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**Australian Institute of
Health and Welfare**

Patterns in use of aged care 2002–03 to 2010–11

DATA LINKAGE SERIES NO. 18



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*Authoritative information and statistics
to promote better health and wellbeing*

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Number 18

Patterns in use of aged care

2002–03 to 2010–11

Australian Institute of Health and Welfare
Canberra

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Abbreviations

A_PID	administrative person identifier
ABS	Australian Bureau of Statistics
ACAP	Aged Care Assessment Program
ACAT	Aged Care Assessment Team (for ACAP)
ACCMIS	Aged and Community Care Management Information System
ACCR	Aged Care Client Record
ADL	activity of daily living
AIHW	Australian Institute of Health and Welfare
C_CID	collection client identifier
CACP	Community Aged Care Package
CBV	cerebrovascular disease
DOB	date of birth
EACH	Extended Aged Care at Home
EACHD	Extended Aged Care at Home Dementia
EP	English proficiency
FMR	false match rate (estimated)
HACC	Home and Community Care
IADL	instrumental activity of daily living
ID	identifier for ACAT
KBL	key-based linkage
m_tf	estimated marginal trade-off between additional true and additional false matches for links established using the match key when compared with matches made by a slightly more precise key
max_FMR	maximum FMR for determining number of versions that can be compared in KBL
MDS	minimum data set
N	number
NDI	National Death Index
P_PID	project-specific person identifier

PIAC	Pathways in Aged Care
PPV	positive predictive value
PRAC	permanent residential aged care (used in tables only)
RAC	residential aged care
RAC+	includes RAC (permanent and respite), EACH, EACHD and TCP
RRC	residential respite care; that is, respite RAC (used in tables only)
SLK	statistical linkage key
SLK-581	statistical linkage key, comprising 5 letters of name, 8 digits of date of birth and sex
TCP	Transition Care Program
V	version
VHC	Veterans' Home Care

Symbols

–	nil or rounded to zero
..	not applicable
n.a.	not available
n.p.	not publishable because of small numbers, confidentiality or other concerns about the quality of the data

Summary

Since the 1990s, there have been changes in the focus and provision of aged care services. Of interest to policy planners and service providers is whether these changes have affected the way that people use care programs to meet their needs. This report investigates such questions using the extended Pathways in Aged Care (PIAC) database. This database, developed by the Australian Institute of Health and Welfare (AIHW), covers aged care assessments and use of 7 aged care service programs from 1 July 2002 to 30 June 2011, as well as deaths. It allows for person-based analyses. Programs included in the database are: residential aged care (RAC), aged care package programs, the Transition Care Program (TCP), Home and Community Care (HACC), Veterans' Home Care (VHC) and the Aged Care Assessment Program (ACAP).

The report examines the use of aged care programs by people aged 65 and over between 2002–03 and 2010–11.

People using services

- Over the study period, the number of people aged 65 and over using aged care non-assessment services in a year increased by more than one-third, from 642,000 to 874,000.
- The growth in client numbers was greater than the growth in the population aged 65 and over and did not result just from relative increases in the numbers of very old people. Much of the increase was due to greater use of community care programs.
- On an exemplar day, over the study period between 1 in 6 and 1 in 5 people were using aged care services. Around 5% of the population aged 65 and over were in permanent RAC.
- Among people aged 85 and over, on 30 September 2010, 58% were accessing care services. Almost one-quarter of this very old age group were in permanent RAC.

Programs used

- Over the study period, the proportion of people using an aged care service in the 12 months before admission into permanent RAC increased. In particular, the use of community care in conjunction with respite RAC and/or transition care before admission into permanent RAC increased, while use of just community care decreased.
- The use of aged care services before dying is increasing. Seventy per cent of people who died in 2003–04 used a service in their last year of life, compared with almost 75% in 2010–11. In 2010–11, just over two-thirds of the women and half of the men aged 85 and over who died used permanent RAC in their last year of life.

Take-up of care after assessment

- Approvals obtained through ACAP are required to access RAC, care packages and TCP. However, due to a variety of factors, an approval to use a program does not mean that the service will be used. For example, 49% of the people with an approval for permanent RAC from their first ACAP assessment in 2009–10 used such care in the next 12 months.
- Nearly 1 in 6 people do not get an approval to use any of RAC, a care package or TCP at their first assessment under ACAP. However, these people may still access HACC or VHC. Two-fifths of assessed people without an approval from their first assessment in 2009–10 used HACC or VHC within 12 months.
- Program use within 12 months of an initial assessment varies with a client's age, sex, carer status, housing tenure and health status.

1 Introduction

The average age of the Australian population has been increasing since the 1970s (see AIHW 2013a). More specifically, between June 2002 and June 2011, the number of people aged 65 and over increased by over one-quarter, from 2.5 million to 3.1 million (Table A1.1). At the same time, this age group accounted for a growing proportion of the total population, rising from 12.6% to 13.8% of all Australians. Furthermore, within the older population, the proportion who were very old – aged 85 and over – increased from 11.1% of people aged 65 and over in 2002 to 13.1% in 2011. An increase was seen for both men and women, and by June 2011 nearly 10% of older men and 16% of older women were very old.

The increasing numbers of old and, in particular, very old people must necessarily influence the provision of aged care. Social factors can also have an effect. For example, although permanent care in a residential care facility remains a key service for many, greater emphasis on provision of home-based supports towards the end of the last century (AIHW 1993) led to the introduction of a range of community aged care programs, such as the aged care packages. This increasing trend in home-based care was accompanied by the emergence of respite care as an important area of service provision, particularly to support carers (AIHW 2003).

Although there has been a proliferation of programs in the last 30 or so years (AIHW 2011c), between 2001–02 and 2005–06, 4 key programs accounted for around 85% of government expenditure on services delivering community aged care (excluding assessment services). These were Home and Community Care (HACC), Veterans' Home Care (VHC), Community Aged Care Packages (CACPs), and EACH packages (Extended Aged Care at Home), including EACH Dementia (EACHD) (AIHW 2007).

The complexity of the aged care system is compounded by different programs having different access processes. More specifically, an approval by an Aged Care Assessment Team (ACAT) under the Aged Care Assessment Program (ACAP) is required before a person can access residential aged care (RAC), the aged care package programs or the newer Transition Care Program (TCP). Program-specific assessment processes regulate access to other community care programs such as HACC and VHC.

Since the late 1990s, the provision of permanent RAC places and aged care packages has been increasing relative to the number of people aged 70 and over (AIHW 2001, 2003, 2013a). On 30 June 1998, altogether there were 93.3 places and packages per 1,000 people aged 70 and over; by 30 June 2011, this had increased to 112.5. Much of this increase was in community care, with aged care packages accounting for 24% of provision in June 2011 compared with 15% in June 2002 (AIHW 2009d, AIHW 2012). In addition, the number of older people accessing the HACC program – which provides support services for frail aged people, people with a disability and their carers – increased from around 450,000 in 2001–02 to nearly 720,000 in 2010–11.

