertaken so far are summarised and discussed below, under the headings of goals, funding, service types, service delivery and service distribution.

4.4.1 Goals

There appear to be no publicly available documents that articulate broad policy frameworks for HMM service provision at either the national or state and territory levels. Several specific HMM programs do have formally stated goals. But in many cases, the programs that fund home modification and maintenance do not have a primary focus on these services. HMM services are often a component of broader programs (such as HACC) and service systems (such as housing or health), and hence the development of specific policy and program goals and objectives for HMM tends to be under-developed.

The goals of HMM services can be divided into two categories: client-focused goals and system-oriented goals. Client-focused goals include safety, independence and enhancing quality of life, bearing in mind the meanings of home and preferred lifestyles of people in later life. System-oriented goals include preventing falls and accidents so as to reduce health expenditure, facilitating effective and speedy discharge of patients from hospital, efficient management of older people with chronic health conditions, and minimising rates of entry to high-care residential facilities. At a broader level, HMM services are related to the wider goals of ageing policy of fiscal sustainability, positive ageing, and ageing in place. It can be argued that clarification and formalisation of the goals of HMM services is essential to the development of a more efficient and effective HMM service system. Of course, it must also be recognised that HMM services are not stand-alone, and that their effectiveness will often be greatest when provided in conjunction with other health, community care and housing services.

4.4.2 Funding

The funding of HMM services in Australia is complex, involving a large number of programs and systems. There are common elements in the funding of HMM in each state and territory, but also many arrangements that are unique to particular jurisdictions. The funding of HMM services is shared between the Australian Government and the states and territories. The Australian Government has a major involvement in the funding of HMM services through the HACC program and the services provided through the Department of Veterans' Affairs, as well as other related services such as Carelink Centres. State and territory governments also have a significant role in the funding of HMM services through the cost-sharing arrangements of HACC, and their financial support of an assortment of other HMM programs. It is extremely difficult to precisely assess overall levels of expenditure on HMM services for older people at the state and territory and the national level. There are no official financial statistics on overall expenditure on HMM, and levels of expenditure on HMM services for older people within programs can be difficult to determine. The role of user charges in financing services and the appropriate level of co-contributions vary.   There are no established benchmarks for appropriate levels of expenditure.

A distinctive characteristic of current funding arrangements are the significant differences in levels of funding among the states and territories. There are great differences in the proportion of HACC funds spent on HMM services, and great differences in the range and extent of services funded outside HACC. The relative weight given to home modifications and home maintenance in funding also varies considerably. These differences may to some extent reflect diverse priorities and assessment of levels of need in the various jurisdictions, although there is little evidence of formal analysis of this kind. Other factors such as historical patterns of expenditure and supply-side factors such as the availability of HMM providers may be significant. The main impact of these differences is that the availability and accessibility of HMM services, and the pattern of services, vary widely among the states and territories. Little or no attention has been paid to these variations, but this may change as demands for services from older Australians intensify during the next two decades.

4.4.3 Service types

In Chapter 2 the four main HMM service types were classified as structural modifications, non-structural modifications, repairs and maintenance. The various forms of assistance were listed as provision of information and advice, assessment,

case management, brokerage, project management, grants and loans, and direct service provision. There are examples of all of these forms of assistance in the services provided throughout the Australia-wide HMM service system. However, the mix of services within each state and territory is highly variable, and there are no guidelines with respect to the range of services that should comprise the HMM service system. The common elements in most states and territories are the home modification and maintenance services provided through HACC and community care programs (although with large differences in the level and mix of provision), the home modifications available to social housing tenants, the provision of the DVA national HMM programs, and the information on HMM available through the Australian Government's CareLink Centres. The disparate elements are: the availability of other information, advice and consultancy services; the availability of HMM services to clients other than those in the HACC, DVA and social housing systems; the extent and range of grant and loan products for home modification; and the extent of provision of HMM services through health and disability organisations.

The development of a clear picture of the range of services available is hampered by the variation and overlap in the definitions of the components of the service system and the limitation of available data. Reporting under the HACC program has improved in recent years with the introduction of the HACC Minimum Data Set. However, this is the only HMM data to be published in a relatively consistent form at a national level. Reporting on HMM within this system is hampered by different service definitions. For example, 'minor modifications' appear to be treated as home maintenance in some jurisdictions, leading to under-reporting of home modifications in HACC data in some states. HMM services provided through aids and equipment programs do not use standard categories in reporting. HMM data is not available in some programs where these services are a relatively minor component of a broader program. Data on public housing modifications is not readily available in some states and territories because it is not reported separately in maintenance and upgrade budgets. Very little data is publicly available about home modifications assistance within the health system. These data gaps and inconsistencies make it difficult to compare service provision in different states and territories, and to build a clear picture of the repertoire and extent of services available.

4.4.4 Service delivery

There are great variations in the service delivery arrangements for HMM services in each state and territory. This reflects the diversity of arrangements for delivering HACC and community care services, and the incremental way in which other parts of the HMM service system have developed. Notwithstanding this diversity, the HMM service delivery systems in each state and territory face similar issues. Issues include: the roles and relations of the state, community, market and informal sectors; integration among the health, community care and housing service systems; the mix of generic and specialised service delivery organisations; and information and access pathways for clients.

HMM services are delivered by a complex mix of state, community and market organisations, a mix that varies from state to state. Most state-supported home maintenance services for older people are provided by community organisations funded under HACC and programs such as HAS in Queensland. Some community organisations are also contracted to deliver DVA-funded home maintenance services. The main roles of the state sector are the provision of home modification services to public housing tenants, the management of loan and grant programs, and the provision of HMM services by local governments mainly in Victoria and in rural areas in other states and territories. State governments have a limited role in the direct

delivery of HMM services with notable exceptions such as the South Australian Domiciliary Care Service and the delivery of home modification services in Tasmania through Community and Health Service Centres. The market sector is also contracted to provide some state-funded services such as the DVA Home Maintenance Line and some HACC services.

The relations between state-funded HMM services and non-funded market provision of home modification and maintenance services for older people is a critical and largely unexplored issue. In most states, older people who are not eligible for HACC and other community care services, and who are not DVA clients or social housing tenants, are solely reliant on the private sector for HMM services. The main exception is the non-structural home modification service provided by Home Assist Secure in Queensland. Some community organisations also provide HMM services to non-subsidised older people on a fee-for-service basis. Some private companies such as Maximum Independence in Western Australia have been established to meet the market for self-funded home modification services. Government-managed information services such as Carelink list a number of private companies on their websites as HMM service providers. These developments raise both policy and service delivery issues. At a policy level, to what extent should the state be involved in facilitating access to HMM services (including private sector services) for older people who are not eligible for community care, DVA and public housing HMM services? At the service delivery level, how can access to HMM services (predominantly private sector services) by these older people best be facilitated?

The role of informal care in HMM service delivery also requires consideration. A number of volunteer services were identified that assist older people, particularly with home and garden maintenance. In New South Wales the Department of Housing supports a volunteer program that assists older public housing tenants with home maintenance and minor repairs. Tasmania and ACT have a number of volunteer services involving service clubs and church groups with names such as 'Handy Help' in the ACT and 'Backyard Angels' in Tasmania.

Another complex service delivery issue is the integration of services provided through the health, community care and housing service systems. Many links have been developed between health, community care and housing-based HMM services, and some HMM organisations provide services to across these systems. However, there are considerable barriers to the development of an integrated service system that addresses the diversity of objectives of these three systems. Individual services have eligibility, priority and delivery arrangements that reflect specific program goals rather than HMM system goals more broadly defined. There appears to be considerable fragmentation of services and, in most states, a limited sense of HMM as a service system. The strongest sense of identity of HMM services appears to be in New South Wales, where services are linked through the New South Wales Home Modifications and Maintenance Services State Council, and the research and resource centre located at the University of Sydney.

HMM services are delivered through a mix of generic aged care services and specialised HMM organisations. In some generic organisations, HMM is simply one of a wide range of home and community care services that are provided. Specialist HMM providers are prominent in New South Wales and Queensland, as well as the ACT and Tasmania. In the HACC program it is common for inexpensive and straightforward home modifications, such as installing handrails, to be delivered by generic HACC organisations. Specialist HMM organisations raise the visibility and identity of HMM as a service system. Developing the most appropriate mix of

specialist and generic HMM services is a delivery issue to be considered in all states and territories.

Finally, and most importantly, the existing service system raises important issues of information and access pathways for clients. Older people require assistance with information about the availability of services, as well as issues of eligibility and cost. HMM services, particularly home modifications, may involve a diversity of processes including information and advice, occupational therapy assessment, building assessment, financial assistance, project management, and installation. In some cases these functions may coexist within one service, but often there is a need for case or project management. Carelink provides a generic information service on HMM services for older people, and information and advice services are provided through a diversity of organisations in the different states and territories, including Independent Living Centres, advisory services such as the Home Renovations Service in Victoria, and specialist HMM providers. Many older people are assisted in accessing HMM services by hospitals and HACC services. The overall effectiveness of current information and access arrangements has not been systematically studied.

4.4.5 Distribution of services

It is difficult to develop a clear picture of the overall distribution of services and related equity issues due to the definitional and data issues discussed earlier. The most apparent issues are the large differences between states and territories in levels of HMM provision through the HACC program. There are also regional variations in HMM provision through HACC, with provision of services appearing to favour rural and remote areas over urban centres.

Tenure is an important distributional variable for HMM services. It is not possible, based on the data analysed for this review, to draw conclusions about access to HMM by tenure. HACC data indicates that access to HACC services is broadly in proportion to the housing tenure of older people, except that public housing tenants appear to receive higher levels of service. Approximately 9 per cent of HACC clients in 2004/05 lived in public housing, while public housing tenants comprised only 4.9 per cent of the older population. However, this data is not available specifically for HACC clients receiving HMM services. Public housing tenants have access to home modification assistance not generally available to home owners and private renters. Home modification lending programs are directed at older home owners, but these programs appear to have relatively small take-up and are only available in four states.

Assessment as being eligible for HACC or DVA services is clearly important in terms of access to subsidised HMM services. Those who do not fall within these categories have limited access to HMM services in most states and territories, other than for information and advice, loan services in states, and services provided on a fee-for-service basis. Only Queensland has a program providing home repairs, maintenance, minor modifications and security services to older people who are not eligible for HACC.

4.5 Conclusion

HMM services are a small but important component of the service system for older people. However, at this point HMM services are yet to acquire the characteristics of a mature service system, with clear goals, funding arrangements, service types, delivery mechanisms and outcomes. This reflects a number of factors. In part it is a consequence of the wider systemic problems in the community care system now being addressed as part of the implementation of the Community Care Review (Australia, DOHA, 2004). It is also a consequence of the lack of clear identity of HMM

as a service system, stemming in part from the location of many HMM services within the wider HACC system, and the lack of a critical mass of specialised HMM services other than in New South Wales and Queensland. A further factor is the location of HMM at the intersection of the health, community care and housing systems, which also creates difficulties of system identity, goal coherence, leadership, and integration of multiple professional perspectives. Furthermore, HMM services are a complex mix of state, community, informal and market provision, and the boundaries between the state-supported HMM system and wider market provision of HMM services are blurred and likely to become increasingly imprecise. These factors make it difficult to design and develop an integrated HMM service system, with clear links between policy objectives and service delivery. However, if HMM services are to play an effective role in addressing the challenges of population ageing it may be necessary to develop a more rigorous and organised approach to HMM policies and services.

5 THE INTERNATIONAL RESEARCH

5.1 Introduction

The development of an effective HMM service system requires a clear conceptualisation of the goals and interventions that comprise HMM services (Chapter 2), an understanding of the goals of ageing policy and the links between HMM and these goals (Chapter 3), and an understanding of the characteristics of the current Australian HMM system (chapter 4). It also requires an understanding of the international and Australian research literature on HMM and its relevance to the development of HMM policies, programs and services. The purpose of this chapter is to provide a comprehensive overview of this literature and consider its relevance as an evidence base for HMM policy development in Australia.

The review of the international literature reported in this chapter (and in Chapter 2) is based on a comprehensive search the University of Queensland library catalogue, web sources and databases: *Social Services Abstracts*, *Sociological Abstracts*, *Medline*, *Rehab. and Physical Med.*, *Allied and Complementary Medicine Database*, *APAIS* and *Family and Society Plus*. The search terms used were home, mod*, adapt*, repair, maintenance, and the modifiers were old, elder*, age*. Keywords, title and abstract information were reviewed to identify appropriate references and reference lists were examined to locate further references of relevance. Grey literature such as program and government reports was located via service system informants and through searches of the Internet and government websites. The literature review is restricted to English-language sources.

Over 520 references were located in the general search of the literature, and of these approximately 132 references made specific mention of home modifications, adaptations or maintenance, and of these 32 made reference to the Australian context. Much of the Australian literature consists of government reports and references detailing characteristics of the Australian ageing population, and describing health, community care and housing service provision in general (10 references). The Australian literature that focuses specifically on home maintenance or modifications is mainly related to health contexts and issues such as falls prevention, use of assistive devices and hospital discharge (17 references). Only five references discuss the provision or outcomes of HMM services in the Australian context. The international literature related to home maintenance and modification (100 references) is predominantly from North America and the United Kingdom. This literature examines HMM policy and service issues far more extensively than the Australian literature, covering topics including HMM service delivery and implementation, conceptual foundations for these services, environmental issues for older people living in the community, the nature of environmental interventions suited to people with range of disabilities, and the impact and outcomes of HMM services.

These characteristics of the corpus of international literature on HMM have great relevance to the Australian context. They indicate that the lack of attention to HMM in Australian ageing policy (as discussed in chapters 3 and 4) is mirrored in Australian ageing research. It is clear from our review of the HMM literature that there is a need to review the major themes and findings of this literature and consider their relevance to the Australian context. This will serve three purposes: to summarise current knowledge regarding HMM services; to identify gaps in the Australian evidence base; and to provide a foundation for a program of research and policy development to bring about a more effective HMM system.

The chapter is organised into three main sections: need and demand, service system issues, and outcomes. This provides an efficient framework for examining what is known about client need for HMM services, the issues associated with delivering HMM services, and the outcomes of HMM services. Within each of these sections there is consideration of the relevant Australian literature, and reference to the 'state of play' in Australian research is made in the chapter's concluding remarks. The findings of this chapter, together with the findings of chapters 2 to 4, provide the foundation for the research framework proposed in Chapter 6.

5.2 Need and demand

Estimating the level and nature of need and demand for HMM services presents a number of challenges. These are partly the familiar challenges of conceptualising need for any community service, including the requirement to distinguish between felt need, normative need, expressed need (demand) and comparative need. There is also a challenge of service definition: HMM covers a broad range of services that are not defined in standardised ways across jurisdictions and countries. Furthermore, most studies are embedded in a particular perspective on HMM. Understanding the need for HMM from a health perspective as compared to a housing perspective, for example (see Chapter 2) raises quite different issues. Another major obstacle to developing an understanding of the need and demand for HMM services is lack of reliable and appropriate data (Gilderbloom and Markham, 1996; Newman, 2003). To date there has been only a modest level of research on need and demand for HMM (Kutty, 1999) and studies that do exist are 'often spotty, anecdotal and unsystematic' (Gilderbloom and Markham, 1996, p. 512). Further knowledge generally about the housing, care and service needs and preferences of older people is also required (Newman, 2003).

A number of approaches have been taken to estimating current and future need for HMM services. At a general level, one approach has been to determine the number and percentage of older people with activity limitations and use this as an indicator of current and likely service needs. More specifically, the types of impairments that older people develop and the specific difficulties older people experience in the home provide insight into the nature of HMM services required. The number of older people who have used HMM services or who have undertaken modifications independently also provides an indicator of expressed need. An examination of consumer uptake, acceptance and perception of HMM services, and of obstacles to use of these services, provides another important perspective. Finally, estimates of unreported or under-reported need for HMM indicate another approach to the need and demand question. The main approaches and findings of need and demand studies that have examined HMM services from these perspectives are reported below.

5.2.1 Activity restrictions and disability in later life

Internationally, there is an increasing number and proportion of older people living in the community with impairments or activity restrictions (Kutty, 1999; McCreadie and Tinker, 2005; Sanford, Echt, and Malassigne, 1999). Policy makers in many countries are concerned about the demand this is likely to place on services, including the quantity and type of housing available (Stone, 1998). In the USA, it has been reported that approximately 38 per cent of older people living in the community have some activity limitations resulting from chronic health conditions, with approximately 12 per cent having limitations in a major activity (Kutty, 1999). In Australia in 2003, 51 per cent of older people report a disability, with 19 per cent reporting a profound or severe core activity limitation (ABS, 2003b). Some 41 per cent indicate that they require assistance to manage health conditions or cope with everyday activities (ABS,

2003b). Both the proportion of older people with a disability, and the severity of disability, have been found to increase markedly with age (ABS, 2003c). Most people over 85 years (84 per cent) report requiring assistance with activities, compared with 26 per cent of those aged 60–69 years (ABS, 2003c).

According to Australian data produced by the AIHW, the most common causes of disability in older people who report a profound or severe activity limitation are arthritis (23 per cent), and musculoskeletal conditions (13 per cent), followed by circularity conditions other than stroke (10 per cent), dementia and Alzheimer's disease (9 per cent), diseases of the eye (6 per cent) and respiratory conditions (5 per cent) (AIHW: Angus et al., 2002). Activity restrictions are most common in mobility (18.1 per cent), with the rate of disability or dependence increasing from 6.7 per cent among 65–69 year olds, and 13.8 per cent for 70–79 year olds, to 42.1 per cent among people 80 years and older. Restrictions in self-care are also evident among 13.3 per cent of older people, increasing from 5.2 per cent for 60–65 year olds, and 9.9 per cent for 70–79 year olds, to 31.4 per cent of people 80 years and older (AIHW: Angus et al., 2002).