The above raises the question of how these changes in focus and provision are reflected in the way that people use the various programs to meet their care needs. Have there been changes in patterns of program use over time? In addition, given the complexities of the assessment requirements, how are people accessing care programs? In order to explore these and related questions, data on the use of 7 aged care service programs (RAC, CACP, EACH, EACHD, TCP, HACC and VHC), ACAT assessments and deaths over 9 years were linked to obtain a combined database for analysis – termed the Pathways in Aged Care (PIAC) database. This linkage extends the database derived for the PIAC cohort study undertaken by a consortium of researchers at the Australian Institute of Health and Welfare (AIHW), University of Queensland and La Trobe

University (see AIHW 2009c, 2010, 2011 b, 2011c; Karmel et al. 2010, 2012). The earlier linked database included program use between July 2003 and June 2006 for a cohort of 2003–04 ACAP clients. A brief description of the programs included in the PIAC database is given in Box 1.1.

Box 1.1: Aged care programs included in the PIAC database

The PIAC database includes data from ACAP and 7 aged care service programs. The purpose of these programs is described briefly below.

- **Aged Care Assessment Program** (operating from 1985). Under ACAP, multi-disciplinary Aged Care Assessment Teams determine people's care needs and make recommendations concerning the preferred long-term living arrangement. Relevant approvals are required from an ACAT in order to access RAC, CACP, EACH, EACHD and TCP.
- **Residential Aged Care** (Commonwealth funded from 1963). RAC provides both permanent and respite care in residential aged care facilities. An ACAT approval is required to access funded places. An ACAT approval is also required for residents moving between facilities in order to change from low care to high care.
- **Community Aged Care Packages** (operating from 1992). CACPs provide support services for older people with complex needs living at home who would otherwise be eligible for admission to 'low-level' residential care. They provide a range of home-based services, excluding home nursing assistance and allied health services, with care being coordinated by the package provider. Access requires an ACAT approval.
- **Extended Aged Care at Home** (operating from 2002). EACH provides packaged care at home that is equivalent to 'high-level' residential care. Access requires an ACAT approval.
- **Extended Aged Care at Home Dementia** (operating from 2006). EACHD provides a community care option specifically aimed at high-care clients with dementia and behavioural and psychological symptoms. Access requires an ACAT approval.
- **Transition Care Program** (operating from 2005). TCP provides short-term care to older people leaving hospital who are assessed as otherwise being eligible for at least low-level RAC. It aims to improve recipients' independence and functioning and delay entry into RAC. Access requires an ACAT approval. TCP care can be provided at home or in 'live-in' facilities, including RAC and hospital.
- **Home and Community Care** (operating from 1985). HACC provides a large range of services (including allied health and home nursing services) to support people at home and to prevent premature or inappropriate admission to residential care. An ACAT approval is not required for access.
- **Veterans' Home Care** (operating from 2001). VHC provides a limited range of services to help veterans, war widows and widowers with low-level care needs to remain living in their own homes longer. Eligible veterans who need higher amounts of personal care than provided under VHC may be referred to the Community Nursing program (Gold or White Repatriation Health Card holders only). An ACAT approval is not required for access.

The program data comes from 2 main sources: program-specific minimum data sets collected nationally (ACAP and HACC) and administrative data (RAC, CACP, EACH, EACHD, TCP and VHC). Age restrictions were not applied to the data sets to facilitate a wide range of analyses, including program use over time.

Source: AIHW 2009a, 2009c, 2013a.

The PIAC database covers all program use (except for ACAP) and deaths across Australia between 1 July 2002–03 and 30 June 2011. Complete national data for assessments funded under ACAP were only available from 2006–07.

This report contains the first analysis of the extended PIAC database. Two types of analyses are presented. Program use over the period 2002–03 to 2010–11 is discussed in Chapter 2, with separate analyses showing:

- the number of people using programs annually
- the number of people using programs on a day
- the annual population use of care programs, including combinations of care
- program use in the last year of life.

The second set of analyses, which examines the take-up of approved care, is presented in Chapter 3. The analyses focus on take up of care within 12 months of the first assessment in 2009–10 by a cohort of people who had not used aged care services in the preceding 3 years. Analyses include use of approved care by cohort members with a particular long-term care setting recommendation by the ACAT, and program use for cohort subgroups based on demographic characteristics, living arrangements and health status.

All analyses focus on people aged 65 and over. More information on the scope and data sources for the analyses is given below. Analysis tables are presented in Appendix A, and an overview of the linkage process is provided in Appendix B.

Before data linkage was undertaken, ethics approval and permission to use the required data were obtained from all relevant bodies. In addition, to protect the privacy of individuals, the linkage was carried out within the AIHW using the Institute’s data linkage protocol (AIHW: Karmel 2005a).

Several terms are used in the report to facilitate the discussion and presentation of data in the tables. The aged care package programs of CACP, EACH and EACHD are together called ‘packaged care’, ‘aged care packages’ or simply ‘packages’. The term ‘community care’ includes packaged care, HACC and VHC.

1.1 Data

1.1.1 Sources

The data used in this project cover 7 aged care service programs, ACAT assessments and deaths. The service programs included are RAC (permanent and respite), CACP, EACH, EACHD, TCP, HACC and VHC (see Box 1.1). Deaths data are also included because it is important to be able to distinguish between 5 distinct groups:

- people using aged care services in the study period who didn’t die
- people using aged care services in the study period who died
- people assessed for services who didn’t die and who didn’t get any assistance in the study period
- people assessed for services who died without getting assistance
- people who died without accessing either aged care services or having an ACAT assessment.

The data came from 3 main sources:

- program-specific national minimum data sets (MDSs) (for ACAP and HACC)
- program administrative data (for RAC, CACP, EACH, EACHD, TCP and VHC)

- death registration data from the registries of births, deaths and marriages and the National Coronial Information System. These data are used to form the National Death Index (NDI), a data set held at the AIHW for the purposes of matching to research data sets to identify fact and date of death.

The study includes events for the 9 financial years 2002–03 to 2010–11, the most recent year for which ACAP and HACC data were available at the time of analysis. All the data sets are designed to have universal coverage so, where possible, the data include national data. The 1 exception is data from the ACAP MDS because implementation of the client-level ACAP MDS V2, which began in July 2003, was only completed during 2005–06. In addition, TCP did not begin until 2005, and the EACHD program began in 2006. Therefore, analyses explicitly including these programs necessarily represent a smaller date range.

A further constraint arises from the coverage of the HACC MDS. Although all HACC providers should submit data for the MDS, in practice not all do, and between 2002–03 and 2007–08, on average, 82–91% of HACC agencies provided data to the MDS in a quarter (participation rates for later years have not yet been published) (DoHA 2005, 2006a, 2007, 2009a). In addition, the service use information on the HACC MDS is reported by quarter and there is only limited data on service use dates for specific services. These data issues result in some under-identification of the use of HACC services and imprecision in the timing of reported service use.

Methods used to identify clients in the HACC and ACAP data sets, associated data issues and derivation of program use dates are described in Appendix B.

1.1.2 Linkage

Data from the 7 aged care service programs, ACAT assessments and the NDI were linked to obtain the linked PIAC database. This database is suitable for person-based analysis of aged care pathways and patterns of program use over time. Data linkage between the various data sets was undertaken using either name-based or key-based linkage, depending on the linkage data available in the data sets being matched. Full name data were available for linkage for the program administration data and for the NDI. The HACC MDS and ACAP MDS collections do not contain full name data, but contain components for a common statistical linkage key SLK-581, where the SLK-581 for a person is the concatenation of 5 letters of name, 8-digit date of birth and sex.

When both data sets being matched had full name data, then name-based linkage was used. The name-based linkage strategy was probabilistic and involved running a series of passes allowing for variation in name and demographic data and used manual clerical review to identify matches (see Section B2.1). Within each pass, a weight was calculated for each pair-wise match based on the similarity of match variables (high weight for very similar or exact data, low weight for quite different data). These weights were used during clerical review to identify matches where there was variation in reported linkage data.

The key-based linkage strategy was used when at least 1 of the data sets being matched did not have full name data. This strategy used multiple deterministic match passes with keys based on data items common to the 2 data sets being matched (see Section B2.2). Estimates of the accuracy of a key were used to decide whether that key should be used in a match pass. Keys were based on the components of SLK-581. Where possible, additional common data items, such as postcode of residence and event dates, were also included to improve the accuracy of the linkage. This process was developed by the Institute for the original PIAC cohort study (Karmel et al. 2010).

The purpose of the above linkage was to produce a person-based linked database containing program use and death data for all people who used an aged care program between 1 July 2002 and 30 June 2011, or who died in that period. For obvious reasons, program use that was not reported in the relevant data set could not be included on the database. Also, program use records where there was insufficient information for client identification were excluded. On the other hand, people whose linkage data were reported sufficiently differently in the various data sets so that their records could not be matched may be included more than once in the database. These factors mostly affect ACAP and HACC client numbers. Finally, HACC MDS records were not included when they showed that only case management and planning and/or respite care services were provided: the former because no services were provided directly to the client; the latter because of inconsistent reporting practices over the study period. Details on the linkage strategy and associated data quality and cleaning processes are given in Appendix B.

1.1.3 Age scope

To allow maximum flexibility, clients of all ages are included in the PIAC database. However, the analyses in this report focus on people aged 65 and over:

- For program use in a financial year, estimates include people aged 65 and over at the beginning of the financial year (1 July).
- For program use as at 30 September, estimates include people aged 65 and over on that date.
- For program use in the last year of life, estimates include people aged 65 and over at the beginning of the financial year (1 July) who died in that financial year.
- For the cohort analysis in Chapter 3, the cohort includes people aged 65 and over on 1 July 2009 who had a complete ACAT assessment ending in 2009–10 and who had not used an aged care service program in the 3 years before their first complete ACAT assessment in 2009–10.

Analyses included people aged 65 and over because 65 is the age commonly used to distinguish between aged care services and services for people with a disability. In addition, although the age group 70 and over is used when planning residential aged care places and aged care packages, none of the programs included in this project have age restrictions, and restricted age groups are not used for planning HACC or VHC services.

Population estimates published by the Australian Bureau of Statistics (ABS) were used to obtain rates of program use within the population. The resident population just before the financial year (30 June) was used for financial year use estimates so that program use rates relate to people who were alive at the beginning of the financial year.

Program use on 30 September is used to illustrate program use on an example day. The choice of day was influenced by difficulties in identifying ongoing use of HACC services at the beginning and end of the study period, and because of overestimation of HACC use for all days but the last of a quarter due to imprecision in service use dates (see Section B6.2). Given these constraints, 30 September was chosen to avoid holiday periods that may affect program use (Christmas and Easter). The resident population at 30 September used for deriving population use was estimated by averaging the ABS population estimates for 30 June and 31 December.

2 Use of aged care programs

The push for home-based care towards the end of the last century (AIHW 1993) led to the introduction of a range of community aged care programs, such as the aged care packages. In this chapter, changes in client numbers for residential and community care programs between 2002–03 and 2010–11 are first presented. Whether changes in client numbers reflected changes in population numbers is then examined by analysing population usage rates over the period. Finally, the use of aged care programs in the year before death is discussed.

2.1 Overview

The use of permanent and respite RAC, aged care package programs, TCP, HACC and VHC, as well as the assessment program ACAP, are examined for the financial years of 2002–03 to 2010–11.

- Between June 2002 and June 2011, the number of people using aged care non-assessment services in a year increased by more than one-third (36%), from 642,000 to 874,000.
- Client numbers for ACAP were about one-fifth those for the service provision programs.
- The number of people being assisted on an exemplar day (30 September) increased from 392,000 in 2002–03 to 555,000 in 2010–11: an increase of 40%. On 30 September 2010, around 156,000 people were in permanent RAC and 395,000 were clients of community care programs.
- Between 16% and 18% of people aged 65 and over used aged care services on our example day. Over the study period a decreasing proportion of clients were in permanent RAC: 33% on 30 September 2002 compared with 28% in 2010.
- Among people aged 85 and over, on 30 September 2010, 58% were accessing care services. Two-fifths of program clients were in permanent RAC, so that almost one-quarter of people in this very old age group were in permanent RAC.
- The growth in client numbers was greater than the growth in the population aged 65 and over. In 2002–03, just over one-quarter (26%) of the older population used an aged care service; this proportion increased over the next few years, stabilising at 29% by 2008–09.
- Much of this increase was due to greater use of community care programs. The proportion of people who only used permanent RAC decreased marginally over the study period, from 5.8% in 2002–03 to 5.6% in 2010–11.
- The proportion of people aged 85 and over using an aged care service in a year rose from 70% to 76% over the study period. As for the older population as a whole, this change was driven by increasing proportions using community care.
- Program use within the population varies with age and sex. However, age-sex standardised estimates show that changes in program use did not result just from population ageing. In particular, the use of only permanent care in a year gradually decreased after 2005–06, particularly among people aged 85 and over, while use of only community care services grew between 2002–03 and 2008–09 for both men and women and for the 3 age groups examined.
- A large majority of people using permanent RAC used other services in the 12 months before their first admission. This proportion increased noticeably over the study period, from 81% of people first admitted into permanent RAC in 2003–04 to 90% admitted in 2010–11.

- Over the study period, the use of community care in conjunction with respite RAC and/or transition care in the 12 months before admission into permanent RAC became increasingly common, while use of community care on its own decreased.
- Between 2003–04 and 2010–11, an increasing proportion of people who died had used an aged care service in the preceding 12 months: 70% of people who died in 2003–04 had used a service (not counting assessment or transition care) in their last year of life, compared with almost 75% in 2010–11.
- In 2010–11, just over two-thirds of very old women and half of very old men (85 and over) used permanent RAC in their last year of life.

2.2 Clients of aged care programs

This section shows the numbers of people aged 65 and over using particular aged care programs over the 9-year period from 1 July 2002. Use of the programs delivering aged care services to clients (RAC, aged care packages, TCP, HACC and VHC) is examined separately from assessments provided under ACAP. This split is used because ACAT assessments enable people to access only a subset of the programs (RAC, aged care packages and TCP), and because national unit record assessment data are available only from 2006–07. The relationship between ACAT assessments and take-up of care is examined in detail in Chapter 3. How client numbers relate to the population as a whole is presented in Section 2.3, with program use in the last year of life discussed in Section 2.4.