Similar activity restrictions have been noted in studies elsewhere. The most common activity limitations for older Americans living in the community have been reported as walking, bathing and getting outside (Kutty, 1999). In an analysis of the 1995 national American Housing Survey (AHS), Louie (1999) identified that older people had difficulty walking three city blocks and climbing stairs (30 per cent), getting into or out of a bed or chair, taking a bath or shower (10 per cent), and going outside the home to perform tasks such as shopping (16 per cent).

5.2.2 Specific difficulties experienced in the home

Traditionally, disability has been defined as having a particular health condition or having specific functional or performance limitations (Williams, Lyons, and Rowland, 1997). However, the social model of disability emphasises the role of the environment in creating disability. Older people continue to be 'architecturally disabled' by residential design (Hanson, 2001). While older people report a range of health conditions, many more are unable to cope in their current home environment. An analysis of the supplement of the 1995 National American Housing Survey (AHS) indicates that approximately 14 per cent of older Americans had a 'housing related disability', that is, difficulty using or functioning in their dwelling (Newman, 2003).

Information on the amount and type of assistance older people require to function effectively in their homes can be difficult to analyse and use, as surveys have differed in the population surveyed, the way in which questions have been asked and how assistance has been defined (Williams et al., 1997). Older Australians (26 per cent) report requiring assistance with property maintenance because of disability or age (ABS, 2003c). Older Americans report difficulty maintaining pavement surfaces, carpets, stairs, handrails, clutter, plumbing and electrical fittings as well as roof, windows, doors and furnaces (Mann et al., 1994). In the United Kingdom, approximately 20 per cent of households headed by someone over 75 are 'in substantial disrepair or requiring essential maintenance' (Peace and Holland, 2001). It is reported that many older home owners appear to accept or ignore the maintenance requirements of their home, while renters may be unwilling to report problems or not able to access adequate maintenance services from the landlord (Mann et al., 1994).

In addition to having limitations in maintenance activities, older Australians also report requiring assistance with health care (23.4 per cent) transport (20.0 per cent), housework (17.8 per cent), paperwork (11.6 per cent) and meal preparation (6.3 per cent) (AIHW: Angus et al., 2002). In all these activities, there is a consistent rise in

rate of dependence as people age. Overall, the proportion of people needing some form of assistance increases from 28 per cent for people aged 65–69 years to 77 per cent for people over 80 years (AIHW: Angus et al., 2002). In particular, the need for maintenance assistance ranges from 19.4 per cent for people aged 65–69 years to 36.8 per cent for those over 80 (AIHW: Angus et al., 2002). Data obtained by the authors from the Australian Longitudinal Study of Ageing (wave 7) conducted by the Centre for Ageing Studies at Flinders University (http://www.cas.flinders.edu.au/alsa.html) indicates that people aged 75 years or older and living in the community on their own or with a spouse have reported even higher rates of needing assistance to undertake home maintenance and gardening (46 per cent) and heavy housework (41 per cent). While 61 per cent report accessing formal help from providers such as doctors, nurses and gardeners, the main providers of assistance are family (partners, sons and daughters) and friends. Of those receiving informal assistance, 47 per cent were assisted by partners, who were often older than themselves (ABS, 2003c).

Traditionally, housing stock has been designed and constructed with little consideration of the needs of older people in terms of accessibility, safety, independence and location (Stone, 1998). In the USA, for example, over 90 per cent of housing does not meet accessibility standards and is unlikely to be replaced in the near future (Steinfeld et al., 1998). In Australia, significant numbers of older people live in a detached house in the suburbs, which they have occupied for decades (Bridge, 2005). Much of this housing was designed for young families with private cars and has design features that create hazards and barriers to independence for the occupants as they age (Bridge et al., 2002; Faulkner and Bennett, 2002). Houses with stairs, narrow doorways and corridors, inaccessible toilets and bathrooms, and limited space create disability (Heywood, 2004a; Oldman and Beresford, 2000) and compromises the safety (Stone, 1998; Trickey et al., 1993), independence (Frain and Carr, 1996) and wellbeing (Heywood, 2004a) of older people. These housing design features can contribute to early institutionalisation (Rojo Perez et al., 2001). The design of these homes can present significant challenges to modification due to the cost and effort involved in making changes (Tabbarah et al., 2000).

The prevalence of hazards in the homes of older people has also been the subject of investigation. A study of 1103 community living people over 72 years in the USA found that 59 per cent of bathrooms had two or more hazards, with hazards being more common in general community housing than in age-restricted housing (Gill, Williams et al., 1999). Many homes were found to have loose throw rugs (80 per cent) or obstructed pathways (50 per cent) and only 39 per cent had grab rails in the bath/shower (Gill, Williams et al., 1999). However the relationship between hazards and falls within the home remains unclear (Gitlin, 2003). In a further study, Gill, Robinson, Williams and Tinetti (1999) determined that grab bars were uncommon in the homes of community-living older people, even among those with documented performance difficulties (Gill, Robinson et al., 1999). In addition, hazards were just as likely, and in some cases more likely, to be present in the homes of people with reported disability (Gill, Robinson et al., 1999). This raises concerns about the demands the home environment is placing on older people at risk of injury.

An investigation of 127 people aged over 60 in receipt of services from an agency or rehabilitation program in the USA revealed that each home had at least four problems or difficulties for older people (Mann et al., 1994). The most common problems were in the kitchen (69.5 per cent), such as high cabinets (28 per cent), and the bathroom (50.4 per cent), such as lack of grab bars/transfer bench (22 per cent). There were also problems with getting to the house from the street (33 per cent), appliances (27.6

per cent), electrical outlets and switches (25 per cent), lighting (23.6 per cent), and stairs (22.8 per cent) (Mann et al., 1994).

Data obtained by the authors from the Australian Longitudinal Study of Ageing (ALSA) Wave 7, referred to earlier, indicates that 19 per cent of people over 75, living on their own or with a spouse, considered that changes or alterations to their home would make their home easier to live in or increase their independence. Of those who indicated that they would like changes to their home, 21.3 per cent required general maintenance, 21.3 per cent wanted rails or bar straps, 14.9 per cent desired ramps or changes to the floor, steps, path and driveways, and 12.8 per cent required structural changes. Other changes included heating/air-conditioning (5.3 per cent), security locks (3.2 per cent) and changes to doors (widening or change of door swing) (2.1 per cent).

5.2.3 Access to services

The availability of home and community care services has increased in many countries in recent decades, although there is evidence that the availability of HMM services has lagged behind. For example, in the USA, an American Association of Retired Persons survey found that people over 45 years reported that they lived in communities that offer door-to door meals (68 per cent), an outdoor maintenance service (55 per cent), accessible public transportation (45 per cent), or door-to-door transportation services (65 per cent). They also reported that their communities offer health monitoring services (33 per cent), nutrition programs in central locations (44 per cent) and personal care services (41 per cent). However, fewer reported having a light home repair service (34 per cent) or a contractor service specialising in home modifications for older people (29 per cent) (Greenwald and Barrett, 2003). Furthermore, some older people did not know whether their community had a light home repair service (22 per cent) or a contractor service specialising in home modifications for older people (29 per cent) (Greenwald and Barrett, 2003).

HACC is the main provider of home and community services in Australia, with approximately 20.6 per cent of Australians over 65 reported to have received HACC services during 2002/03 (Australia, DOHA, 2004). As discussed in Chapter 4, HMM represented a small proportion of all service types provided: 14.4 per cent and 3.1 per cent for home maintenance and modification in 2001/02 (AIHW: Gibson, Madden and Stuer, 2003). Rates of home modifications are similar in the homes of people who owned their home (13.9 per cent), were boarders (14.6), or lived rent free (13.7 per cent) (de Jonge et al., 2006), but lower (8 per cent) for renters (AIHW: Gibson et al., 2003). Although there are guidelines provided for HACC services, little is known about the detailed processes used for prioritising or approving modifications and establishing user charges (AIHW: Gibson et al., 2003). It is known, however, that the number of modifications provided varies significantly among services within and between states (Bridge, 2005). It is also evident that the coverage of service across states and territories is patchy, resulting in gaps in service (de Jonge et al., 2006).

In a recent survey of Home Assist Secure (HAS) in Queensland, many older people reported that they heard about the service through word of mouth (Johnson, 2005). One of the concerns of the clients of this service was that people in need might not find out about it if they do not have a well-established social network, or may have only a limited understanding of what the service could offer (Johnson, 2005). The main reason for contacting HAS was for home repairs and maintenance (67 per cent), while 20 per cent contacted the service for minor modifications and 8 per cent for security problems. Those who received home maintenance and repairs tended to access the service more regularly than those receiving minor modification or security services (Johnson, 2005).

5.2.4 Prevalence of use of HMM services

The reported rate of home modifications varies considerably across surveys depending on the definition of modification, the population surveyed and when the survey was undertaken (Williams et al., 1997). Early reports on home modification reported the prevalence as being as low as 10 per cent in the older population in the USA (Gilderbloom and Markham, 1996; Ohta and Ohta, 1997). However, a survey of 7,500 people over 70 in the USA in 1994 on physical and functional health, housing and service use found that almost 40 per cent of homes had functional modifications (Kutty, 1999). The most common type of modifications was bathroom modifications (27 per cent) including grab rails and shower seats, followed by accessibility modifications (12 per cent) to facilitate wheelchair access and manoeuvrability (Kutty, 1999). Modifications are undertaken by people in homes (58 per cent) as frequently as people in apartments or units (60 per cent) (Kutty, 1999). In 1995, the American Housing Survey (AHS) survey found that 49.29 per cent of older people had undertaken at least one modification in the home, with the most common being hand or grab rails (35.7 per cent), ramps (14.0 per cent), bathroom redesign (11.8 per cent) and widening of hall/doorways (9.5 per cent) (Newman, 2003). In a more recent American Association of Retired Persons (AARP) survey, a nationwide telephone survey of 2,001 mid-life and older Americans found that most people (85 per cent) had made at least one simple home modification to make their homes easier to live in (Bayer and Harper, 2000).

While information on home modifications in Australian households is limited, existing data suggests that around 16 per cent of people 65 years and older have a home modification, mainly handrails or grab rails. The incidence of modification is also higher in privately owned dwellings than in rental dwellings (AIHW: Bricknell, 2003).

There are also specific health conditions, such as diabetes, stroke, hip fracture, fall or joint replacement, that increase the likelihood of having home modifications (Tabbarah et al., 2000). In a population study of 7,447 community-living older Americans aged over 70, Tabbarah, Silverstein and Seeman (2000) identified profiles of older people more likely to have home modifications. People who had had a stroke or joint replacement were most strongly associated with the presence of home modification 'above and beyond their presenting level of disability' (Tabbarah et al., 2000). The authors suggest that this is because their needs were assessed beyond the functional assessment scales (Tabbarah et al., 2000). However, it is also likely that these people were more likely to encounter service systems with an emphasis on providing modification interventions while the focus for the other conditions was more likely to be on medical management and assistive devices.

In 2003, AARP (Greenwald and Barrett, 2003) found that most (82 per cent) Americans over 65 years plan to stay in their houses as they age, but only some (40 per cent) anticipated making the necessary changes to age in place. Despite reporting certain household features as being important, not all had non-slip floor surfaces (54 per cent), entrance without steps (37 per cent), bathroom aids (32 per cent), and personal alert systems (13 per cent) in their current home (Greenwald and Barrett, 2003).

In Australia, an average of 8 hours of home maintenance was provided to each HACC client over 2003/04 (Australia, DOHA, 2004). However, data from the Disability, Aging and Carer Survey (DACS) 1998 indicates that this is not a clear indicator of need, as only a small proportion of older people use government services (42.5 per 1000), compared to private home maintenance services (234.5 per 1000) (ABS, 2003c). Furthermore, the number of older people requiring this type of service is likely to be double the current expressed need (de Jonge et al., 2006), because twice as many

older people indicate a need for home maintenance services as those currently accessing government or private services (ABS, 2003c).

Home modifications are provided to 21,979 (3 per cent) of HACC clients, with an average of AU$328 spent per client per modification (Australia, DOHA, 2004). Considering the population served by this program and the likelihood that many are likely to experience restrictions in core activities, the rate of modifications is surprisingly low. It has been noted that 10 per cent of people aged over 65 years had had to move in the five years prior to 1998 'due to 'profound' or 'severe' activity restriction caused by frailty or disability' (Bridge, 2005). The likelihood of having moved was reported to be even higher for people over 85 years (ABS, 1999, 2005). The discrepancy between the high rate of moving and the low rate of HACC-funded home modifications suggests that the home modification needs of older Australians are not being adequately met (Bridge, 2005; de Jonge et al., 2006).

HACC Minimum Data Set (MDS) data reveals that the majority of home maintenance services (77 per cent) and home modification services (76.5 per cent) are provided to people aged over 70 years, as shown in Table 10. The average cost of modifications was A$224 for people over 75, A$356 for people aged 65–69 and A$730 for people under 64 years (Australia, DOHA, 2004).

Table 10: HMM services received by age

	0–64 years	65–69 years	70+ years	Total
	Number of consumers (%)			
Home Maintenance	14,401 (15%)	7,603 (8%)	73,732 (77%)	95,736
Home Modifications	3,522 (16%)	1,647(7.5%)	16,810 (76.5%)	21,979
	Average service per client			
Home Maintenance (hours)	11.8	7.4	7.3	8
Home Modifications (AU$)	730.9	355.9	241.4	328.4

Source: Australia, DOHA, 2004

Compared with the percentage of people who use aids, home modification rates appear to be low. Usage rates for aids ranges from 87.0 per cent and 87.3 per cent for people with profound or severe restrictions to 75.6 per cent and 76.9 per cent for people with moderate or mild restrictions (AIHW: Bricknell, 2003). A recent Australian study of 'out of pocket' costs for people following a stroke indicates that 23 per cent of the 353 people bore home modification costs within the first year following discharge from a Melbourne hospital (Dewey et al., 2004). The average cost of the modifications was A$630, with the costs ranging from A$8 to A$20,926 (Dewey et al., 2004). In addition, 39 per cent of the discharged patients spent an average of A$477 on aids and equipment ranging in cost from A$4 to A$8,526 (Dewey et al., 2004). Many older people pay for modifications themselves, using savings, assets or income to fund the changes (Pynoos and Nishita, 2003). Despite a number of government sources being available, the National Centre for Health Statistics in the USA found that 75 per cent of home modifications are funded by the consumer alone (Tabbarah et al., 2000). It is clear that the current use of publicly funded home modification services may not reflect the actual rate and cost of home modifications undertaken by older Australians, and nor is it likely to be an accurate depiction of actual need.

5.2.5 Consumer uptake, acceptance and perceptions of home modifications

There is often reluctance on the part of older people to undertake modifications to their home environment (Steinfeld and Shea, 1993; Struyk, 1987; Trickey et al., 1993). A number of factors have been identified as being likely to influence the uptake of home modifications. First, on the demand side, age, gender, health conditions, education, income, price of goods, use of other devices, race and other demographic characteristics of the occupants have been found to affect the use of modifications (Kutty, 1999). In addition, on the supply side, factors such as type of tenure and structure of the dwelling are also likely to affect the use of modifications (Kutty, 1999).

The use of modifications has been found to increase with age, with 34 per cent of the 70–79 year old age group, 47 per cent of the 80–89 year age group and 60 per cent of the oldest old (over 90 years) having undertaken modifications (Kutty, 1999). Gender was found in one study to be a powerful predictor of perceived usefulness of home modifications, with males being more likely to perceive specific modifications as useful in addressing a particular problem (Gilderbloom and Markham, 1996). As would be expected, people with functional impairment as measured by having a health condition, physical limitation, a recent fall or self-report of poor health also increases the likelihood of modifications (Gilderbloom and Markham, 1996; Kutty, 1999; Mathieson, Kronenfeld, and Keith, 2002). Similarly, severity of disability, measured in terms of level of difficulty with activities of daily living (ADLs), has also been found to be associated with having a modification (Tabbarah et al., 2000). However, an association between modifications and severity of disability was not evident when the modifications were provided free of charge (Gosselin et al., 1993). This may have resulted from excluding independent and severely impaired people from the study (Gosselin et al., 1993). In addition, overall measures of dependency do not provide a clear indication of particular areas of need, namely safety in performing a task, which are the basis for specific recommendations (Renforth et al., 2004).

The likelihood of home modifications also increases with years of schooling (Kutty, 1999). It has been proposed that both ability to access information and permanent income may play a role in mediating this effect (Kutty, 1999). In the study undertaken by Gosselin et al. (1993), having an awareness of the need for home modification also predicted implementation. Contrary to expectations, income has not been found in to influence the uptake of modifications (Kutty, 1999). For those who need modifications, especially non-discretionary modifications essential to enabling someone with a significant disability to remain in the home, modifications were income inelastic – that is, people are likely to obtain them regardless of income (Kutty, 1999). Similarly, while households with higher income were more likely to have grab bars and shower seats, income did not increase the likelihood of structural modifications (Tabbarah et al., 2000). It has also been found that older people with low income are more willing to accept modifications once the costs are eliminated (Gosselin et al., 1993; Trickey et al., 1993). This could also be because people on lower incomes are in poorly maintained and designed homes that may be in greater need of modification (Gosselin et al., 1993; Wister, 1989). In addition, those who have no difficulty managing their budget and whose house was in good condition were also more likely to accept free modifications (Gosselin et al., 1993). It could be that people who are managing well are more willing to implement modifications that promote their continued autonomy (Gosselin et al., 1993).

The use of other assistive devices (Kutty, 1999) and the use of formal support also increase the probability of undertaking modifications (Gosselin et al., 1993; Kutty, 1999). This is not surprising as these are also associated with an increase in physical limitations (Kutty, 1999). Alternatively, people who use these interventions may be

more open to using interventions of this nature to reduce dependence (Gosselin et al., 1993; Kutty, 1999). People who live alone are also likely to have modifications, which suggests that home modifications are likely to be a substitute for personal assistance (Kutty, 1999). It has also been noted that minority households are less likely to have modifications (Kutty, 1999; Tabbarah et al., 2000). It is proposed that they have less information on and access to services and modifications (Kutty, 1999). However, little is known about the accessibility and acceptability of HMM services and interventions to people with diverse ethnic backgrounds. It has been suggested that with age, disability, lack of on-site support, ethnicity and income also being risk factors for admission to a nursing home (Redfoot and Kochera, 2004), home modifications may be an effective strategy for delaying institutionalisation. People who have lived in their house longer than 10 years are also more likely to undertake a modification (Kutty, 1999). Apartments are also more likely than a detached dwelling to have modifications, with rented apartments being more likely than owner-occupied units (Kutty, 1999).