2.2.1 Clients of service programs in a year

Although the number of people aged 65 and over increased by just over one-quarter between June 2002 and June 2011, the number of people using aged care services in a year, excluding ACAP, increased by more than one-third (36%), from 642,000 in 2000–03 to 874,000 in 2010–11 (Table A2.1). The rate of increase in client numbers was more marked in community care than RAC: community care experienced a 42% increase in annual client numbers compared with a 19% increase in permanent RAC clients (Figure 2.1). Large increases occurred in nearly all community care programs; for example, CACP had a 61% increase in client numbers (up from 35,500). Use of respite RAC also grew, with annual client numbers increasing by over one-third (37%), from 32,300 to 44,400.

Over the period of interest, there were small changes in the relative use of different aged care programs. The proportion of clients (that is, someone who used an aged care service) who used permanent RAC declined gradually, from 27% of clients in 2002–03 to 24% in 2010–11 (Table A2.1). At the same time, the proportion using community care rose from 76% of people using a service to 79%, with the relative use of respite RAC remaining fairly steady over the period at 5%. The proportion of clients using various community care programs increased for all programs except VHC. Moreover, VHC was the only community care program included in the study to experience a decline in absolute client numbers, with numbers peaking in 2006–2008 before falling over the next 2 years.

People can access more than 1 program over a financial year. For example, people can move from the community to permanent RAC during the year. People may even access 2 programs at the same time; for example, CACP recipients may access nursing services through HACC or may have a period in respite RAC while still on a package. In 2002–03, the mean number of programs accessed by people using a service in the year was 1.15; 12% of clients used more than 1 service program over the year. These numbers grew gradually over the years, and by 2010–11 the mean

number of programs accessed by clients was 1.18, with 13% of clients accessing multiple programs in the year.

It is likely that at least some of the above growth was caused by the expansion of CACPs, the implementation of EACH and EACHD, and the introduction of TCP. Around 17% of all TCP clients used only TCP in the financial year (Table A2.2). Just over half also used community care, but not RAC, and about one-fifth of TCP clients also used community care and RAC, either for permanent or respite care.

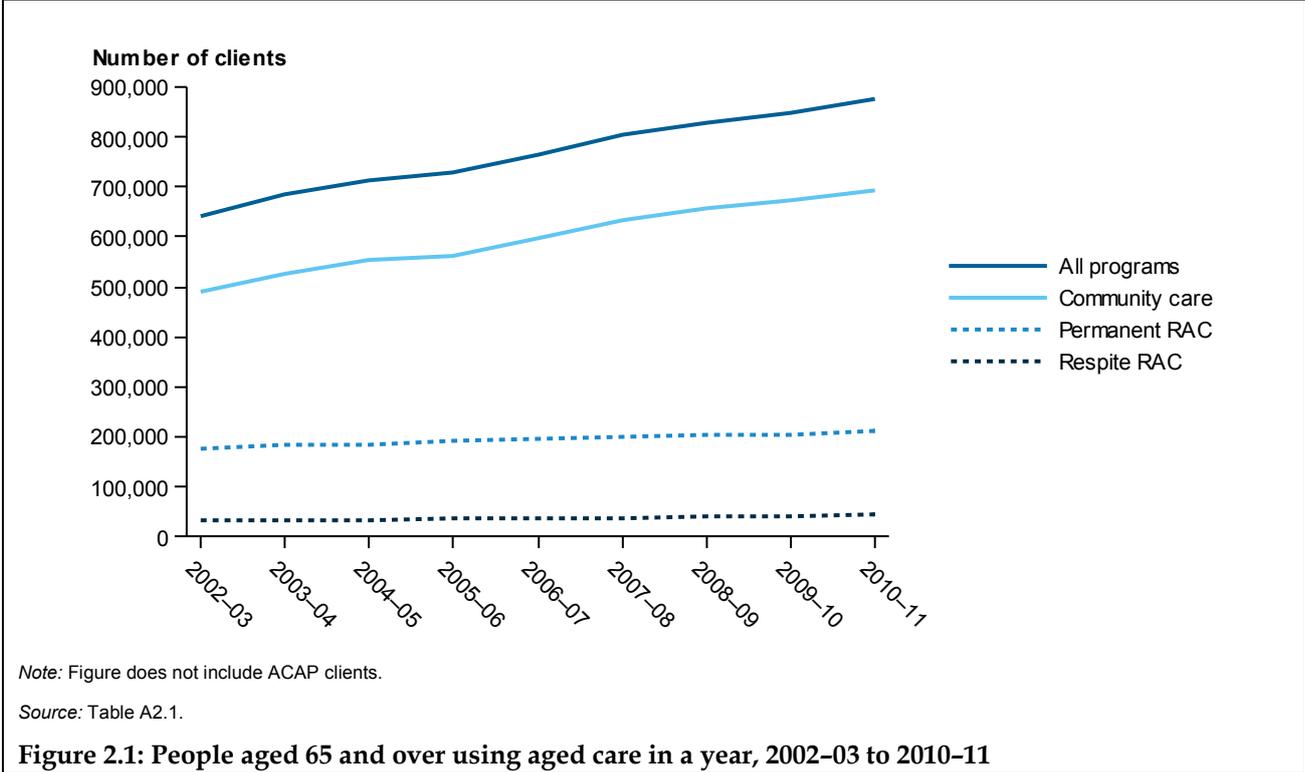


Figure 2.1: People aged 65 and over using aged care in a year, 2002-03 to 2010-11

2.2.2 ACAP clients in a year

The number of people undergoing an ACAP assessment was about one-fifth of those receiving services from the aged care programs. Over the 5 years from 2006-07, the number of people receiving an assessment from an ACAT peaked in 2008-09 at 184,000 before falling to 167,000 the following year (Table A2.3). This sharp decline in client numbers resulted from policy changes in the validity periods associated with program approvals arising from an assessment. In particular, since 1 July 2009, an ACAT approval for high-level permanent residential care, and low-level and high-level residential respite care no longer lapse after 12 months unless the ACAT has specified the approval as time-limited (see AIHW 2013b: Box 4.1 for more details).

Over the years under study, around 90% of people who had an ACAT assessment in a year had a complete assessment; that is, the assessment process was completed and did not end due to a client-based factor such as a client withdrawing from the process (Table A2.3). Also, between 13% and 17% of ACAP clients had at least 1 incomplete assessment. The data since 2006-07 – the first year with complete national data – suggest that the proportion of ACAP clients with incomplete assessments is increasing. The proportion of ACAP clients with both complete and incomplete assessments in the same financial year grew from 5% to 8% of ACAP clients between 2006-07 and

2010–11. The most common reasons identified for an incomplete assessment were closure at the client's request and the client being in an unstable medical condition. Fewer than 10% of people with incomplete assessments had an assessment terminated due to their death.

ACAP clients were highly likely to use service provision programs (RAC, aged care packages, TCP, HACC and VHC) in the year – not surprising given that ACAT assessments are required to access all but the last 2 of these programs. However, the proportion of ACAP clients accessing both assessment and service provision programs increased over the 9 years, rising from around 80% in the first 3 years to 86% in 2010–11. This rise was largely driven by increasing use of programs that require an ACAT assessment. Throughout the study period, about 30% of ACAP clients also used HACC or VHC in the financial year but not any of the ACAP-related programs. On the other hand, the proportion using an ACAP-related program as well as HACC or VHC rose considerably, from 26% of ACAP clients in 2003–04 to 35% in 2010–11.

Note that having both an assessment and service use in a year does not imply that the former led to the latter, simply because people can already be receiving program assistance while they are being assessed, for example, to move from the community into RAC. Also, not all ACAT assessments lead to service program use. The take-up of care after an ACAT assessment is examined in Chapter 3.

2.2.3 People using service programs on a day

The different growth rates seen in the population and the annual numbers of aged care clients is, as expected, reflected in daily use figures. To illustrate this, estimates of the number of people using programs on 30 September each year were derived (Table A2.3). This date was chosen because of difficulties in identifying ongoing use of HACC services at the beginning and end of the study period and because of overestimation of HACC use for all days but the last day of a quarter due to imprecision in service use dates (see Section B6.2). This date also avoids holiday periods that may affect program use (Christmas and Easter). Selecting a particular date enables a consistent comparison across years.

The number of people being assisted on 30 September increased from an estimated 393,000 in 2002–03 to 555,000 in 2010–11, an increase of 42% (Table A2.4). However, the population was also increasing, and the proportion of people aged 65 and over using aged care services on a day rose more slowly, increasing from around 16% in 2002 to just over 18% in 2007. There was little change in the population use rates on our example day for the following 3 years. This pattern of growth in daily use rates over the years was common to both men and women and to the age groups examined (tables A2.5–A2.8). The changes were largest in the oldest age group: among people aged 85 and over, 51% were in care on 30 September 2002 compared with 57% in 2007 and 58% in 2010.

The proportion of clients accessing permanent RAC on our exemplar day declined from 33% of clients in 2002 to 28% in 2010 (Table A2.4). Declines were seen in all age groups for both men and women (tables A2.5–A2.8), and again the change was particularly marked among people aged 85 and over. The proportion of very old clients who were in permanent RAC on 30 September decreased from 50% of clients in 2002 to 41% in 2010. This equated to a small fall in use of permanent RAC among all people aged 85 and over – from around 25% down to 23%. Further analysis of population use of care programs by age and sex is presented by financial year in Section 2.3.2.

On 30 September 2010, there were 156,000 people in permanent RAC and 395,000 receiving community care (Figure 2.2). Around three-quarters of people who accessed permanent RAC in a

financial year were in care on 30 September, and just over half of people who used community care in a financial year were clients of a community care program on 30 September (tables A2.1, A2.4). Throughout the study period, 3%–4% of clients were accessing 2 or more programs on 30 September.

On 30 September 2010, around 6,600 people were either in respite RAC or TCP. The small numbers accessing respite RAC and TCP on this particular day, when compared with annual use (Table A2.1), reflects the fact that these programs are designed to be used for short periods so that relatively few people are accessing these programs on any single day. Thus, although annually around 5% of aged care clients used respite RAC, on 30 September fewer than 1% of clients were in such care. Similarly, 2% of 2010–11 clients accessed TCP; however, on 30 September 2010 only 0.4% of people using aged care services were in transition care.

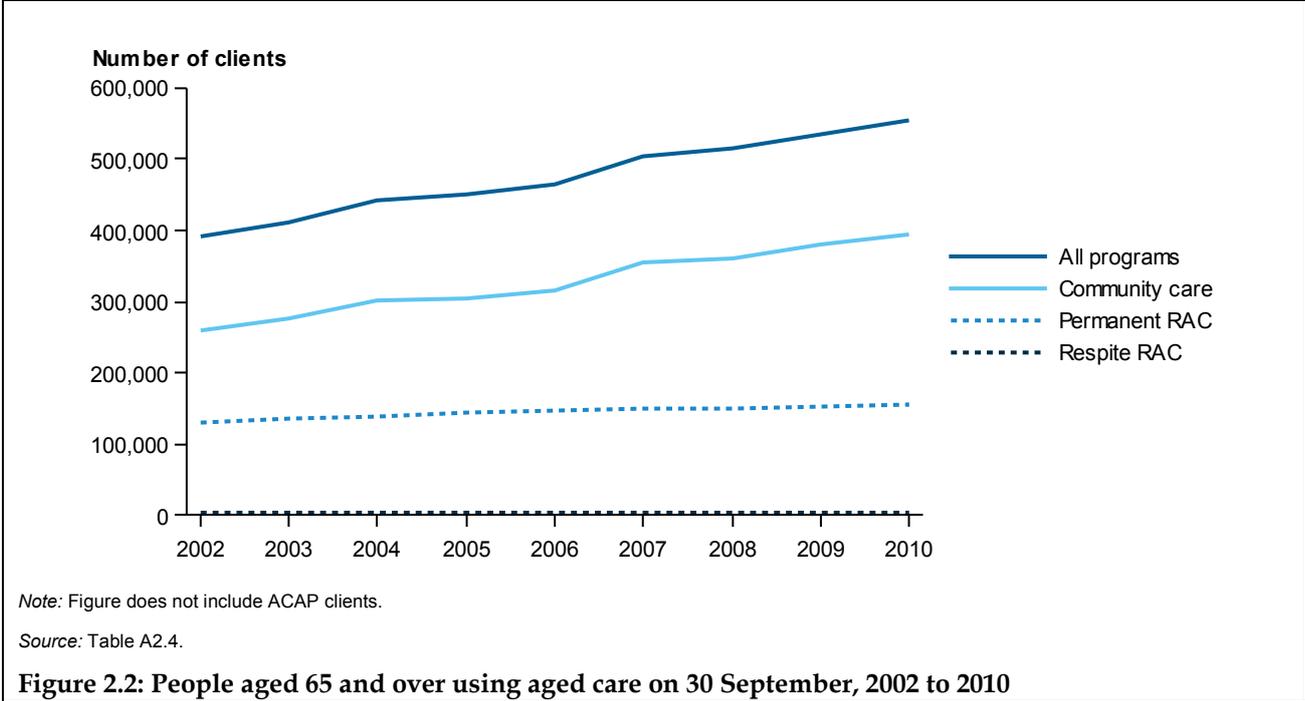


Figure 2.2: People aged 65 and over using aged care on 30 September, 2002 to 2010

2.3 Program use by the population

The changing use over time of residential and community care programs by the population aged 65 and over is examined below. The analysis focuses on the use of residential care, aged care packages, HACC and VHC, including use of combinations of both residential and community care programs over a financial year. TCP has not generally been included, both because of its very focused purpose – to assist people leaving hospital – and because it can be provided either at home or in a home-like setting within facilities, including RAC and hospital. However, for completeness, broad statistics on population use of TCP are given.