It has been proposed that the extent to which modifications can enable people depends of older people's willingness to use it (McCreadie and Tinker, 2005). The strongest predictor of acceptance of free home modifications was having a favourable attitude towards this strategy, especially if the person perceived that the modification might improve performance of daily activities (Gosselin et al., 1993). Much can be learned about the factors that contribute to acceptance from the extensive research on the abandonment and non-use of assistive devices, which continues to be a major concern to service providers and funding bodies (Batavia and Hammer, 1990; Hocking, 1999; Mann and Lane, 1995; Mann and Tomita, 1998; Phillips, 1993; Scherer, 2005). Follow-up studies consistently report that between 30 and 50 per cent of assistive devices are abandoned (Scherer, 1998). A number of factors have been identified as negatively affecting continued use of a device, namely medical, client, equipment, assessment and training-related factors (Wielandt and Strong, 2000). A deterioration (Clemson and Martin, 1996) or improvement (Clemson and Martin, 1996; Garber and Gregorio, 1990; Mann, Hurren and Tomita, 1993) in health condition can bring about change in the priorities or needs of the user and affect use. Consumer involvement in device selection, motivation to use the device or do the task (Cushman and Scherer, 1996; Garber and Gregorio, 1990; Mann et al., 1993; Phillips and Zhao, 1993; Rogers and Holm, 1992; Scherer, 1998; Smith, 1996) can also influence the perceived usefulness of the device. Whether the device is seen as aesthetic, effective, reliable, durable, comfortable and easy to use, and whether it undermines personal identity are also determining factors (Clemson and Martin, 1996; Gitlin, Levine, and Geiger, 1993; Gitlin, Luborsky, and Schemm, 1998; Mann et al., 1993; Tinker and Lansley, 2005). Finally, inadequate assessment (Clemson and Martin, 1996) and training (Mann et al., 1993) can also reduce device use. Factors such as the social acceptability of the device and the degree to which the device heightens the visibility of disability have also been proposed as key factors in the acceptance of assistive technologies (Brooks, 1998; Hocking, 1999).

Older people are more likely to welcome interventions that address their felt needs (McCreadie and Tinker, 2005; Tinker et al., 2004). That is, older people are more likely to accept modifications if they perceive a need for them (Gosselin et al., 1993). It is clear then that the first step in the process of recommending home modifications is understanding the older person's concerns and requirements and determining the individual's acknowledgement of and receptivity to the assessed need (Gosselin et al., 1993; Pynoos and Nishita, 2003; Steinfeld and Shea, 1993). Many older people prefer to cope on their own, despite their difficulties (Auriemma et al., 1999; Filion et al., 1992). They often give little consideration to seeking support and/or making

adaptations (Auriemma et al., 1999; Filion et al., 1992). Studies suggest that older people often adapt to their environment rather than changing their setting to meet their needs (Pynoos and Nishita, 2003). It has been proposed that people balance four factors when deciding whether to obtain home modifications: perceived susceptibility; perceived severity; perceived efficacy; and perceived cost (disruption, social acceptability and financial) (Ohta and Ohta, 1997). Overall, the physical and psychological cost of a home modification has received the most attention (Steinfeld, Levine, and Shea, 1998; Steinfeld and Shea, 1993). However, the perceived need for and usefulness of the modification by the older person also determines whether recommendations are implemented and warrants further attention (Pynoos and Nishita, 2003).

5.2.6 Reasons for not modifying the home

Older people and their families frequently hold different perspectives and priorities from those of service providers (Messecar et al., 2002). Most older people grow accustomed to their living conditions (Wylde, 1998) and usually make a more positive appraisal of their residential situation than 'experts' (Auriemma et al., 1999). Of 280 people over 75 years studied in the USA, 90 per cent were satisfied or very satisfied with their home and only 14 per cent made any alterations (Filion et al., 1992). Despite being recognised as an important strategy for enabling older people to remain living in the community, environmental problems continue to be under-reported (Pynoos et al., 1998; Steinfeld and Shea, 1993) and modifications under-utilised (Mann et al., 1996). Many older people with identified difficulties in the home are reluctant to undertake modifications (Gilderbloom and Markham, 1996).

A number of reasons have been proposed for the under-utilisation of modifications. First, the need for modifications can often arise unexpectedly, which means that people are generally unprepared and don't know what to do, how to get it done, or how to pay for it (Duncan, 1998a). Lack of knowledge of what is available (Pynoos, 2004), how to undertake modifications (Steinfeld and Shea, 1993) and who can assist (Duncan, 1998a) also prevents many home owners, renters and landlords from exploring options. The scarcity of suitable services also presents difficulties for older people seeking assistance (Gilderbloom and Markham, 1996). Many home owners, renters or landlords are not aware of the benefits of home modifications, the options available or how to undertake adaptations to their home (Duncan, 1998a; Pynoos, 2004; Steinfeld et al., 1998). Furthermore, they are not familiar with the services and resources available to assist them in this process (Duncan, 1998a).

Consumers have also identified reasons for not modifying their homes. In a national telephone survey of Americans aged 45 years or older, the two main reasons respondents reported for not modifying their homes or not modifying their home to the extent they would have liked were: the inability to do it themselves; and the inability to afford the modifications (Bayer and Harper, 2000; Pynoos and Nishita, 2003). Many consumers and their families reported that installation tasks were too complicated (Pynoos, 1993; Steinfeld et al., 1998) or had concerns about reliability as a result of having to relying on semi-skilled labour to complete the work (Gilderbloom and Markham, 1996; Pynoos, 1993; Steinfeld et al., 1998). The presence of physical deficiencies in housing and low income have also been proposed as limiting home modification (Newman, 2003; Pynoos and Nishita, 2003). A perceived inability to afford modifications (Gilderbloom and Markham, 1996) and associated repairs often result in people using inappropriate strategies such as behavioural rather than structural changes, and settling for suboptimal solutions (Pynoos et al., 1998; Steinfeld and Shea, 1993).

Home modifications frequently involve a disruption to the home and its routines. Consequently there is a reluctance to undertake the work due to the personal stress involved with this disruption (Steinfeld and Shea, 1993). Permanent changes to the home are often not designed to accommodate variations in health and ongoing changes associated with ageing (Auriemma et al., 1999; Trickey et al., 1993). Consumers have found some recommendations unsuitable, unreliable, too cumbersome or costly, or that they have not received appropriate instruction in correct use of the modification (Auriemma et al., 1999; Gitlin et al., 1993).

An important factor deterring older people from undertaking necessary modifications to their home is cost (Ohta and Ohta, 1997). In a recent Australian study, the cost of modifications was found to be a major deterrent for older people with a limited income or on a government pension (Smith et al., 2002). When 255 older Canadians were offered minor home modifications free of charge, it was found that 69 per cent accepted one or more modifications to their home (Gosselin et al., 1993). The most popular modifications were to the bathroom (49 per cent), kitchen (15 per cent) and bedroom (15 per cent). However, 31 per cent still declined fully funded modifications (Gosselin et al., 1993).

Others have suggested that adaptations have the potential to affect the meaning of 'home', affecting the person's privacy, autonomy and personal identity (Heywood, 2005; Peace and Holland, 2001). Modifications may affect people's self-image (Heywood, 2005) and connection with the home (Heywood, 2005), their routines and heritage (Fisher, 1998). Many express concern about the aesthetics of modifications and the embarrassment and stigma that results (Auriemma et al., 1999; Hawkins and Stewart, 2002). Modifications sometimes require objects of personal significance to be removed to make room for adaptations, thereby diminishing the homely atmosphere of certain rooms (Lund and Nygard, 2004). Furthermore, modifications may make the resident vulnerable to ridicule or violence when their homes are recognised as being occupied by someone who cannot defend themselves (Heywood, 2005). Older people are often concerned about the impact of changes on the value of their home, which they consider to be their major asset (Gilderbloom and Markham, 1996; Hanson, 2001; Kutty, 1999). People are often prepared to endure astonishing levels of inconvenience and discomfort rather than disrupt the meaning of their household space (Steward, 2000).

5.2.7 Likelihood of unmet need

It has been widely recognised that the world stock of housing was not traditionally designed to accommodate the access, safety, independence and locational needs of older people (Stone, 1998). Although home modifications have become increasingly available, it has been proposed that substantial unmet need remains (Mann et al., 1994; Pynoos et al., 1998). However, without adequate data it is not possible to estimate the precise extent of unmet need (Pynoos et al., 1998). Targeted reports suggest that some agencies are unable to undertake several types of modifications that consumers request, such as shower conversions and wheelchair access (Pynoos et al., 1998). Approximately one-fifth (23 per cent) of older people surveyed in the American Housing Survey (AHS) in 1995 reported having an unmet need for at least one modification in the home (Newman, 2003).

Overall, it has been proposed that older people are likely to under-report home maintenance and modification needs, as they do not know what is possible, are uncertain how to pay for changes or are content to choose behavioural over structural changes (Heaton and Bamford, 2001; Pynoos et al., 1998; Steinfeld and Shea, 1993) or 'make do' with existing strategies (Smith et al., 2002). As reported earlier, current rates of home maintenance and modifications provided to older Australians through

HACC programs do not equate with reported need for home maintenance services, numbers of older people relocating, known rates of activity restrictions in core activities and proportion of older people using assistive devices.

Information gleaned from the literature to date provides only a fragmented picture of older people's maintenance and modification needs and a tentative estimate of the extent of their unmet needs. Census data provides only a limited and inadequate picture of the housing needs of older people in general (Gilderbloom and Markham, 1996.) More detailed data collection and surveying of this rapidly expanding section of the population is required if we are to understand and anticipate their requirements for HMM services.

5.2.8 Summary and implications

Estimating the need for HMM services is a complex process. Need can be assessed using a number of approaches, including: the number of older people with activity limitations; the types of impairments older people have; specific difficulties they experience in the home; and the number of older people who have used HMM services. In addition, knowing the uptake, perception and acceptance of HMM services and perceived unmet need also provides an understanding of the HMM needs of older people. While there is a significant amount of Australian data on levels of disability amongst older people, data on those accessing or requiring HMM services is sketchy and inconsistent. There is very little information available on the specific difficulties experienced by older Australians in their homes, their uptake, perception and acceptance of HMM services, and their unmet HMM needs.

5.3 Service system issues

The international literature indicates that there are several features HMM systems that have an impact on effective delivery and uptake of home modification services. These include systemic issues such as funding, legislative frameworks, service integration, links with the building industry, professional expertise, consumer delivery, and research to underpin policy and practice. The main findings from the international literature are reviewed below.

5.3.1 Funding

Home modifications range in cost from a few hundred dollars for a simple grab rail to several thousand dollars to remodel a bathroom (Pynoos and Nishita, 2003). Many older people fund modifications from their own resources, using their savings, assets or income to cover the costs involved (Pynoos and Nishita, 2003). The research suggests that, in the USA, over 75 per cent pay themselves to incorporate accessibility features into their homes, while only 50 per cent of people pay personally for assistive technology without the assistance of a third party (Pynoos and Nishita, 2003). While limited third party funding is available in the USA (Steinfeld et al., 1998), many home owners, renters and landlords are not aware of options available to finance home modifications (Pynoos and Nishita, 2003). Unlike assistive technologies, which are covered in the USA under Medicare, Medicaid and Tech Aids projects, home modifications are not accessible through these funding streams (Pynoos and Nishita, 2003). In the USA, public funding is available through various home equity loans and reverse mortgage loans, available through federal and state-operated programs (Pynoos and Nishita, 2003). In Australia, some loan schemes are available for people wishing to make modifications to their homes but these have not been reported on in the literature to date. In the USA, reverse mortgages have been used to only a limited degree, partly because they are complicated to access (Pynoos and Nishita, 2003). In addition, many older people are reluctant to tamper with their major

asset and unwilling to bear the high costs that often accompany the initiation of the reverse mortgage (Pynoos and Nishita, 2003).

Public funding of home modifications is limited in many countries and is considered to be insufficient to meet growing demand in many contexts (Duncan, 1998b; Healy, 1988; Heywood, 2001b; Heywood et al., 2002; Picking and Pain, 2003; Pynoos, 2004; Steinfeld and Shea, 1993). Furthermore, ongoing funding of services is not assured, with services having to compete annually to secure renewed financial support (Pynoos and Nishita, 2003). Increasingly, services are required to fulfil numerous administrative requirements to account for expenditure (Pynoos, 2004). This has resulted in the number and types of services being limited by providers regardless of demand (Heywood et al., 2002). It has been argued that regulation and approval of expenditure is too restrictive (Pynoos et al., 1998), limiting the range of interventions that can be provided.

It is generally agreed that in the USA there is a need for increased accessibility, flexibility and availability of funding systems for home modifications. Private funding systems need to be more accessible and attractive to older people. Self-funded modifications can be facilitated through reverse mortgages, which allow older people to fund modifications by drawing on the cash value through a monthly stipend, a lump sum payment or a line of credit (Pynoos and Nishita, 2003). However, it is clear that the uncertainties, complexities and costs associated with these need to be reviewed if older people are to be encouraged to manage their main asset in this way. Housing finance agencies and private lenders should also be encouraged to develop loan programs to enable older people to undertake necessary modifications (Pynoos and Nishita, 2003).

In the USA, it has also been suggested that funding of modifications would be improved if Medicare, Medicaid and other health plans were required to pay for home modification assessments and reimburse home modification costs (Pynoos and Nishita, 2003). In addition, the expenditure caps on modifications under Medicaid waiver programs also need to be raised to cover a broader range of modifications (Pynoos and Nishita, 2003). It is proposed that although landlords in the private market are not required to pay for modifications, tax credits and tax deductions may encourage them to pay for modifications to common areas and within an individual unit, thereby improving the accessibility of their properties and relieving the burden currently placed on the tenant (Pynoos and Nishita, 2003).

Because many home modification programs in the USA piece funding together from several sources, the system would be streamlined by consolidating existing programs, thereby reducing fragmentation and increasing flexibility of funding (Pynoos, 1993; Steinfeld et al., 1998; Pynoos and Nishita, 2003). It would be more effective if the funding for assistive technologies and modifications were to be integrated into one system (Duncan, 1998b). Furthermore, better links between community care systems and housing-related services would ensure that the needs of older people are more comprehensively addressed (Pynoos et al., 2004; Tinker, 1999).

5.3.2 Legislation

The legislative context for HMM services, specifically anti-discrimination legislation, has been raised as an important service system issue in the international literature. In the USA the *Fair Housing Act* includes the provision that 'tenants can make needed modifications to multi-family units for accessibility purposes' (Steinfeld et al., 1998, p. 16), but this Act does not apply to single-family housing and smaller complexes (Steinfeld et al., 1998). The vagueness of some statutes and the reluctance of older people to use conciliation or legal means to rectify problems have limited the impact of

legislation to date (Pynoos and Nishita, 2003). Home modification programs for older people may also benefit from legislation aimed at addressing the needs of older people, such as the *Title III Older Americans Act* in the USA (Pynoos and Nishita, 2003), and the Community Care Act in the UK. However, home modifications are usually one of many needs being addressed under such legislation and consequently may not be considered as a high priority service area (Pynoos and Nishita, 2003).

It is suggested that better enforcement of existing legislation, such as antidiscrimination and fair housing legislation, enables older people with disabilities to achieve more equitable access to accommodation and enables older tenants to modify their rental unit (Pynoos et al., 2004; Steinfeld et al., 1998). In the UK, there is specific provision for home modifications in the *Chronically Sick and Disabled Person Act 1970*; the *Housing Grant, Construction and Regeneration Act 1996* and the *Regulatory Reform (Housing Assistance) Order 2002* (UK, Department for Communities and Local Government, 2006). In particular, the *Housing Grant, Construction and Regeneration Act 1996: Mandatory Disabled Facilities Grant* requires local housing authorities to provide grant aid of up to £25,000 to eligible people with a disability for a range of modifications to their homes, subject to a test of the applicant's resources (UK, Department for Communities and Local Government, 2006). Owner-occupiers, tenants of local authorities and private landlords are all eligible to apply for a Disabled Facilities Grant (UK, Department for Communities and Local Government, 2006). Poor publicity for these grants has resulted in low numbers of older people being aware of this resource but those who have accessed grant monies were successful in having their modification needs met (Awang, 2002). Agencies managing the grants experience high levels of demand but the system is perceived as being reactive rather than proactive in meeting service users' needs (Awang, 2002).

In the long term, policies that encourage universal design of housing would eliminate the need for special modifications or extensive remodelling to accommodate the needs of older people (Pynoos et al., 2004; Steinfeld et al., 1998). Visitability legislation, which requires specific accessibility features to be incorporated into single-family houses to ensure that people with mobility impairments are able to visit or live in the house (Smith, 2003) is seen as one way of improving the usability of new houses as people age (Pynoos and Nishita, 2003). Visitability legislation has been passed in a number of localities and states in the USA. Local authorities in the USA are also being encouraged to develop incentives for housing developers to include features based on principles of universal design (Pynoos et al., 2004).

5.3.3 Integration

In many countries, complex funding systems result in a patchwork of agencies providing HMM services (Pynoos et al., 1998). This can result in lack of connectivity among services and professionals working in the area (Pynoos, 2004) and limit both supply of and demand for services (Pynoos et al., 1998). Services are provided across several different systems, namely the health, social services and housing sectors. Each of these has their own priorities, eligibility requirements and delivery systems (Pynoos and Nishita, 2003; Pynoos et al., 1998), which creates uncertainty and confusion at a local level. Services often vary in purpose, population served, funding source, scope of service, type of modifications, budget per home, and approval processes (Klein et al., 1999). In most communities, it is difficult to identify one group or individual who can provide the full range of services, with many providers specialising in specific aspects of the process or particular types of modifications (Pynoos et al., 1998). Consequently, consumers are likely to need access to more than one service in order to have their needs addressed (Pynoos et

al., 1998). However, information about modes and mechanism for delivering services is very limited, and so it is difficult for consumers to navigate these services effectively (Pynoos et al., 1998).

In the USA, funding limitations often restrict HMM service providers in who they can serve, the number of clients they can provide services to, and the types of services they can offer (Pynoos et al., 1998). Modest budgets often result in long waiting lists and a focus on providing low-cost solutions (Pynoos et al., 1998). Shortage of funds can result in services being confined to certain geographical areas and specific groups, namely people on pensions or with low income (Heywood et al., 2002). The funding arrangements, types of services provided and the nature of organisations providing HMM services vary greatly from one geographic location to another (Picking and Pain, 2003; Pynoos et al., 1998). In many areas, especially in rural regions, there is little or no assistance available for older people (Klein et al., 1999; Pynoos, 1993). Even in other locations, older people need to be well informed, assertive and prepared to wait a considerable length of time to have their needs addressed (Heywood et al., 2002; Picking and Pain, 2003; Tinker et al., 2004). Service delivery can also vary depending on the time of the year, and funding and resource availability (UK, Department for Communities and Local Government, 2006). Concerns have also been raised regarding inequalities between home owners and tenants (Heywood, 2001a; Heywood et al., 2002; Picking and Pain, 2003). While home owners are readily able to make changes within their home, renters often face difficulties in gaining permission for modifications (Pynoos and Nishita, 2003). Some people have access to a variety of loan programs to finance modifications, while low- and middle-income earners do not have the income or equity to fund adaptations (Duncan, 1998b). Differences have also been found in the number of modification recommendations provided to people who have private insurance compared with those who are only publicly insured. If individuals have access to funding support for various environmental interventions this increases the likelihood of these being recommended (Lysack and Neufeld, 2003).

Without a dedicated home maintenance and modification funding program, home modifications remain only part of a wider service system and are often given low priority (Duncan, 1998b; Pynoos and Nishita, 2003). Because home maintenance and modification services straddle a number of service systems and industries, they are often more difficult to provide than personal care services (Pynoos et al., 1998). With a number of agencies within health, social and housing services being responsible for one or other aspect of the home maintenance or modification process, such as information and referral, assessment or funding or supply of specific modifications, it is difficult for consumers to have their needs comprehensively met (Pynoos and Nishita, 2003). Poor integration of services is of concern in many countries including the USA (Duncan, 1998b). Despite assistive devices and modification solutions going hand-in-hand, these interventions are often provided within two different service systems (Duncan, 1998a). In Australia, modifications are only a small part of the Home and Community Care HACC program (de Jonge et al., 2006), which is already stretched by numerous competing demands. While the services offered within this program serve a distinct population and often overlap, the service system in Australia is poorly integrated (de Jonge et al., 2006).

Access to home modification services is often difficult for consumers and usually requires some type of health or social service intervention or case management (Steinfeld et al., 1998). Older people who do not have contact with these services are usually unwilling to spend money on specialist services to assist with assessment of need and specialised products and designs (Duncan, 1998a). In the USA, there is

also uncertain or limited reimbursement through health insurance for such services (Auriemma et al., 1999; Mann, 1997; Pynoos, 2004).

Considerable effort is required to increase access to and use of environmental interventions (Liebig and Sheets, 1998). Good practice depends on budgets, cash flow and workload arrangements being consistent throughout the year (UK, Department for Communities and Local Government, 2006). Information on service availability and processes needs to be disseminated widely to the general public, service users and their advocates, as well as professionals and other related service providers (UK, Department for Communities and Local Government, 2006). Service delivery could be considerably improved if a directory of funding and modification services as well as information and referral centres and toll-free telephone services were available to consumers, policy makers and service providers alike (Duncan, 1998b; Picking and Pain, 2003; Pynoos and Nishita, 2003). This would facilitate access to service providers, particularly occupational therapists, design professionals, and contractors with specialist interest and skills in home modifications (Steinfeld et al., 1998). Early liaison between health and home modification services has also been identified as important in reducing the length of stay of people in hospital and facilitating early return to home (Hakim and Bakeit, 1998). There is a need to develop a comprehensive, coordinated system for environmental interventions that is consumer responsive and sensitive to consumers' changing needs over time (Liebig and Sheets, 1998). Strategies such as coalition building and interagency coordination are required at a local, state and national level (Liebig and Sheets, 1998). Establishing a task force would provide a forum to facilitate dialogue between programs, stimulate leadership in advocacy, and promote a seamless web of services (Liebig and Sheets, 1998). Interagency coordination could also be promoted further through shared application processes and cross training of staff (Liebig and Sheets, 1998).

5.3.4 Industry links

Home maintenance and modification services rely heavily on the building industry to implement recommendations. Many have commented on the difficulties encountered by health and community care professionals in interfacing with this industry. First, it is often much more complex to deal with a contractor than was anticipated (Pynoos et al., 1998). Getting cost estimations, dealing with specialised trades, storing materials and tools, subcontracting, managing liability and quality control are not familiar to professionals from the health and social sector (Pynoos et al., 1998). It is also difficult to find skilled subcontractors to coordinate the range of home modifications that clients need (Pynoos et al., 1998). Poor workmanship can result in grab rails being poorly installed or incorrectly positioned (Lansley et al., 2004). Contractors and remodellers are also not well informed about the needs of older people or suitable adaptations (Auriemma et al., 1999; Pynoos et al., 1998; Steinfeld et al., 1998) and very few have developed adequate skills and experience to undertake modifications (Duncan, 1998a). They often have established traditions in building that are difficult to overcome and are reluctant to try new methods and products (Pynoos et al., 1998; Steinfeld et al., 1998). In addition they are often not interested in small home modification projects (Pynoos, 1993; Steinfeld et al., 1998). In the USA, manufacturers and the housing industry have been slow to explore the home modification market as they currently see it as a discreet market and have not yet sensed a great demand (Duncan, 1998a).

The building sector is also bound by a variety of standards and codes, which can affect modification solutions. Building codes can often affect the nature of the solution or add substantially to the cost (Steinfeld et al., 1998). Contractors are required to meet a range of national and local codes, which may mean that additional work is

required before the modification is undertaken, or that work must be undertaken in a particular way, which can add substantially to costs (Steinfeld et al., 1998). Rigid and variable interpretations of codes can sometimes make it difficult to creatively negotiate a solution that meets the requirements of both the code and the householder (Pynoos, 2004; Tanner et al., under review). In addition, contractors often seek to comply with standards and codes that were not developed with older people in mind and are not required in or suited to a residential environment (Klein et al., 1999; Pynoos and Nishita, 2003; Sanford, Follette, and Jones, 1997; Steinfeld et al., 1998). In meeting these requirements, parts of the home can take on the appearance of a public environment, thus transforming the meaning of home (Lund and Nygard, 2004)

As noted previously, the need for extensive remodelling or special accommodation can be reduced if houses are designed universally (Steinfeld et al., 1998). Considerable attention has been given to educating design and construction professionals about designing with the broader community in mind. However, there continues to be a need to educate the industry on how to make high-quality accessibility modifications (Steinfeld et al., 1998). Marketing initiatives aimed at educating the housing industry about expanding need and consumer interest in home modifications would assist in focusing the industry on developing services in this area (Duncan, 1998b). Establishing design awards and documenting and publicising notable success stories would also assist in raising awareness of the design considerations for older people (Duncan, 1998b). It is particularly important that people involved in remodelling existing homes are well informed about accessibility and usability (Steinfeld et al., 1998). Increasingly, there is a call for support for developing networks of service providers (Steinfeld et al., 1998) so the industry can work together to develop knowledge and collaborative links. In particular, it is critical that communication and coordination between health, housing and social services is promoted (Heywood et al., 2002).

5.3.5 Professional expertise

Home modification services often comprise small teams and depend on the expertise of each team member (Heywood et al., 2002). Service failures can result when people with appropriate experience or expertise are not available (Heywood et al., 2002). It is often difficult to find qualified professionals to work in this area (Pynoos, 1993; Steinfeld et al., 1998) and in some areas there is a chronic shortage of suitable personnel, such as community occupational therapists. In the UK, this has resulted in an average wait of 11 months for the first assessment (Heywood et al., 2002). Occupational therapists have been identified as a valuable resource for carrying out home modification needs assessments (UK, Department for Communities and Local Government, 2006). Where assessments involve occupational therapists outside a specialist home modification service, training and exchange of knowledge and skills are required (UK, Department for Communities and Local Government, 2006). Service providers undertaking assessments for other home-based services could also be used to assess for minor modifications if suitable processes are established and appropriate training is provided (UK, Department for Communities and Local Government, 2006). Additional training is often required to enable service providers to work effectively across a number of sectors – for example, with people from health, community care, housing and the design and construction industry (Duncan, 1998a).

It has also been suggested that HMM service delivery would be enhanced if education about the need and cost-effectiveness of home modifications were provided to a range of stakeholders, including funders, program managers, leaders, medical insurers and legislators (Duncan, 1998a; Pynoos, 2004). Increased advocacy for HMM services by ageing, disability and housing networks to policy makers, funders

and program managers would ensure that they were better informed about the need for and potential benefits of home modifications (Liebig and Sheets, 1998; Pynoos, 2004). Training for doctors and other points of referral on how to identify a modification need and make a referral to an appropriate service would also improve service delivery (Liebig and Sheets, 1998). Education efforts should not be restricted to the health and community care sectors. Real estate and appraisal professions require education in home modifications and universal design so they can assess and promote accessibility in community housing (Duncan, 1998a; Steinfeld et al., 1998). Some have expressed concern that education may result in an increase in demand that cannot be fulfilled (Heywood et al., 2002). However, it is argued that improved awareness of the benefits of home modification can assist in reorienting services to providing environmental interventions that can prevent disability and decrease the ongoing costs of personal and residential care. Furthermore, education of consumers can empower them to periodically review their needs and provide them with skills to address these (Auriemma et al., 1999; Connell and Wolf, 1997). It can also encourage people to consider home accessibility as part of a family's long-term financial planning (Duncan, 1998b).

5.3.6 Consumers and service quality

A number of concerns have been raised about the quality of service provision in home modification services. In the UK, many service users experience lack of coordination between services, interruptions to service delivery as a result of staffing and funding not being available, and poor communication from service providers (UK, Department for Communities and Local Government, 2006). The amount of time that service providers spend in the home is often limited by funding and reimbursement policies (Duncan, 1998b). This means that there is often insufficient time to consult with families and enable them to make informed decisions (Duncan, 1998a). In some cases, professional judgement may be distorted by these organisational constraints, resulting in recommendations by occupational therapists being ineffective or even seriously harmful to service recipients (Heywood, 2004a). In addition, there are often delays in providing modifications because of lengthy application processes, long waiting lists for assessments and hold ups in the work being carried out (Hawkins and Stewart, 2002; Picking and Pain, 2003).

There are many inconsistencies between services in the way in which people's needs are assessed. Services use a variety of assessment tools, assessors, procedures and service criteria to determine the need for modifications (Klein et al., 1999; Pynoos et al., 1997). Many of the assessment tools used are not standardised and have often been developed by individual services providers for their specific service (Auriemma et al., 1999). While some standardised checklists have been developed for hazard assessment (Clemson, Roland and Cumming, 1992), poor reliability of other tools, such as shower and toilet assessments (Auriemma et al., 1999; Clemson et al., 1992), can result in inconsistencies within and between services (UK, Department for Communities and Local Government, 2006). Currently there is a lack of follow-up in home modification services (Auriemma et al., 1999) and few studies have investigated issues that arise after recommendations have been made. Follow-up studies on bathroom modifications found a number of problems, including failure to deliver equipment, wrong equipment delivered, improper installation of equipment and difficulties in use of equipment (Gitlin et al., 1999).

Effective assessment of need has also been identified as being critical to good service delivery (Klein et al., 1999). In particular it has been found to be important to evaluate the functionality of the environment as well as the specific requirements of the older person (Pynoos, 2004). Therapists also need to provide accurate specifications to

ensure work is carried out appropriately (Heywood, 2001a; Picking and Pain, 2003). Informing the client about the work to be carried out and what to expect in the adaptation process also assists the client in dealing with the experience (Picking and Pain, 2003). Most importantly, there needs to be adequate follow-up (Gitlin et al., 1999; Klein et al., 1999; Mann et al., 1994) to check the impact of the modification, the quality of equipment delivery, installation and safe use (Gitlin et al., 1999), and to identify unexpected difficulties and make final adjustments (Klein et al., 1999). Consumers have reported that they value professionals who understood the stress that the experience of modification presents (Picking and Pain, 2003). Having someone to coordinate the process, monitor progress and troubleshoot is also considered by consumers to be important (Picking and Pain, 2003).

There is also concern that assessments are still focused on the physical environment and fail to heed the views of the person and family (Hawkins and Stewart, 2002; Heywood, 2004a). This can result in wasteful adaptations, as recommendations that do not account for psychological factors or consider the meaning of home are not likely to be accepted or well utilised in the home environment (Heywood, 2004a). Furthermore, overemphasis of the individual's safety (Pynoos, 2004) and performance problems allow little room to focus on independence, injury prevention, caregiver health, and social integration (Duncan, 1998a). In addition, the home environment often receives only selective or cursory examination (Pynoos et al., 1998) and its role in supporting frail older people is often overlooked (Pynoos, 2004; Pynoos and Nishita, 2003). Many service providers also tend to propose modifications that fall within the financial resources and expectations of the subsidising organisation (Rousseau et al., 2001b). The best value may not always be the cheapest option. Interventions that do not fully satisfy the current and anticipated needs of the household may result in wasted expenditure (UK, Department for Communities and Local Government, 2006). Modifications provided within the health sector may have an institutional or medical look and feel (Duncan, 1998a), which may be at odds in the home environment.

Lack of consumer involvement in assessments and decision making (Auriemma et al., 1999; Hawkins and Stewart, 2002; Nocon and Pleace, 1997) continues to be an issue. Older people's views on their home and needs are often very different to the views of service providers. This has a significant impact on how much they value the advice given and how willing they are to proceed with the recommendations (Auriemma et al., 1999). There is concern that the way in which home modifications services are delivered can be disempowering to the service recipient (Heywood, 2004a; Sapey, 1995), not allowing them sufficient choice and control over the process (Hawkins and Stewart, 2002).

To date, there has been limited guidance on how to provide effective home modification services (Picking and Pain, 2003), but a number of themes recur in the literature. First and foremost, service delivery must provide interventions that older people view as viable solutions to the problems they identify as important (UK, Department for Communities and Local Government, 2006; Wylde, 1998). Wylde (1998) proposes that it is no longer acceptable to develop policies and programs based solely on the perspectives of professionals. Consumers must be involved in the coordination of home modification services and remain active in the home modification process (Picking and Pain, 2003). Effective service delivery depends on professionals working collaboratively with the older person (UK, Department for Communities and Local Government, 2006; Klein et al., 1999; Ohta and Ohta, 1997) to ensure that the older person and their home are considered holistically (Auriemma et al., 1999; Hawkins and Stewart, 2002), and that their cultural background is acknowledged and respected (Krefting and Krefting, 1991). In particular, it is important

that professionals do not just consider the physical aspects of the home but rather examine the personal, social, temporal and cultural dimensions of the home, which are also likely to be affected by physical changes (Harrison, 2004).

In collaboration with the client, the service provider needs to identify the range of potential solutions and discuss which best facilitate the client's preferred activities and lifestyle (Hawkins and Stewart, 2002). The use of the Canadian Occupational Performance Measure (COPM) (Law et al., 1994), which allows the consumer to define and prioritise their own areas of need and the relationship between the environment and the person to be examined, is one approach to developing a collaborative structure to the assessment process (Hawkins and Stewart, 2002). This approach requires that service providers become 'supportive enablers and a resource' rather than 'controllers of a limited budget' (Hawkins and Stewart, 2002, p. 85). It also allows the value and meaning of the home to be acknowledged as interventions are negotiated with respect for the occupants and the dynamics of the household (Hawkins and Stewart, 2002; Steward, 2000). Greater involvement of people with a disability, at all stages of planning and provision of services, including providing the opportunity to take control of the modification process, are viewed by many as essential if their needs are to be met appropriately (Nocon and Pleace, 1997; Picking and Pain, 2003).

It is often difficult to coordinate the variety of services and service providers required for the successful implementation of modifications (Steinfeld et al., 1998). Issues frequently arise when people are discharged from hospital to unsuitable homes, which then require modifications to be undertaken quickly in order for the person to live safely in the environment (Heywood et al., 2002). Delay in the provision of home adaptations has been found to prolong hospital stays unnecessarily (Hakim and Bakeit, 1998). Coordination difficulties have also been identified as a prevailing issue within home modification services (Pynoos, 2004) with no one person being responsible for overseeing the overall process (Picking and Pain, 2003). Consequently, older people and their families are often faced with the difficult task of coordinating the many different providers that may be needed for a home modification including occupational therapists, installers, suppliers and service agencies (Pynoos and Nishita, 2003). Although HMM service delivery cuts across a number of service areas and relies on the skills and experience of people from a wide range of disciplines, it is desirable that the service recipient experience a seamless, interconnected service (UK, Department for Communities and Local Government, 2006). This may require that joint agreements, protocols and service level agreements be established between services. A central point of enquiries or referral would also assist users in accessing relevant services (UK, Department for Communities and Local Government, 2006).