2.3.1 Population program use over time

Growth in the numbers of people using aged care services in the first few years of the study period was greater than the growth in the population aged 65 and over. Between 2002–03 and 2007–08, the number of aged care clients aged 65 and over grew by 25%, while the population in that age group increased by only 11% from 30 June 2002 to 30 June 2007. As a result of these

different growth rates, the proportion of older people using an aged care service rose from just over one-quarter (26%) in 2002–03 to 29% in 2007–08, after which the proportion stabilised (Table A2.1). Also, about 6% of the population aged 65 and over had an assessment during the year (Table A2.3). Looking at daily use rates, it is estimated that on 30 September 2002 just under 16% of older people were accessing aged care services (Table A2.4). By September 2007, this figure had grown to just over 18%, where it remained for the next few years.

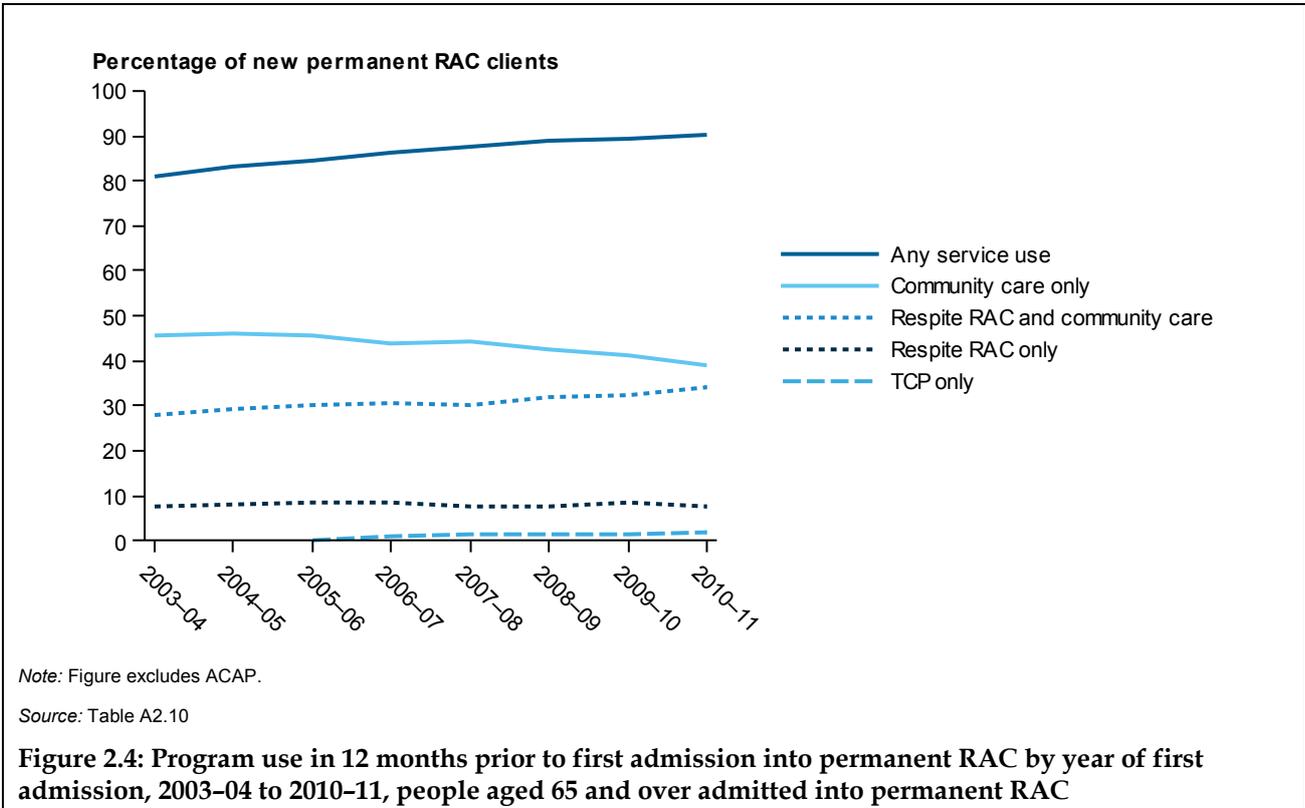
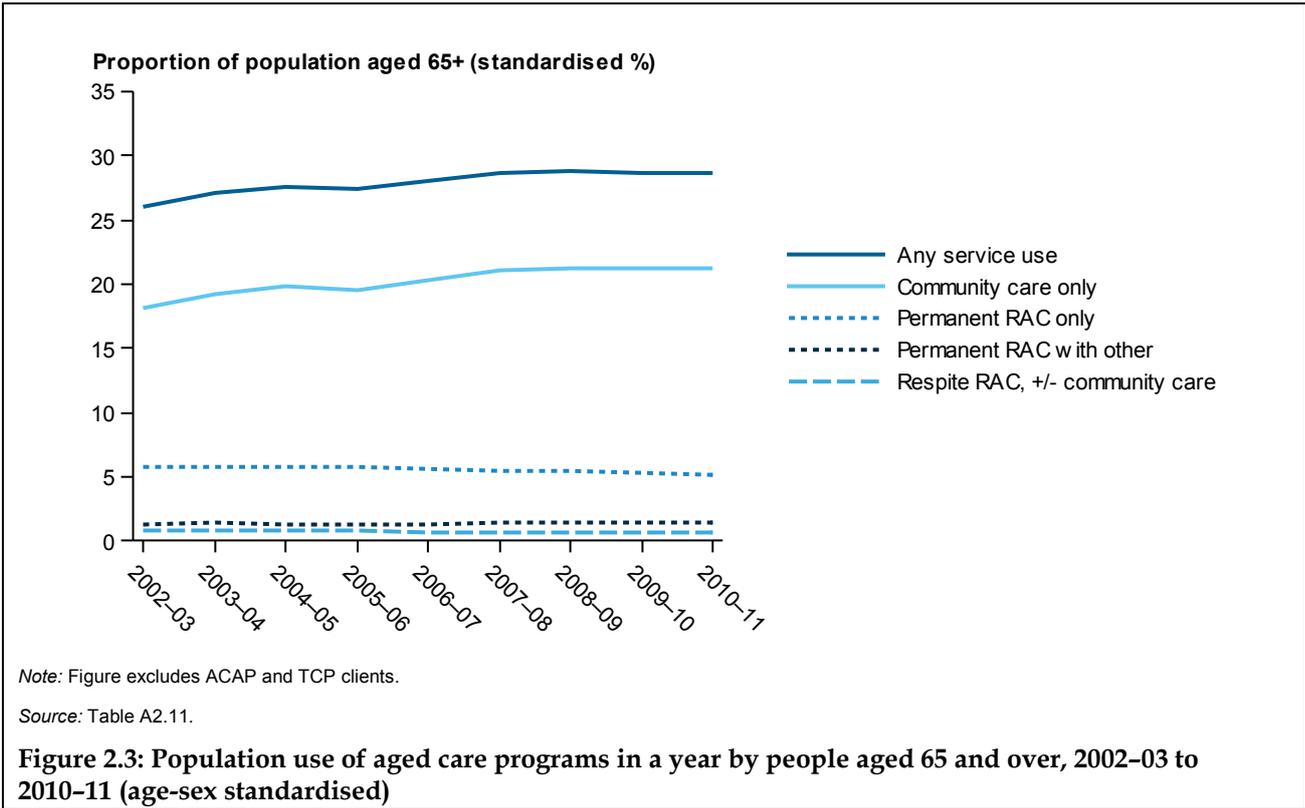
Numerically, TCP is quite a small program. However, over the 6 years from 2005–06 to 2010–11, the number of TCP clients grew from 800 to 17,400 – or from 0.03% to 0.6% of the population aged 65 and over (Table A2.2).