5.3.7 Research

Research on HMM has been hindered by a number of factors including the relatively low status of allied health professionals (Heywood, 2004a). Randomised control trials, the preferred form of research in the health arena, are difficult to mount in community settings. Chronic health conditions and the problems of older people have historically had low status in medical fields and housing issues are not well recognised in medical spheres (Heywood, 2004a). Research by community-based health professionals such as occupational therapists tends to be under-funded, small scale and difficult to access (Heywood, 2004a). Research in this field is also scattered, spanning the domains of health, disability, ageing and housing (Heywood, 2004a). Finally there are a number of methodological difficulties in conducting research in this field (Heywood,

2004a). Without supportive evidence, it difficult to promote these services with government and secure support for increased funding (Duncan, 1998b).

Many issues related to HMM require further research to inform policy and program development (Liebig and Sheets, 1998). First, variation in the changing needs of older people with housing disability needs to be detailed (Duncan, 1998b; Liebig and Sheets, 1998). Attitudinal, financial and institutional barriers that limit access to modification services also need to be explored and those at risk of unmet need identified (Liebig and Sheets, 1998). Studies need to be undertaken to determine the impact of modifications, and which are most effective in meeting the needs of the consumer (Liebig and Sheets, 1998; Picking and Pain, 2003; Pynoos, 2004). The cost effectiveness of modifications also needs to be investigated (UK, Department for Communities and Local Government, 2006; Duncan, 1998b; Liebig and Sheets, 1998). Factors that have an impact on effective use of HMM also need to be examined and best practice in HMM service delivery identified (Liebig and Sheets, 1998). Many of these issues remain unaddressed, especially in the Australian context.

5.3.8 Summary

Considerable attention has been paid in the HMM literature to service system issues. These include funding processes, legislative contexts, service integration, links with the building industry, the role of professional expertise, issues relating to service quality and the interface between services and consumers, and the need to develop the research evidence base to underpin policy and practice. While service system issues arise in particular national and institutional contexts, there appear to be many similarities between the HMM service system issues identified in the international literature, and the issues raised in the review of the Australian service system in Chapter 4 of this Positioning Paper.

5.4 Outcomes

There are only a limited number of studies that examine the outcomes of HMM service provision. A number of evaluation studies have reported on client satisfaction issues and the benefits of HMM services reported by service recipients. Some studies have examined the impact of removing hazards in the homes of older people, while others have investigated the effect of tailored home modifications on the health and independence of older people. More recently a number of qualitative studies have explored the impact of home modifications on subjective meanings of home. Some of the most relevant studies are discussed below.

Client satisfaction with home modifications has been studied in the UK (Heywood, 2001). A qualitative study reported that minor modifications had a range of lasting positive consequences including 'improved safety and reduced risk of accidents' (Heywood, 2001). Major modifications such as bathroom conversions, extensions and lifts were perceived as having a greater impact, having 'transformed people's lives' (Heywood, 2001). Successful modifications were also reported as keeping people out of hospital, reducing the strain on carers and promoting social inclusion (Heywood, 2001). Another study, which interviewed 67 people aged over 70 who had received a home modification service, reported high levels of satisfaction, particularly with respect to the way that modifications enabled them to exercise control over many of their day-to-day activities (Lansley et al., 2004).

An investigation of home assist secure services in Queensland found high rates of satisfaction (Johnson, 2005). Clients reported that assistance with security and maintenance provided them with peace of mind and reassurance and made living in

their home easier and safer (Johnson, 2005). A study undertaken in 2002 by the Queensland Department of Housing on its home modification program found that the majority of people reported moderate to extreme satisfaction with the completed modifications and felt that the changes had a positive impact on their safety, independence and quality of life (de Jonge et al., 2006).

A number of studies undertaken in Australia have investigated the impact of hazards in the home (Carter et al., 2000; Clemson and Martin, 1996; Mackenzie, Byles, and Higginbotham, 2002; McLean and Lord, 1996), and the impact of home modifications on falls in older people (Cumming et al., 1999; Day et al., 2002; Peel, Steinberg, and Williams, 2000; Steinberg, Cartwright, Peel, and Williams, 2000; Stevens, Holman, Bennett, and de Klerk, 2001; Thompson, 1996). These studies do not establish a direct relationship between environmental hazards in the home and the incidence of falls (Gillespie, Gillespie, Cumming, Lamb, and Rower, 2001), although this may be due to different approaches used in defining core concepts such as home hazards (Gitlin, 2003). In other studies, home modifications have not been found to independently reduce falls. However, in combination with a comprehensive home visit, home modifications do significantly reduce the risk of falling for frail older people who have previously fallen (Close et al., 1999; Cumming et al., 1999). These results suggest that home modifications targeted at the specific needs of at risk populations may be the most effective with respect to falls.

A number of studies have also been undertaken in the health arena, to investigate the impact of interventions that include home modifications. In one randomised control trial, 90 home-based frail elderly were randomly assigned to the intervention and control group. The intervention group, who were systematically provided with assistive technologies and environmental interventions, were found to decline at a slower rate (reduced morbidity) than the control group and to have reduced institutional and in-home personal care costs (Mann et al., 1999). Another study, which provided education, physical and social environmental modifications to families with a member with dementia, found a reduced decline in instrumental and self-care activities and fewer behavioural problems (Gitlin et al., 2001). Using a series of constructed case studies, environmental interventions were shown to cost significantly less than providing ongoing residential care, except in cases where people have severe impairments (Lansley et al., 2004). Preliminary findings of another study found that introducing home modifications and other control-oriented strategies to functionally vulnerable people over 70 reduced mortality (Gitlin et al., 2006).

A recent study in the UK examined the health outcomes of modifications in the homes of people with disabilities. Semi-structured interviews were undertaken with 104 recipients of major modifications and postal questionnaires were returned by 162 recipients of minor modifications. While not specifically targeting older people, this study found that people with disabilities living in unadapted or badly adapted housing experienced pain, accidents, exacerbated illness, or feelings of depression. In contrast, well-designed adaptations were found to have a positive impact on the physical and mental health of the person with a disability (Heywood, 2004a). Furthermore, these benefits were long-term and extended to improve the health of other members of the family as well (Heywood, 2004a). This study confirms the findings of previous studies, which found reduction in pain resulting from minor modifications such as the installation of grab rails (Clemson and Martin, 1996; Edgington, 1984).

The outcomes of home modification interventions have also been evaluated in terms of performance of functional activities. A small study that investigated the impact of assistive devices and environmental interventions on the occupational performance of

16 older adults found that the interventions improved the clients' satisfaction and perception of performance of a range of self-identified activities in the home (Stark, 2003). A number of practical outcomes have also been identified. Another UK study found that home modifications enabled people to undertake activities they had become unable to engage in and restored access to areas of the home (Heywood, 2005). Modifications were also perceived as preventing accidents and falls and reducing the mental and physical strain on carers (Heywood, 2005). This study also found that modifications could also have positive and negative effects on the meaning of home, affecting the security, privacy control, and autonomy provided by the home as well as the self-image and relationships of its residents (Heywood, 2005). In another qualitative study, Heywood (2004b) found that material needs such as access and safety may not always be the most important to modification recipients. The need to retain or restore dignity, to have values recognised, to be afforded choice and to take an active part in society are important aspects of the home environment and require due consideration by those providing HMM services (Heywood, 2004b).

Similarly, a qualitative study undertaken in Australia on the impact of home modifications on the meaning of home for older people residing in public housing found that home modifications have the potential to enhance the experience of home as a place of significant and unique personal and social meaning for older people (Tanner, 2005). By making the environment less demanding, home modifications improved safety, security and comfort in the performance of daily activities, increased independence and efficacy in performing valued activities and roles, reduced stress on carers, and supported the continuation of social networks and relationships (Tanner, 2005). The study also found that highly functionalist approaches to provision of home modifications eroded the meaning of home and diminished the effectiveness of home modifications (Tanner, 2005).

Generally it can be concluded that there has been very limited examination of the outcomes of HMM to date, both internationally and in Australia. Service reviews and small studies have found that older people are often very satisfied with HMM services and interventions, which are perceived as allowing them to remain living safely and with greater ease in their home. The small Australian literature has largely focused on the impact of hazards and modifications on falls reduction with uncertain results, except when targeted at 'at risk' populations. High-level evidence supports the effectiveness of home modifications in combination with other interventions in reducing mortality, morbidity and care cost among the frail elderly. Smaller studies have detailed the effect of modifications on engagement in activities, use of the home, and carer strain. Finally, research into the impact of home modifications has highlighted the importance of considering the meaning of home when assessing the HMM needs of older people.

5.5 Conclusions

This chapter provides a detailed overview of the significant body of international research on HMM. This research provides an important foundation for the development of HMM research and policy in Australia. Most of this research has been undertaken in the USA and the United Kingdom. However, it has considerable relevance to Australian HMM policy and research in two respects. First, while care must always be taken in applying research from a different national context, many of the findings can be used directly as part of the evidence base for Australian HMM services. Secondly, and equally importantly, the international literature provides a foundation for the development of an HMM research agenda in Australia. It is suggestive of the types of research questions and studies that should be explored and undertaken in Australia, and these are specifically identified in Chapter 6.

A number of overall limitations of the HMM literature should also be noted. Firstly, there is a far greater emphasis on home modification services than on home maintenance services. Secondly, as already noted, there is a lack of standardisation of terms and definitions across the corpus of research, and this makes comparison of the findings of studies difficult and hinders the development of cumulative knowledge. Thirdly, much of the research has a health focus, and is more narrowly conceptualised than the integrated perspective on HMM services developed in Chapter 2 of this Positioning Paper. Fourthly, the main focus of research has been need and demand and service system issues rather than analysis of outcomes. Finally, the focus of much of the research is on professional practice rather than policy. While many of the findings of the research can inform policy questions, the research as a whole is not oriented to policy development.

One clear finding of the international literature review is the paucity of Australian research in this area, particularly research to underpin policy and program development. The corpus of Australian research is readily summarised. It comprises:

→ data on levels of activity restriction, nature of disability, and assistance/ modification requirements of older Australians from ABS, AIHW, ALSA and other population surveys;

→ analysis of HACC client data relating to HMM services;

→ a number of studies that focus on environmental hazards and the incidence of falls;

→ a small number of evaluations of HMM programs.

Clearly there is a need to develop a systematic program of research that will, over time, provide the evidence base to support the development of HMM policies and services in Australia.
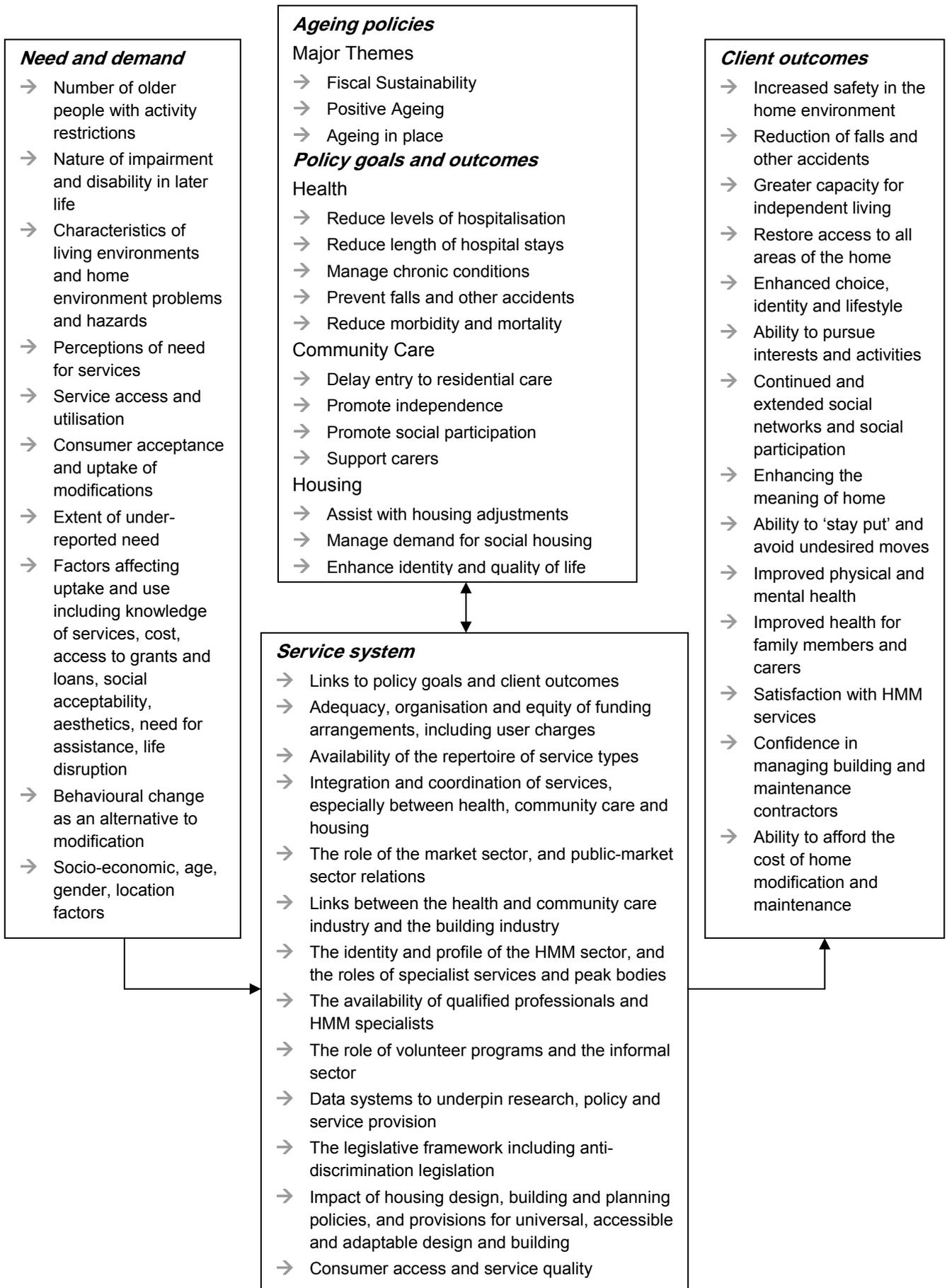
6 A RESEARCH FRAMEWORK

6.1 Introduction

This chapter draws together the previously discussed concepts and findings to present an integrated framework for HMM research in Australia. The framework draws on the definition of HMM (Chapter 2), the analysis of the policy context (Chapter 3), the review of the HMM service system (Chapter 4) and the international literature review (Chapter 5). This framework of analysis provides an overview of the research questions and areas relating to HMM that require further attention in Australia. It also provides a framework for the research to be undertaken in the final stages of this project, which is briefly outlined in the final section of the chapter.

6.2 A framework for research

The international literature review in Chapter 5 classified HMM research under three broad headings: need and demand; service system issues; and outcomes. This classification provides a foundation for the framework of analysis displayed in Figure 1. The HMM system can be conceptualised as comprising consumer and population needs and demands, which are responded to by the HMM service system, in order to achieve client and policy outcomes. These processes take place within the wider ageing policy context. Each of these domains, and the relations between domains, need to be understood and provide a focus for research activities. HMM research is concerned with the extent and nature of need and demand, with the issues associated with the organisation of the service system and the delivery of services, and with outcomes both directly for clients and for policy. The framework emphasises the importance of linking the provision of HMM services to the ageing policy agenda across the health, community care and housing policy arenas. Each of the three main areas of research identified in this framework is briefly discussed below.

Figure 1: The HMM system and issues for research

Need and demand
- Number of older people with activity restrictions
- Nature of impairment and disability in later life
- Characteristics of living environments and home environment problems and hazards
- Perceptions of need for services
- Service access and utilisation
- Consumer acceptance and uptake of modifications
- Extent of under-reported need
- Factors affecting uptake and use including knowledge of services, cost, access to grants and loans, social acceptability, aesthetics, need for assistance, life disruption
- Behavioural change as an alternative to modification
- Socio-economic, age, gender, location factors

Ageing policies
Major Themes
- Fiscal Sustainability
- Positive Ageing
- Ageing in place

Policy goals and outcomes
Health
- Reduce levels of hospitalisation
- Reduce length of hospital stays
- Manage chronic conditions
- Prevent falls and other accidents
- Reduce morbidity and mortality
Community Care
- Delay entry to residential care
- Promote independence
- Promote social participation
- Support carers
Housing
- Assist with housing adjustments
- Manage demand for social housing
- Enhance identity and quality of life

Service system
- Links to policy goals and client outcomes
- Adequacy, organisation and equity of funding arrangements, including user charges
- Availability of the repertoire of service types
- Integration and coordination of services, especially between health, community care and housing
- The role of the market sector, and public-market sector relations
- Links between the health and community care industry and the building industry
- The identity and profile of the HMM sector, and the roles of specialist services and peak bodies
- The availability of qualified professionals and HMM specialists
- The role of volunteer programs and the informal sector
- Data systems to underpin research, policy and service provision
- The legislative framework including anti-discrimination legislation
- Impact of housing design, building and planning policies, and provisions for universal, accessible and adaptable design and building
- Consumer access and service quality

Client outcomes
- Increased safety in the home environment
- Reduction of falls and other accidents
- Greater capacity for independent living
- Restore access to all areas of the home
- Enhanced choice, identity and lifestyle
- Ability to pursue interests and activities
- Continued and extended social networks and social participation
- Enhancing the meaning of home
- Ability to 'stay put' and avoid undesired moves
- Improved physical and mental health
- Improved health for family members and carers
- Satisfaction with HMM services
- Confidence in managing building and maintenance contractors
- Ability to afford the cost of home modification and maintenance

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6.2.1 Need and demand

The international research on needs and demands for HMM services includes a range of studies that focus both on broad indicators of need within the older population and on more specific factors relating to HMM. While this literature has been criticised for being unsystematic, it provides a useful overview of the need and demand factors that need to be understood. The literature indicates that a comprehensive approach to understanding need and demand for HMM services in Australia might include development of data relating to the following factors:

→ The number of older people living in the community with activity restrictions, and the health conditions and disabilities associated with these restrictions

→ The characteristics of the homes and living environments of older people linked to 'housing-related disability', including the incidence of hazards

→ The number of older people who report need for assistance with repairs, home maintenance and gardening

→ The number of older people who report that their life would be improved through structural or non-structural modifications (and the types of modifications that would result in these improvements)

→ The specific types of home environment problems facing older people, as assessed by professionals (occupational therapists) and by older people themselves

→ The number of older people who report that they have access to home modification, repair and home maintenance services in their own community

→ The number of older people who receive home modification, repair and home maintenance services, the service system that they use, and service costs

→ The number of older people who need or want services but do not receive them, or who under report or under estimate their needs

→ The number of older people who have modified, or wish to modify, their homes for reasons of safety, independence, identity and lifestyle

→ Factors affecting uptake and use of services, including knowledge of services, perceptions of services, availability of services, characteristics of services (complexity, cost)

→ The socio-economic, age, gender household, tenure, and health status distribution of older people in all of the above categories, and their geographic distribution.

Current Australian research relating to need and demand for HMM services is reviewed in Chapter 5. There is very little research relating directly to HMM services, although broader data on levels of activity restriction and disability in later life are available. The international literature indicates a need for a range of studies that cover felt need, normative need, expressed need and comparative need for HMM in Australia. Population studies that examine need and demand for services at the aggregate level represent one set of approaches. Such studies might focus on the number and percentage of older people with activity limitations and use this as an indicator or current and likely service needs. More specifically, data on the types of impairments that older people develop and the specific difficulties older people experience in the home provide insight into the nature of HMM services required. Information on the number of older people who have used HMM services or who have undertaken modifications independently would also provides an indicator of expressed need. Another approach would be to undertake qualitative studies to deepen understanding of home environment issues and problems of Australians in later life.

Studies of the experiences of users of HMM services may be valuable in understanding issues of consumer uptake, acceptance and perception of HMM services, and obstacles to use of these services.

6.2.2 The service system

The international literature also provides guidance as to the HMM service system issues that need to be understood. Service system issues are shaped by contextual factors such as the policy and institutional arrangements within particular jurisdictions. However, the international literature reported in this chapter, combined with the review of the Australian HMM service system presented in Chapter 4, suggests the need for research and policy development relating to the following aspects of the Australian HMM service system:

→ The goals and objectives of HMM services, including both client-focused goals and system goals, and links to the objectives of the health, community care and housing systems

→ The adequacy, organisation and equity of funding arrangements for HMM including funding from the health, community care and housing systems, the role of user charges in the funding of HMM services, and overlaps with other funding arrangements such as assistive technologies

→ The availability and organisation of each of the service types that comprise the HMM system including structural modifications, non-structural modifications, repairs, and maintenance, and the provision of information and advice, assessment, case management, brokerage, project management, grants and loans, as well as direct service provision

→ The role of the market sector in HMM provision and financing, and relations between the public and market sectors

→ The service issues that are relevant for particular groups of older people including home owners, public and private tenants, residents in geographically remote areas, and older people not eligible for HACC and community care programs

→ Integration and coordination of HMM services, including the links and relations between the health, community care and housing systems

→ The nature and quality of relations between the health and community care industry and the building industry with respect to the delivery of HMM services

→ The development of the identity of the HMM sector, including such issues as the role of specialist HMM organisations and the need for peak bodies and advisory services

→ The availability and distribution of qualified professionals in the area of HMM, particularly occupational therapists and builders with HMM expertise, to provide expertise in need assessment and project management and in working collaboratively with the client

→ The role of volunteer programs and the informal sector generally in HMM provision

→ The development of data systems to underpin research, policy and service provision

→ The impact of the legislative framework on HMM including anti-discrimination legislation, building codes and regulations, planning policies and regulations, and provisions for universal, accessible and adaptable housing design.

The literature review confirms that very little research on HMM service delivery has been conducted in Australia (de Jonge et al. 2006). The service system review

reported in Chapter 4 provides a descriptive overview of the characteristics of HMM service delivery in Australia and highlights the limitations of our knowledge of how the service system operates. The service review identified a spread of responsibility for HMM services across multiple government agencies, and service providers operating at the interface of health, housing and community care systems. The research task is to build on this depiction of the HMM service system by developing studies that explore the adequacy, accessibility, appropriateness, organisation, and cost-effectiveness of HMM services provided to older people. The international literature review indicates a number of areas where further research may be fruitful.

6.2.3 Outcomes

The outcomes of HMM services can be classified into two broad groups: direct consumer outcomes and policy outcomes. Generally speaking, the international literature on the outcomes of HMM services is sparse and poorly developed in comparison to the literature on needs and demands, and service systems. Much of the outcomes research is fairly narrowly defined in terms of specific health outcomes. Nevertheless, the literature reviewed in this chapter, together with the discussion of the policy context and service system in chapters 3 and 4, and the perspectives on HMM in Chapter 2, provide a set of outcome factors that might underpin Australian research on HMM. These are:

Client outcomes

→ Increased safety in the home environment, and reduction of falls and other accidents

→ Greater capacity for independent living including capacity to undertake a wide range of tasks without external assistance

→ Restoration of access to all areas of the home

→ Enhancement of lifestyle choices, and ability to pursue interests and activities

→ Capacity to maintain and extend social networks and social participation

→ Enhancing the personal meaning of home

→ Ability to 'stay put' and avoid undesired moves

→ Improved physical and mental health

→ Improved health and lifestyle for family members and carers

→ Satisfaction with HMM services

→ Confidence in managing building and maintenance contractors

→ Ability to afford the cost of home maintenance and modification

Policy and system outcomes

→ Reduced levels of hospitalisation and reduced length of hospital stays

→ Enhanced capacity to manage individuals with chronic conditions in the community

→ Reduced incidence of falls and other accidents

→ Reduced rates of morbidity and mortality

→ Reduced or delayed entry to residential care

→ The promotion of independent living and social participation

→ Provision of support to carers

- → Assisting individuals to make appropriate housing adjustments, including the option of 'staying put'

- → Managing the demand for social housing by providing HMM as alternative forms of housing assistance

- → Enhancing the quality of life of the older population.

The only Australian outcome studies are the small number of evaluations of consumer satisfaction with HMM programs and the studies of environmental hazards and the incidence of falls reported in Chapter 5. The client outcome and policy outcome factors listed above and shown in Figure 1 indicate the kinds of studies that are needed to provide an evidence base in this area.

6.3 Research strategy

The Positioning Paper has identified a broad research agenda to provide an evidence base for HMM services in Australia. The purpose of the two studies to be undertaken in the second half of this study is to examine the three key research areas identified in Figure 1 (need and demand, service system, and client outcomes) through a more detailed analysis of the service system (the first study), and a qualitative study of the experience of a selection of consumers of HMM services (the second study). The broad research approach to be taken in these two studies was described in section 1.2.

The proposed service system study will result in a more detailed review of the HMM service system in Australia than that presented in chapter 4 of the Positioning Paper. It will build on the service system review already conducted by exploring key questions emerging from the literature and the service system review findings. It will take the findings to date to the next level, moving from description to issue based analysis, drawing on the perceptions of service providers in each state and territory about consumer demand, gaps in services and service delivery challenges. It will present a critical analysis of the Australian HMM service system and its place in ageing policy in Australia.

The consumer study will examine the perceptions of consumers about their need for HMM services, their experience of the service delivery system, and outcomes associated with the services they received. Semi-structured interviews with 30 older people who have received HMM services will be undertaken, with 10 interviews in Queensland, New South Wales and Victoria. These interviews will explore the perceptions and experiences of consumers and test these against the issues identified in the literature. This study will contribute to our understanding of the consumer experience of the HMM service system, and identify future research priorities.

6.4   Conclusions

The Positioning Paper provides a framework for a systematic approach to developing an evidence base for home maintenance and modification services in Australia, and hence a more systematic approach to policy development. The main contributions of the Positioning Paper are a clear and integrated conceptualisation of HMM as a policy and service field (Chapter 2), an analysis of the ageing policy context and its significance for HMM services (Chapter 3), a detailed description of the HMM service system in Australia (Chapter 4), and a detailed review of the international research literature (including the Australian literature) on HMM policies and services. These elements are brought together in the research framework summarised in Figure 1. The next stages of the project will build on this foundation in two ways. The service

system study will provide a critical analysis of the HMM service system based on focus groups and interviews with key informants, including analysis of the links between the service system and ageing policy goals and outcomes. The consumer study will provide an exploratory analysis of approximately 30 consumers of HMM services aimed at exploring many of the dimensions of need and demand, service delivery, and outcomes identified in the framework for research.

REFERENCES (STYLE: 'NON INDEXED HEADING 1')

ABS (1999) *Australian Social Trends 1999: Housing – Housing Assistance: Home Care, Hostels and Nursing Homes* Canberra: Australian Bureau of Statistics.

ABS (2003a) *Ageing in Australia*, Catalogue No. 2048.0. Canberra: ABS. Australian Bureau of Statistics.

ABS (2003b) *Population Projections Australia: 2002–2101*. Canberra: Australian Bureau of Statistics.

ABS (2003c) *Disability, Ageing and Carers, Australia. (4430.0)* Canberra: Australian Bureau of Statistics.

ABS (2005) *Australian Social Trends (4102.0)* Canberra: Australian Bureau of Statistics.

ABS (2006a) *Population Projections*, Australia, 2004–2101, Catalogue No. 3222.0. Canberra: Australian Bureau of Statistics.

ABS (2006b) *National Health Survey – a Summary of Results, 2004–2005,* Catalogue No. 4364.0. Canberra: Australian Bureau of Statistics

AIHW (2006) *Community Aged Care Packages in Australia 2004–05: A Statistical Overview,* (Aged Care Statistics Series no. 23) Canberra: AIHW.

AIHW: Angus, P., Bennet, S., Jenkins, A., Karmet, R., Neimeyer, S., and Rowland, F. (2002) *Older Australia at a glance*. Canberra: Australian Institute of Health and Welfare.

AIHW: Bricknell, S. (2003) *Disability: The Use of Aids and the Role of the Environment*. Canberra: Australian Institute of Health and Welfare.

AIHW: Gibson, D., Braun, P., and Angus, P. (2002) *Ageing in place: Before and After the 1997 Aged Care Reforms*. Canberra: Australian Institute of Health and Welfare.

AIHW: Gibson, D., Madden, R., and Stuer, A. (2003) *Australia's Welfare 2003*. Canberra: Australian Institute of Health and Welfare.

ALGA (2006) *Age-Friendly Built Environments: Opportunities for Local Government*. Canberra: Australian Local Government Association.

Andrews, G. and Carr, S. (1990) Health care for the aged. In H. Kendig and J. McCallum (eds) *Grey Policy: Australian Policies for an Ageing Society*. Sydney: Allen and Unwin.

Andrews, K. (2001) *National Strategy for an Ageing Australia*, Canberra: Commonwealth of Australia.

Andrews, K. (2002) *Ageing in Australia*, Report to the 2nd World Assembly on Ageing, Madrid, 8–12 April 2002. Canberra: Department of Health and Ageing.

Auriemma, D., Faust, S., Sibrian, K., and Jimenez, J. (1999) Home modifications for the elderly: Implications for the occupational therapist. *Physical and Occupational Therapy in Geriatrics, 16*(2/4), 135–144.

Australia (2002) *Intergenerational Report 2002–03*, 2002–03 Budget Paper No. 5. Canberra.

Australia (2007) *Intergenerational Report 2007*. Canberra. Accessed on 2 April 2007: www.treasury.gov.au/igr

Australia, AURDR (1994) *New Homes for Old*, AURDR Strategy Paper No. 1, Urban and Regional Development Review, Melbourne.

Australia, DOHA (1999) *Ageing Gracefully: An Overview of the Economic Implications of Australia's Ageing Population Profile*, Occasional Papers: New Series No. 10 (prepared by ACIL Consulting) Canberra: Commonwealth Department of Health and Aged Care.

Australia, DOHA (2003) *Home and Community Care Program Minimum Data Set 2002–2003 Annual Bulletin*. Department of Health and Ageing. Retrieved 28th September, 2005, from www.health.gov.au/internet/wcms/Publishing.nsf/

Australia, DOHA (2004) *Home and Community Care Program Minimum Data Set 2003–2004 Annual Bulletin*. Department of Health and Ageing. Retrieved 28th September, 2005, from www.health.gov.au/internet/wcms/Publishing.nsf/

Australia, DOHA (2006) *Home and Community Care Program Minimum Data Set 2004/05 Annual Bulletin. Canberra:* Department of Health and Ageing.

Australia, DOHAC (2000) *Commonwealth, state and territory Strategy on Healthy Ageing,* prepared by the Healthy Ageing Task Force, Commonwealth, states and territories of Australia. Canberra: Department of Health and Aged Care.

Australia, DVA (2004a) *DVA Facts HCS07 Veterans' Home Care Program.* www.dva.gov.au/health/homecare/vhcinfo.htm, accessed 9/1/2007*.

Australia, DVA (2004b) DVA Fact Sheets. www.dva.gov.au/factsheets/documents, accessed 4/4/2006*.

Australia, DVA (2006) *Department of Veterans' Affairs Annual Report 2005–06.* Canberra: Department of Veterans' Affairs.

Australia, DVA (2005) *Veterans' Home Care Annual Statistical Summary 2004/05.* Canberra: Department of Veterans' Affairs.

Australia, National Commission of Audit (1996) *Report to the Commonwealth Government.* Canberra: AGPS.

Australia, Parliament, House of Representatives (2005) *Inquiry into Long-Term Strategies to Address the Ageing of the Australian Population over the Next 40 Years*, Report of the House of Representatives Standing Committee on Health and Ageing. Canberra.

Australia, Productivity Commission (2005) *Economic Implications of an Ageing Australia*, Research Report. Canberra.

Awang, D. (2002) Older people and participation within disabled facilities grant *processes. British Journal of Occupational Therapy, 65*(6), 261–268.

Batavia, A. I., and Hammer, G. S. (1990) Toward the development of consumer-based criteria for the evaluation of assistive devices. *Journal of Rehabilitation Research and Development, 27*(4), 425–436.

Bartlett, H. and Peel, N (2005) Healthy ageing in the community. In G.J. Andrews and D.R. Phillips (Eds) *Ageing and Place: Perspectives, Policies, Practice* London: Routledge Press.

Bayer, A., and Harper, L. (2000) *Fixing to Stay: A National Survey on Housing and Home Modification Issues,* Washington, D.C: American Association of Retired Persons.

Beer, A., Faulkner, D. and Gabriel, M. (2006) *21st Century Housing Careers and Australia's Housing Future: Literature Review.* Research Paper. Melbourne: AHURI.

Bridge, C. (2005) Retrofitting, a response to lack of diversity: An analysis of community provider data, *National Housing Conference 2005.* Perth, Australia.

Bridge, C., Parsons, A., Quine, S., and Kendig, H. (2002) *Housing and Care for Older and Younger Adults with Disabilities: Positioning Paper.* Sydney Australia.: Australian Housing and Urban Research Institute.

Borowski, A. and Hugo, G. (1997) Demographic trends and policy implications. In A. Borowski, S. Encel and E. Ozanne (Eds.), *Ageing and Social Policy in Australia.* Melbourne: Cambridge University Press.

Borowski, A., Encel, S. and Ozanne, E. (1997) Introduction. In A. Borowski, S. Encel and E. Ozanne (Eds.), *Ageing and Social Policy in Australia.* Melbourne: Cambridge University Press.

Brooks, N. A. (1998) Models for understanding rehabilitation and assistive technology. In D. B. Gray, L. A. Quatrano and M. L. Lieberman (Eds.), *Designing and Using Assistive Technology: The Human Perspective* (pp. 3–11) Baltimore: Paul H. Brookes.

Carter, S. E., Campbell, E. M., Sanason-Fisher, R. W., and Gillespie, W. J. (2000) Accidents in older people living at home: a community-based study assessing prevalence, type, location and injuries. *Australian and New Zealand Journal of Public Health, 24*(6), 633–636.

Clapham, D. (2005) Housing pathways in later life. In D. Clapham (Ed.), *The Meaning of Housing* (pp. 213–237) Bristol, UK: The Policy Press.

Clare, R. and Tulpule, A. (1994) *Australia's Ageing Society*, EPAC Background Paper no. 37. Canberra: Economic Planning Advisory Council.

Clemson, L., and Martin, R. (1996) Usage and effectiveness of rail, bathing and toileting aids. *Occupational Therapy in Health Care, 9,* 41–58.

Clemson, L., Roland, M., and Cumming, R. (1992) Occupational Therapy assessment of potential hazards in the homes of elderly people: An inter-rater reliability study. *Australian Occupational Therapy Journal, 29*(39), 2.

Clemson, L., Roland, M., and Cumming, R. G. (1997) Types of hazards in the homes of elderly people. *Occupational Therapy Journal of Research, 17*(3), 200–213.

Close, J., Ellis, M., Hooper, R., Glucksman, E., Jackson, S., and Swift, C. (1999) Prevention of falls in the elderly trial (PROFET): a randomised controlled trial. *Lancet, 353*(9147), 93–97.

Clough, R., Leamy, M., Miller,V., and Bright,L. (2004) *Housing decisions in Later Life.* New York: Palgrave MacMillan.

Colombo, M., Vitali, S., Molla, G., Gioia, P., and Milani, M. (1998) The home environment modification program in the care of demented elderly: Some examples. *Archives of Gerontology and Geriatrics,* 27 suppl (6), 83–90.

Connell, B. R., and Wolf, S. L. (1997) Environmental and behavioural circumstances associated with falls at home among healthy elderly individuals. *Archives of Physical Medicine, 78*(February), 179–186.

Cowan, D., and Turner-Smith, A. (1999) *The Role of Assistive Technology in Alternative Models of Care for Older People.* Stationary Office, London: The Royal Commission on Long Term Care.

Cumming, R. G., Thomas, M., Szonyi, G., Salkeld, G., O' Neill, E., Westbury, C., et al. (1999) Home visits by an occupational therapist for assessment and modification of environmental hazards: a randomized trial of falls prevention. *Journal of American Geriatric Society, 47*(12), 1397–1402.