Changes in use of residential and community care

The increase seen in the proportion of people using an aged care program between 2002–03 and 2007–08 largely reflects the rise in the use of community care programs, with the proportion of the population accessing only community care in a year increasing from 18% to 21% in the 6 years from 2002–03 (Table A2.9). The proportion of people who only used permanent RAC also initially increased – albeit marginally – in the first half of the study period, but declined from 2006–07 so that by 2010–11 the usage rate (5.6%) was below that for 2002–03 (5.8%) (Table A2.9). The proportion of the population using both community care and permanent RAC within a financial year changed little over the 9 years – around 1.2%. Just 0.6% of the population used only respite RAC and community care, and 0.2% used only respite RAC and permanent RAC.

Standardising the estimates to allow for changes in the age and sex structure of the population shows that the changes seen in program use were not just the result of population ageing (Figure 2.3). After standardising, use rates for only permanent care gradually decreased after 2004–05, going from 5.8% in 2004–05 to 5.2% in 2010–11. Counteracting this decline, use of only community care services grew between 2002–03 and 2008–09, so that overall, there was some growth in the use of aged care services over the period of interest, with standardised population usage rates reaching their maximum at almost 29% in 2008–09.

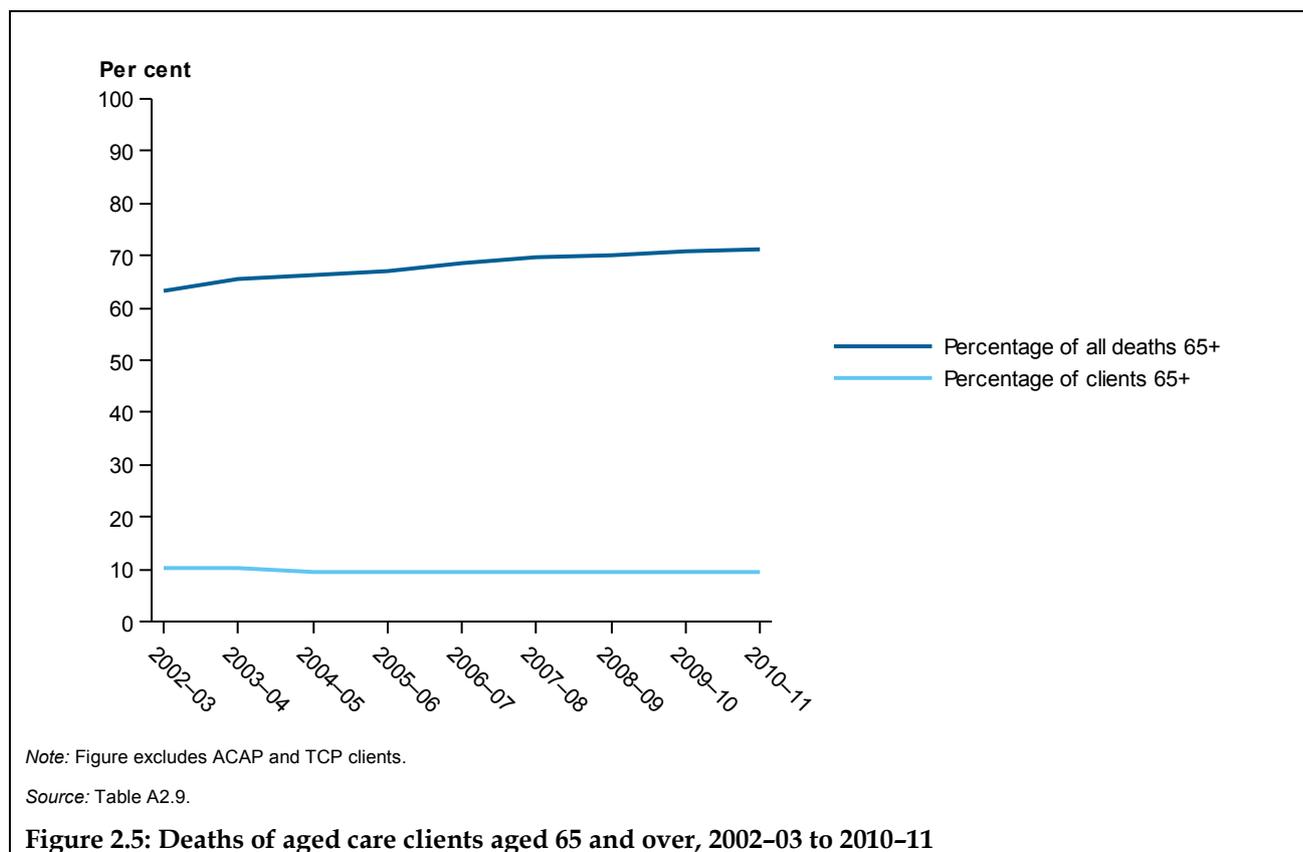
Overall, around 7% of people aged 65 and over used permanent RAC at some time in a financial year (Table A2.9). For about one-quarter of these people, this corresponded to a first admission into permanent RAC (Table A2.10). Use of other services in the 12 months before a first admission was significant, and increased noticeably over the study period: 81% of people admitted into permanent RAC for the first time in 2003–04 had used other services before their admission compared with 90% admitted into permanent RAC for the first time in 2010–11. The use of community care in conjunction with respite RAC and/or transition care (after 2006–07) became increasingly common over the period, while use of community care on its own decreased (from 46% to 39%) (Figure 2.4). In 2010–11, 44% of new permanent RAC residents had used respite RAC in the 12 months before their admission, 9% had used TCP, and 81% had accessed community care.



Deaths

Between 2002–03 and 2010–11, the number of clients aged 65 and over dying in a financial year rose from about 65,000 to 82,500 (Table A2.9). These deaths accounted for an increasing proportion of all deaths for people aged 65 and over. That is, people who died were increasingly likely to have used aged care services before their death. More specifically, deaths of people who were aged care clients in 2002–03 accounted for 63% of all deaths in 2002–03, compared with 71% in 2010–11 (Figure 2.5, Table A2.9).