Cushman, L. A., and Scherer, M. (1996) Measuring the relationship of assistive technology use, functional status over time, and consumer–therapist perceptions of ATs. *Assistive Technology, 8*, 103–109.

Davison, B., Kendig, H., Stephens, F. and Merrill, V. (1993) *It's My Place: Older People Talk About Their Homes*, AGPS, Canberra.

Day, L., Fildes, B., Gordon, I., Fitzharris, M., Flamer, H., and Lord, S. (2002) Randomised factorial trial of falls prevention among older people living in their own homes. *BMJ Clinical Research ed, 325*(7356), 128.

de Jonge, D., Ainsworth, E., and Tanner, B. (2006) Home modifications down under. In W. C. Mann and H. A. (Eds.), *Promoting Independence for Older Persons with Disabilities: Selected Papers from the 2006 International Conference on Aging, Disability and Independence* (pp. 155–168) Washington DC: IOS Press.

Dewey, H. M., Thrift, A. G., Mihalopoulos, C., Carter, R., Macdonell, R. A., McNeil, J. J., et al. (2004) 'Out of pocket' costs to stroke patients during the first year after stroke – results from the North East Melbourne Stroke Incidence Study. *Journal of clinical neuroscience official journal of the Neurosurgical Society of Australasia, 11*(2), 134–137.

Duncan, R. (1998a) Blueprint for action: the National Home Modifications Action Coalition. *Technology and Disability, 8*(1–2), 85–89.

Duncan, R. (1998b) Funding, financing and other resources for home modifications. *Technology and Disability, 8*(1–2), 37–50.

Edgington, A. (1984) Survey of major adaptations. *British Journal of Occupational Therapy, 47*(2), 46–49.

Faulkner, D., and Bennett, K. (2002) *Linkages among Housing Assistance, Residential (Re) Location and the Use of Community Health and Social Care by Old–Old Adults: Shelter and Non-Shelter Implications for Housing Policy Development.* Sydney, Australia: Australian Housing and Urban Research Institute.

Filion, P., Wister, A., and Coblentz, E. J. (1992) Subjective dimensions of environmental adaptation among the elderly: A challenge to models of housing policy. *Journal of Housing for the Elderly, 10*, 3–27.

Fisher, A. G. (1998) Uniting practice and theory in an occupational framework. *The American Journal of Occupational Therapy, 52*(7), 509–520.

Frain, J. P., and Carr, P. H. (1996) Is the typical modern house designed for future adaptation for disabled older people? *Age and Ageing, 25*(5), 398.

Garber, S., and Gregorio, T. (1990) Upper extremity assistive devices: Assessment of use by spinal cord injured patients with quadriplegia. *American Journal of Occupational Therapy, 44*(2), 126–131.

Gibson, D. (1998) *Aged Care: Old Policies, New Problems.* Melbourne: Cambridge University Press.

Gilderbloom, J. I., and Markham, J. P. (1996) Housing modification needs of the disabled elderly: What really matters? *Environment and Behaviour, 28*(4), 512–535.

Gill, T. M., Robinson, J. T., Williams, C. S., and Tinetti, M. E. (1999) Mismatches between the home environment and physical capabilities among community living older persons. *American Geriatrics Society, 47*(1), 88–92.

Gill, T. M., Williams, C. S., Robinson, J. T., and Tinetti, M. E. (1999) A population-based study of environmental hazard in homes of older persons. *American Journal of Public Health, 89*(4), 553–554.

Gillespie, L. D., Gillespie, W. J., Cumming, R. G., Lamb, S. H., and Rower, B. H. (2001) *Interventions for preventing falls in the elderly.* Oxford: The Cochrane Library.

Gitlin, L. N. (2003) Conducting research on home environments: Lessons learned and new directions. *Gerontologist, 43*(5), 628–637.

Gitlin, L. N., and Corcoran, M. (2000) Making home safer: Environmental adaptations for people with dementia. *Alzheimer Care Q, 1*(1), 50–58.

Gitlin, L. N., Corcoran, M., Winter, L., Boyce, A., and Hauck, W. W. (2001) A randomized, controlled trial of a home environmental intervention: Effect on efficacy and upset in caregivers and on daily function of persons with dementia. *Gerontologist 41*(1–14).

Gitlin, L. N., Hauck, W. W., Loraine, W., Dennis, M., and Schulz, R. (2006) Effect of an in-home occupational and physical therapy intervention on reducing mortality in functionally vulnerable older people: Preliminary findings. *JAGS, 54*, 950–955.

Gitlin, L. N., Levine, R., and Geiger, C. (1993) Adaptive devices use by older adults with mixed disabilities. *Archives of Physical Medicine and Rehabilitation*, 149–152.

Gitlin, L. N., Luborsky, M. R., and Schemm, R. L. (1998) Emerging concerns of older stroke patients about assistive devices. *The Gerontologist, 38*(2), 169–180.

Gitlin, L. N., Miller, K. S., and Boyce, A. (1999) Bathroom modifications for frail elderly renters: Outcomes of a community-based program. *Technology and Disability, 10*(3), 141–149.

Gosselin, C., Robitaille, Y., Trickey, F., and Maltais, D. (1993) Factors predicting the implementation of home modifications among elderly people with loss of independence. *Physical and Occupational Therapy in Geriatrics, 12*(1), 15–27.

Greenwald, M., and Barrett, L. (2003) *These Four Walls...Americans 45+ Talk About Home and Community.* Washington, DC: American Association of Retired Persons

Hakim, E., and Bakeit, A. (1998) A study of the factors which influence the length of hospital stay of stroke patients. *Clinical Rehabilitation, 12*(2), 151.

Hanson, J. (2001) From 'special needs' to 'lifestyle choices': articulating the demand for 'third age' housing. In S. Peace and C. Holland (Eds.), *Inclusive Housing in an Ageing Society.* Bristol, UK: The Policy Press.

Harrison, M. (2004) Defining housing quality and environment: disability, standards and social factors: *Housing Studies*, 2004, 19, 5, Sept, 691–708.

Hawkins, R., and Stewart, S. (2002) Changing rooms: the impact of adaptations on the meaning of home for a disabled person and the role of occupational therapists in the process. *British Journal of Occupational Therapy, 65*(2), 81–87.

Healy, J. (1988) Home care before HACC Home and Community Care Program-: interstate comparisons. 1981 *Australian Journal on Ageing 7* (4), 31–35.

Healy, J. (1990) community services: Long-term care at home? In H. Kendig and J. McCallum (eds) *Grey Policy: Australian Policies for an Ageing Society.* Sydney: Allen and Unwin.

Heaton, J., and Bamford, C. (2001) Assessing the outcomes of equipment and adaptations : issues and approaches. *British Journal of Occupational Therapy, 64*(1), 346–356.

Heywood, F. (2001a) *The effectiveness of housing adaptations*. Retrieved 12/05/2004, 2004, from www.jrf.org.uk/knowledge/findings/housing/811.asp

Heywood, F. (2001b) *Money Well Spent: The Eeffectiveness and Value of Housing Adaptations*. Bristol: Policy Press.

Heywood, F. (2004a) The Health Outcomes of Housing Adaptations. *Disability and Society, 19*(2), 129–143.

Heywood, F. (2004b) Understanding needs: A starting point for quality. *Housing Studies, 19*(5), 709–726.

Heywood, F. (2005) Adaptation: Altering the house to restore the home. *Housing Studies, 20*(4), 531–547.

Heywood, F., Oldman, C., and Means, R. (2002) *Housing and Home in Later Life*. Buckingham: Open University Press.

Hill, M. (2006) *Social Policy in the Modern World*. Oxford: Blackwell.

Hocking, C. (1999) Function or feelings: Factors in abandonment of assistive devices. *Technology and Disability, 11*, 3–11.

Howe, A. (1992) *Housing for Older Australians*, National Housing Strategy Background Paper No. 8, AGPS, Canberra.

Howe, A. (1997) 'The aged care reform strategy: a decade of changing momentum and margins for reform'. In A Borowski, S Encel, and E Ozanne (eds.), *Ageing and Social Policy in Australia*, Cambridge University Press, Melbourne.

Howe, A. (2003) Housing an older Australia: More of the same or something different? Keynote Address, *Housing Futures in an Ageing Australia Conference*, 10th November, 2003. Melbourne, Australia.

Johnson, M. (2005) *Home Assist Secure Client Satisfaction Research*. Brisbane: Colmar Brunton Intelligence.

Jones, A, Bell, M, Tilse, C and Earl, G. (2004) *Rental Housing Provision for Lower-Income Older Australians*, Positioning Paper, AHURI, Melbourne.

Jones, A., Bell, M., Tilse, C. and Earl, G. (2007) *Rental Housing Provision for Lower Income Older Australians*, Final Report. Melbourne: AHURI.

Kendig, H. (1984) Housing careers, life cycle and residential mobility, implications for the housing market, *Urban Studies* 21(3), 271–283.

Kendig, H. (1990) Ageing, policy and politics. In H. Kendig and J. McCallum (Eds.), *Grey Policy: Australian Policies for an Ageing Society*. Sydney: Allen and Unwin.

Kendig, H. and McCallum, J. (1990) *Grey Policy: Australian Policies for an Ageing society.* Sydney: Allen and Unwin.

Klein, S. I., Rosage, L., and Shaw, G. (1999) The role of occupational therapists in home modification programs at an area agency on aging. *Physical and Occupational Therapy in Geriatrics, 16*(3–4), 19–37.

KPMG (2006) *Alternative Models for Home Modifications Discussion Paper*. Sydney: Department of Ageing Disability and Aged Care.

Krefting, L. H., and Krefting, D. V. (1991) Cultural influences on performance. In C. Christiansen and C. Baum (Eds.), *Occupational Therapy: Overcoming human performance deficits*. Thorofare, NJ: Slack.

Kutty, N. K. (1999) Demand for home modifications: A household production function approach. *Applied Economics, 31*(10), 1273.

Lansley, P., McCreadie, C., Tinker, A., Flanagan, S., Goodacre, K., and Turner-Smith, A. (2004) Adapting the homes of older people: A case study of costs and savings. *Building Research and Information, 32*(6), 468-483.

Law, M., Baptiste, S., Carswell, A., A, M. M., Polatajko, H., and Pollock, N. (1994) Canadian Occupational Performance Measure (Version 2nd Edition) Toronto: Canadian, Association of Occupational Therapy.

Lawton, M. P., and Nahemow, L. (1973) Ecology and the aging process. In C. Eisdorfer and M. P. Lawton (Eds.), *Psychology of Adult Development and Aging*. Washington DC: American Psychological Association.

Liebig, P. S., and Sheets, D. J. (1998) Ageism, disability and access to environmental interventions. *Technology and Disability, 8*(1), 69–84.

Louie, J. (1999) *The Housing Modifications for Disabled Elderly Households*: Joint Centre for Housing Studies, Harvard University.

Lund, M. L., and Nygard, L. (2004) Occupational Life in the home environment: The experiences of people with disabilities. *Canadian Journal of Occupational Therapy, 71*(4), 243–251.

Lysack, C. L., and Neufeld, S. (2003) Occupational therapist home evaluations: inequalities, but doing the best we can? *American Journal of Occupational Therapy, 57*(4), 369–379.

Mackenzie, L., Byles, J., and Higginbotham, N. (2002) A prospective community-based study of falls among older people in Australia: Frequency, circumstances, and consequences. *OTJR Occupation Participation and Health, 22*(4), 143–152.

Mann, W. C. (1997) Aging and assistive technology use. *Technology and Disability, 7*(1), 63–75.

Mann, W. C., and Lane, J. P. (1995) *Assistive Technology for Persons with Disabilities* (2nd ed.) Bethesda, Maryland: The American Occupational Therapy Association.

Mann, W. C., and Tomita, M. (1998) Perspectives on assistive devices among eldrely persons with disabilities. *Technology and Disabilities, 9*, 119–148.

Mann, W. C., Hurren, D., and Tomita, M. (1993) Comparison of assistive device use and needs of home-based older persons with different impairments. *The American Journal of Occupational Therapy, 47*(11), 980–987.

Mann, W. C., Hurren, D., Tomita, M., Bengali, M., and Steinfeld, E. (1994) Environmental problems in homes of elders with disabilities. *The Occupational Therapy Journal of Research, 14*(3), 191–211.

Mann, W. C., Hurren, D., Tomita, M., and Charvat, B. (1996) Use of assistive devices for bathing by elderly who are not institutionalized *Occupational Therapy Journal of Research, 16*, 261–286.

Mann, W. C., Ottenbacher, K. J., Fraas, L., Tomita, M., and Granger, C. V. (1999) Effectiveness of assistive technology and environmental interventions in maintaining and reducing home care costs for the frail elderly: A randomized control trial. *Archives of Family Medicine, 8*(May/June), 210–217.

Mathieson, K., Kronenfeld, J., and Keith, V. (2002) Maintaining functional independence in elderly adults: the roles of health status and financial resources in predicting home modifications and use of mobility equipment. *Gerontologist [NLM – MEDLINE], 42*(1), 24.

McCallum, J. (1997) Health and ageing: The last phase of epidemiological transition . In A Borowski, S Encel, and E Ozanne (eds.), *Ageing and Social Policy in Australia*, Cambridge University Press, Melbourne.

McCreadie, C., and Tinker, A. (2005) The Acceptability of Assistance Technology to Older People. *Ageing and Society, 25*(1), 91–110.

McDonald, P. and Kippen, R. (1999) Ageing: The social and demographic dimensions. In Productivity Commission and Institute of Applied Economic and Social Research, *Policy Implications of the Ageing of Australia's Population*, Conference Proceedings. Canberra: AusInfo.

McLean, D., and Lord, S. (1996) Falling in older people at home: transfer limitations and environmental risk factors. *Australian Occupational Therapy Journal, 43*(1), 13–18.

Messecar, D. C., Archbold, P. G., Stewart, B. J., and Kirschling, J. (2002) Home environmental modification strategies used by caregivers of elders. *Research in Nursing and Health, 25*, 357–370.

National Resource Center On Supportive Housing and Home Modification. (unknown) *Home Modification*. Retrieved 18th December, 2006, from http://www.homemods.org/pages/various/homemods.htm

New South Wales, ADD (1998) *NSW Healthy Ageing Framework 1998–2003*, Sydney: Ageing and Disability Department.

New South Wales, DADAC (2006) *New South Wales HACC Program Annual Plan 2006–07*. Sydney: Department of Ageing, Disability and Home Care.

New South Wales, DOH (2006) *Annual Report 2005–2006.* Sydney: Department of Housing*.

Newman, S. (2003) The living conditions of elderly Americans. *The Gerontologist, 43*(1), 99–109.

Nikolaus, T., and Bach, M. (2003) Preventing falls in community-dwelling frail older people using a home intervention team (HIT): results from the randomized Falls-HIT trial. *Journal of the American Geriatrics Society, 51*(3), 300–305.

Nocon, A., and Pleace, N. (1997) 'Until disabled people get consulted...': the role of occupational therapy in meeting housing needs. *British Journal of Occupational Therapy, 60*(3), 115–122.

Northern Territory, DHCS (2001) *Annual Report 2000 – 2001. Darwin:* Department of Health and Community Services.

Northern Territory, DHCS (2006) *Disability Services in the Northern Territory: Background Paper.* Darwin: Department of Health and Community Services.

Ohta, R. J., and Ohta, B. M. (1997) The elderly consumer's decision to accept or reject home adaptations: issues and perspectives. In S. Lanspery and J. Hyde (Eds.), *Staying Put: Adapting the Places Instead of the People.* (pp. 79–90) Amityville, NY.: Baywood Publishing Company Inc.

Oldman, C., and Beresford, B. (2000) Home sick home: using housing experiences of disabled children to suggest a new theoretical framework. *Housing Studies, 15*(3), 429–442.

Olsberg, D. and Winters, M. (2005) *Ageing-in-Place? Intergenerational and Intra-Familial Housing Transfers and Shifts in Later Life*, Final Report, Melbourne.

Ozanne, E. (2000) Constructing and reconstructing old age: The evolution of aged policy in Australia. In A. McMahon, J. Thompson and C. Williams (Eds) *Understanding the Australian Welfare State: Key Documents and Themes.* Croydon: Tertiary Press.

Parker, J., Allen, C., Franklin, B., and Clapham, D. (1998) *The Right Home: Assessing Housing Needs in Community Care.* Cardiff: Centre for Housing Management and Development, University of Wales.

Peace, S. M., and Holland, C. (2001) *Inclusive Housing in an Ageing Society: Innovative Approaches.* Bristol: Policy Press.

Peel, N., Steinberg, M., and Williams, G. (2000) Home safety assessment in the prevention of falls among older people. *Australian and New Zealand journal of public health, 24*(5), 536–539.

Pfeffer, M. and Green D. (1997) The making of policies for the aged. In A Borowski, S Encel, and E Ozanne (eds.), *Ageing and Social Policy in Australia*, Cambridge University Press, Melbourne.

Phillips, B. (1993) Technology abandonment from the consumer point of view. *NARIC Quarterly, 3*(2,3), 4–91.

Phillips, B. and Zhao, H. (1993) Predictors of assistive technology abandonment. *Assistive Technology, 5*, 36–45.

Phillips, D.R., Siu, O., Yeh, A. G. O. and Cheng, K.H. (2005) Ageing and the urban environment. In G.J. Andrews and D.R. Phillips (Eds) *Ageing and Place: Perspectives, Policy Practice*, London: Routledge Press.

Phillipson, C. (1998) *Reconstructing Old Age: New Agendas in Social Theory and Practice.* London: Sage Publications Inc.

Picking, C., and Pain, H. (2003) Home adaptations: User perspectives on the role of professionals. *British Journal of Occupational Therapy, 66*(1), 2–8.

Powell, L. (1992) Successful ageing, our common future? Australian Journal on Ageing, 11(1), 36-41.

Pynoos, J. (1993) Toward a national policy on home modification. *Technology and Disability, 2*(4), 1–8.

Pynoos, J. (2001) *Meeting the needs of older people to age in place: Findings and recommendations for action.* San Diego, CA: The National Resource Centre for Supportive Housing and Home Modification.

Pynoos, J. (2004) On the forefront of the ever-changing field of home modification. *Rehab management, 17*(3), 34–35, 50.

Pynoos, J., and Nishita, C. M. (2003) The cost and financing of home modifications in the United States. *Journal of Disability Policy Studies, 14*(2), 68.

Pynoos, J., and Regnier, V. (1997) Chapter 3: Design Directives in Home Adaptation. In S. Lanspery and J. Hyde (Eds.), *Staying Put: Adapting the Places Instead of the People.* Amityville, New York: Baywood Publishing Company, Inc.

Pynoos, J., Liebig, P., Alley, D., and Nishita, C. M. (2004) Homes of choice: Towards more effective linkages between housing and services. *Journal of Housing for the Elderly, 18*(3–4), 5–39.

Pynoos, J., Liebig, P., Overton, J., and Calvert, E. (1997) The delivery of home modification and repair services. In S. Lanspery and J. Hyde (Eds.), *Staying Put: Adapting the Places Instead of the People* (pp. 171–391) Amityvile, New York: Baywood.

Pynoos, J., Tabbarah, M., Angelelli, J., and Demiere, M. (1998) Improving the delivery of home modifications. *Technology and Disability, 8*, 3–14.

Queensland, Department of Families (2003) *Queensland 2020: a State for All Ages*, Department of Families, Brisbane.

Queensland, DOH (2002) *Home Assist Secure Review,* Brisbane: Department of Housing.

Ranzin, R and Grbich, C. (2001) Qualitative aspects of productive ageing, *Australasian Journal of Ageing,* 20(2), 62–66.

Ranzin, R., Patrickson., M. Carson, E. and Le Sueur, E. (2004) Independence and self-provision in old age: How realistic are these goals? *Australasian Journal on Ageing*, 23 (3), 120–124.

Redfoot, D. L., and Kochera, A. (2004) Targeting services to those most at risk: characteristics of residents in federally subsidized housing. *Journal of Housing for the Elderly, 18*(3–4), 137–163.

Renforth, P., Yapa, R. S., and Forster, D. P. (2004) Occupational therapy predischarge home visits: A study from a community hospital. *British Journal of Occupational Therapy, 67*(11), 488–494.

Rogers, J. C., and Holm, M. B. (1992) Assistive technology device use in patients with rheumatic disease: A literature review. *American Journal of Occupational Therapy, 46*(2), 120–127.

Rogers, M. E., Rogers, N. L., Takeshima, N., and Mohammod, M. I. (2004) Reducing the risk for falls in the homes of older adults. *Journal of Housing for the Elderly, 18*(2), 29–39.

Rojo Perez, F., Fernandez-Mayoralas, G., Pozo Rivera, F. E., and Rojo Abuin, J. M. (2001) Ageing in place: predictors of the residential satisfaction of elderly: *Social Indicators Research*, 54, 2, May, 173–208.

Rousseau, J., Potvin, L., Dutil, E., and Falta, P. (2001a) Understanding the issue of home adaptation: Searching for a conceptual framework. *Occupational Therapy in Health Care, 14*(1), 27–37.

Rousseau, J., Potvin, L., Dutil, E., and Falta, P. (2001b) A critical review of assessment tools related to home adaptation issues. *Occupational Therapy in Health Care, 14*(3–4), 93–104.

Rousseau, J., Potvin, L., Dutil, E., and Falta, P. (2002) Model of competence: a conceptual framework for understanding the person–environment interaction for persons with motor disabilities. *Occupational Therapy in Health Care, 16*(1), 15–36.

Rubenstein, L. Z., Kenny, R. A., Eccles, M., Martin, F., and Tinetti, M. E. (2002) Evidence-based guideline for falls prevention: Summary of the bi-national panel. *Generations*, 26(4), 38–41.

Sanford, J. A., Echt, K., and Malassigne, P. (1999) An E for ADAAG: The case for ADA accessibility guidelines for the elderly based on three studies of toilet transfer. *Physical and Occupational Therapy in Geriatrics, 16*, 3–4.

Sanford, J., Follette, S. M., and Jones, M. L. (1997) An analysis of the effects of ramp slope on people with mobility impairments. *Assistive Technology, 9*, 22–33.

Sapey, B. (1995) Disabling homes: A study of the housing needs of disabled people in Cornwall. *Disability and Society, 10*(1), 71–85.

Scherer, M. J. (1998) The impact of assistive technology on the lives of people with disabilities. In D. B. Gray, L. A. Quatrano and M. L. Lieberman (Eds.), *Designing and Using Assistive Technology: The Human Perspective* (pp. 99–115) Baltimore: Paul H. Brookes.

Scherer, M. J. (2005) *Living in a State of Stuck: How Technology Impacts the Lives of People with Disabilities* (2nd ed.) Cambridge, MA: Brookline Books.

Silverstein, N. M., and Hyde, J. (1997) The importance of a consumer perspective in home adaptation of Alzheimer's households. In S. Lanspery and J. Hyde (Eds.), *Staying Put: Adapting Places Instead of People* (Vol. 2, pp. 58–68) Amityville, New York: Baywood Publishing Co.

Silverstein, N. M., Hyde, J., and Ohta, R. (1993) Home adaptation for Alzheimer's households: factors related to implementation and outcomes of recommendations. *Technology and Disability, 2*(4), 58–68.

Smith, E. (2003) *Visitability Defined 2003*. Retrieved 21st March, 2007, from www.concretechange.org/Definition_of_Visitability.htm

Smith, R. O. (1996) Measuring the outcomes of assistive technology: Challenge and innovation. *Assistive Technology, 8*, 71–81.

Smith, R., Quine, S., Anderson, J., and Black, K. (2002) Assistive devices: self-reported use by older people in Victoria. *Australian Health Review, 25*(4), 169–177.

Stark, S. (2003) Home modifications that enable occupational performance. In L. Letts, P. Rigby and D. Stewart (Eds.), *Using Environments to Enable Occupational Performance* (pp. 219–234) Thorofare, NJ: Slack.

Steinberg, M., Cartwright, C., Peel, N., and Williams, G. (2000) A sustainable programme to prevent falls and near falls in community dwelling older people: results of a randomised trial. *Journal of Epidemiology and Community Health, 54*(3), 227–232.

Steinfeld, E., Levine, D., and Shea, S. (1998) Home modifications and the fair housing law. *Technology and Disability, 8*, 15–35.

Steinfeld, E., and Shea, S. (1993) Enabling home environments: identifying barriers to independence. *Technology and Disability, 2*(4), 69–79.

Stevens, M., Holman, C. D., Bennett, N., and de Klerk, N. (2001) Preventing falls in older people: Outcome evaluation of a randomized controlled trial. *Journal of the American Geriatrics Society, 49*(11), 1448–1455.

Steward, B. (2000) Living space: The changing meaning of home. *British Journal of Occupational Therapy, 63*(3), 105 –110.

Stone, J. H. (1998) Housing for older persons: An international overview. *Technology and Disability, 8*(1–2), 91–97.

Struyk, R. (1987) Housing adaptations – needs and practices. In V. Regnier and J. Pynoos (Eds.), *Housing the Aged: Design Directives and Policy Considerations.* (pp. 259–275) New York: Elsevier.

Tabbarah, M., Silverstein, M., and Seeman, T. (2000) A health and demographic profile of noninstitutionalized older Americans residing in environments with home modifications. *Journal of aging and health, 12*(2), 204–228.

Tanner, B. (2005) The impact of home modifications on the meaning of home for older people living in the community. Masters Thesis: The University of Queensland, St Lucia, Australia.

Tanner, B., Tilse, C., and de Jonge, D. (under review) Restoring and sustaining home: The impact of home modifications on the meaning of home for older people. *The Journal for Housing for the Elderly.*

Tasmania, Department of Health and Human Services (2005) *Tasmanian Annual Plan Home and Community Care Program 2005–06.* Hobart: DHHS.

Tasmania, DHHS (1999) *Tasmanian Plan for Positive Ageing 2000–2005*, Department of Health and Human Services, Hobart.

Tasmania, DP&C (2005) *Tasmanian Plan for Positive Ageing 2000–2005, Final Report.* Hobart: Department of Premier and Cabinet.

Thompson, P. G. (1996) Preventing falls in the elderly at home: a community-based program. *Medical Journal of Australia, 164*(9), 530–532.

Tinker, A. (1999) *Ageing in Place: What Can We Learn From Each Other.* Paper presented at the Sixth F. Oswald Barnett Oration, Melbourne.

Tinker, A., and Lansley, P. (2005) Introducing assistive technology into the existing homes of older people: Feasibility, acceptability, costs and outcomes. *Journal of Telemedicine and Telecare, 1 supplimentary*, 1–3.

Tinker, A. McCreadie, C. and Stuchbury, S. (2004) *Introducing Assistive Technology into the Existing Homes of Older People: Feasibility, Acceptability, Costs and Outcomes.* London: Institute of Gerontology, King's College London and the University of Reading.

Trickey, F., Maltais, D., Gosslein, C., and Robitaille, Y. (1993) Adapting older persons' homes to promote independence. *Physical and Occupational Therapy in Geriatrics, 12*(1), 1–14.

UK, Department for Communities and Local Government. (2006) *Delivering Housing Adaptations for Disabled People: A Good Practice Guide.* London: Department for Communities and Local Government.

Victoria, DHS (2003) *Making this The Age To Be in Victoria: A Forward Agenda for Senior Victorians.* Melbourne: Department of Human Services.

Western Australia, Department for Community Development 2004, *Generations Together: a Guide to the Western Australian Active Ageing Strategy*, Government of Western Australia, Perth.

Wielandt, T., and Strong, J. (2000) Compliance with prescribed adaptive equipment: A literature review. *British Journal of Occupational Therapy, 63*(2), 65–75.

Williams, J., Lyons, B., and Rowland, D. (1997) Unmet long-term care needs of elderly people in the community: A review of the literature. *Home Health Care Services Quarterly, 16*(1/2), 93–119.

Wister, A. V. (1989) Environmental adaptation by persons in later life. *Research on Aging, 11*, 267–291.

World Health Organisation (2001) *The International Classification of Function, Disability and Health*. Geneva: World Health Organisation.

Wylde, M. A. (1998) Consumer knowledge of home modifications. *Technology and Disability, 8*(1/2), 51–68.

APPENDICES

Appendix 1: Primary data sources for the service system review

ACT Health. *Health Services: Independent Living Centres.* www.health.act.gov.au, accessed 23/11/2006.

ACT Office of Ageing. *Housing.* www.ageing.act.gov.au/olderperson/oa-opp-housing, accessed 23/11/2006.

ACT Office of Ageing. *Home Care.* www.ageing.act.gov.au/olderperson/oa-opp-homecare, accessed 23/11/2006.

ALGA (2006) *Age-Friendly Built Environments: Opportunities for Local Government.* Canberra: Australian Local Government Association.

Australia, Department of Health and Ageing. *About Community Aged Care Packages: Home-based care:* www.health.gov.au, accessed 2/4/2007.

Australia, Department of Health and Ageing (2002) *National HACC Program Guidelines.*

Australia, DVA. *Aged and Community Care - Home Front Information.* www.dva.gov.au/health/homefront/intro.htm, accessed 4/4/2006.

Australia, Department of Health and Ageing (n.d.) *Community Care for Older People and people with Disabilities: Explaining the Home and Community Care Program.*

Commonwealth Carelink Centre. www.9.health.gov.au/ccsd.

Handyhelp www.handyhelp.org.au, accessed 23/11/2006.

HMM Information Clearing House, http://plan.arch.usyd.edu.au/hmm/.

Homestart. *Carers Loan.* www.homestart.com.au/Home_per_cent20Loans/carers.asp, accessed 23/1/2006.

Independent Living Centre of Western Australia. www.ilc.com.au, accessed 23/11/2006.

Keystart. *Home Access Loans.* www.keystart.com.au/key/access.htm, accessed 3/4/2006.

KPMG (2006) *Review of Disability Services in the Northern Territory.* Department of health and Human services, Northern Territory.

KPMG (2006) *Report on existing HACC service models in NSW Home Modifications and Maintenance.* Department of Ageing, Disability, and Home Care, NSW.

Metropolitan Domiciliary Care. www.domcare.sa.gov.au, accessed 11/1/2007.

Northern Territory, Department of Health and Community Services (2006) *Home and Community Care Program* www.nt.gov.au/health/comm_svs/, accessed 23/11/2006.

Northern Territory, Department of Health and Community Services (2001 and subsequent) *Annual Report 2000-01.*

Northern Territory, Department of Health and Community Services (2003) *HACC Pack 2003.* Northern Territory Government.

Northern Territory, Department of Health and Community Services (2006) *Disability Services in the Northern Territory: Background Paper.*

Northern Territory, Department of Health and Community Services. *Home and Community Care Program.* www.nt.gov.au/health/comm_svs/aged_dis_ccs/, *accessed 23/11/2006.*

NSW, Department of Ageing, Disability and Home Care (2006) *New South Wales HACC Program Annual Plan 2006-07.*

NSW, Department of Ageing, Disability and Home Care. *Home and Community Care Program,* accessed 23/11/2006*.*

NSW, Department of Housing. *Modifications* www.housing.nsw.gov.au/, accessed 23/11/2006.

Queensland, Department of Health (2007). *Transition Care Program* www.health.qld.gov.au/townsville/Services/TransCare.asp, accessed 2/4/2007.

Queensland, Department of Health. *Home and Community Care Program* http://www.health.qld.gov.au/hacc/, accessed 2/4/2007.

Queensland, Department of Housing (2004). *Queensland Home and Community Care (HACC) Home Modification Service Program Specifications.*

Queensland, Department of Housing. (2004). *Home Assist Secure Program Specifications.* Queensland Government.

Queensland, Department of Housing (2005). *Annual Report 2004/05.* Queensland Government.

Queensland, Department of Housing. *Community Programs and Funding* www.housing.gov.au/programs/ , accessed 3/4/2006.

Queensland Department of Housing. *Home Loans from the Department of Housing.* http://www.housing.qld.gov.au/loans/home/loans/index.htm, accessed 2/4/2007*.*

Staysafe. www.staysafe.nt.gov.au. accessed 27/3/200.

South Australia, Department of Families and Communities (2003) *ILEP Policy Manual.* South Australian Government.

South Australia, Department of Families and Communities. *Independent Living Equipment Program.* www.familiesandcommunities.sa.gov.au/, accessed 11/1/2007*.*

South Australia, Department of Families and Communities. *Independent Living Centre* www.familiesandcommunities.sa.gov.au/, accessed 23/11/2006*.*

South Australia, Department of Families and Communities. *Home and Community Care.* www.familiesandcommunities.sa.gov.au/, accessed 23/11/2006*.*

South Australia, Department of Families and Communities (2006) *Modifying your Housing SA Property.*

TADWA, www.technicalaidwa, accessed 23/11/2006.

Tasmania, Department Health and Human Services. Independent Living Centres; Home Maintenance services. Tasmania. www.tas.gov.au/services, accessed 6/11/2006.

Tasmania, Department Health and Human Services (2003) *Home and Community Care (HACC) Program in Tasmania: Guidelines for Home Modifications.*

Tasmania, Department Health and Human Services (2004) *Home and Community Care (HACC) Program in Tasmania: Guidelines for Home and Garden Maintenance.*

Tasmania, Department Health and Human Services (2005) *Tasmanian Annual Plan Home and Community Care Program 2005-06.*

Tasmania, Department Health and Human Services (2006) *Disability Services Sector Newsletter.* www.dhhs.gov.au.

Victoria, Department of Health. *Home and Community Care.* www.health.vic.gov.au/hacc, accessed 23/11/2006.

Victoria, Department of Human Services (2002) *Victorian Aids and Equipment program (AandEP) Guidelines.* Victoria.

Victoria, Department of Human Services (2003) *Victorian HACC Program Manual.*

Victoria, Department of Human Services (2005) Home and Community Care Program: Victorian Annual Program Plan 2005-2006.

Victoria, Department of Human Services (2006) *Victorian HACC Program Active Service Model Project.*

Victoria, Department of Human Services. *Home Finance Publications.* www.dhs.vic.gov.au/ooh/, accessed 3/4/2006.

Victoria, Department of Human Services. *Aids and Equipment Program* www.dhs.gov.au/ds/disability site.nsf/, accessed 23/11/2006.

Victoria, Department of Human Services. *Home Renovations Service. www.*dhs.vic.gov.au/OOH/, accessed 31/1/2007.

Western Australia, Department of Health (2006). *HACC Directory of Services* Government of Western Australia.

Western Australia, Department of Health *Home and Community Care in Western Australia.* www.health.wa.gov.au/hacc, accessed 23/11/2006.

Western Australia, Department of Housing and Works. *People with Disabilities.* www.dhw.wa.gov.au/404_452.asp, accessed 23/11/2006.

Western Australia, Disability Services Commission. *Modifications.* www.dsc.wa.gov.au/2/205/67/modifications.pm, accessed 23/11/2006.

Appendix 2: Individuals contacted for the service system review

Margo Warren and Jim Paltoglou, HACC Program Managers, Queensland Health.

Renee McCahon and Frances Ingram, Senior Program Management Officers, Queensland Department of Housing.

John O'Shea and Dianne Phillips, Portfolio Asset Management Branch, Queensland Department of Housing.

Marion Baker, Independent Living Centre, ACT.

Margaret Bryan, Occupational Therapist and Robyn Lloyd, Disability Coordinator, Department of Housing and Works, Western Australia.

Stacey Sheppard-Smith, Executive Officer, NSW Home Modification and Maintenance Services State Council.

Peter Roberts, Assistant Director, RAP and HomeFront, Department of Veterans' Affairs.

Judy Morrison, Department of Veterans' Affairs.

AHURI Research Centres

Queensland Research Centre
RMIT-NATSEM Research Centre
Southern Research Centre
Swinburne-Monash Research Centre
Sydney Research Centre
UNSW-UWS Research Centre
Western Australia Research Centre