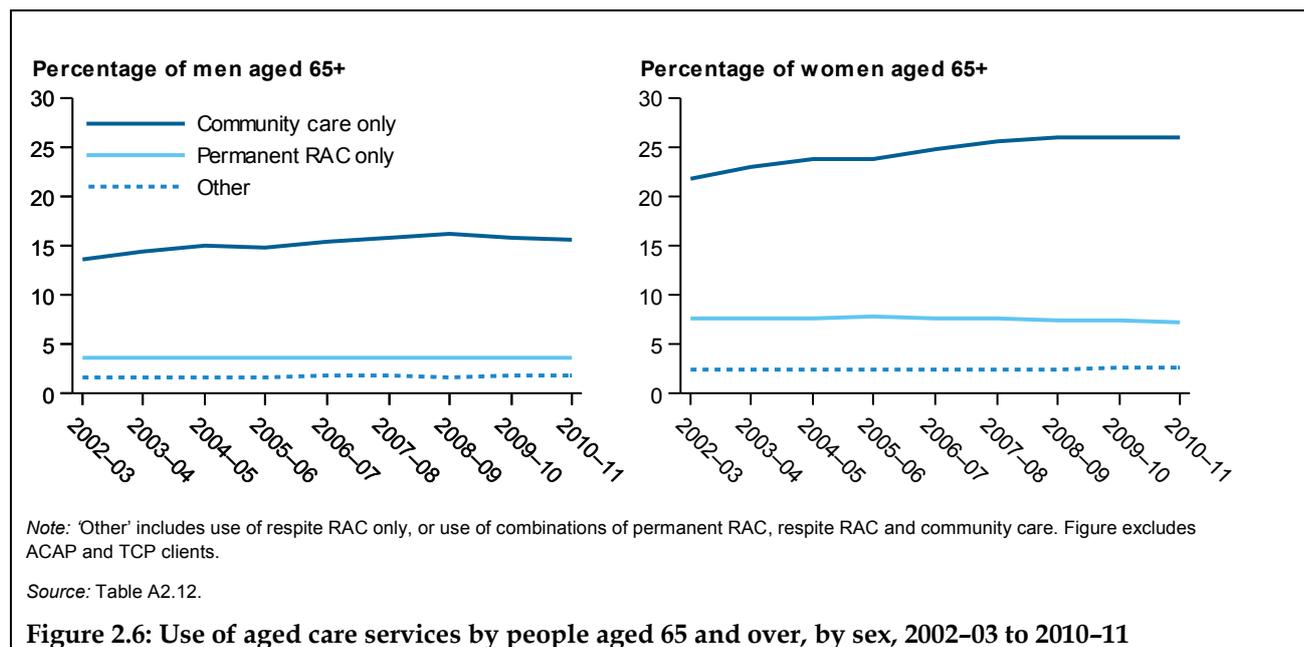
Nevertheless, because of the large rise in client numbers over the study period, the *proportion* of clients dying in a year declined marginally over the study period, with most of this decline occurring in the first couple of years. Just over 9% of people who were clients in 2010–11 died in that year. The use of aged care services in the year before death is discussed further in Section 2.4.



2.3.2 Use by different age and sex groups

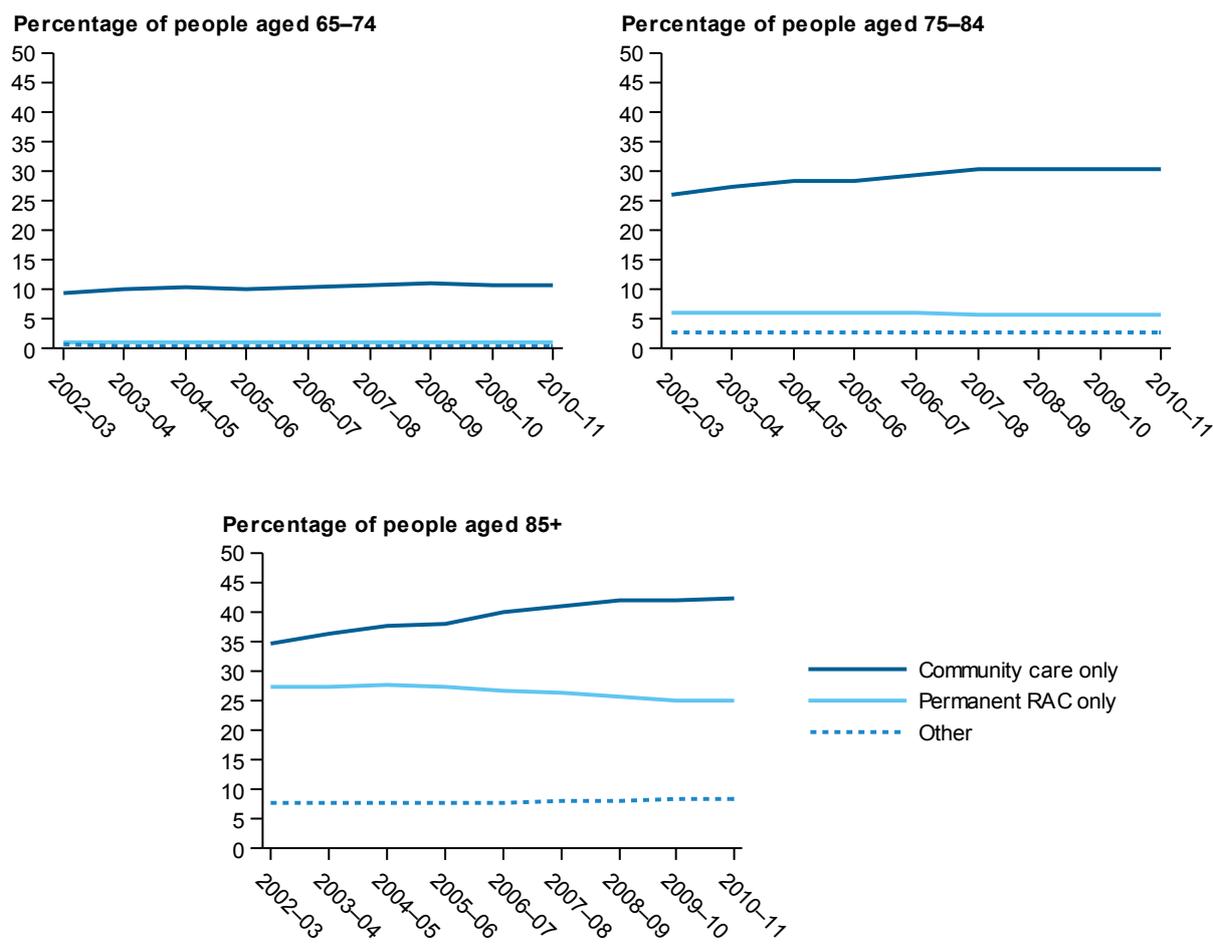
Use by men and women

Overall, women were more likely to use aged care services than men, with around one-third of women aged 65 and over accessing services in a year compared with around one-fifth of men (Table A2.12). Usage rates increased only marginally for men over the 9-year study period, from 19% to 21%; over the same period, usage rates by women increased slightly more, from 32% to 36%. For both groups, the growth occurred before 2008–09, after which the rates were steady. Women had noticeably higher rates than men for both the use of permanent RAC only and community care only (Figure 2.6).



Use within age groups

As would be expected, older people were more likely to use aged care than younger people (Table A2.13). Among people aged 65–74, there was little change in program use across the 9 years, with around 12% of people in this age group accessing services in a year. However, for people aged 75 and over, there were some changes, with overall program use increasing by 4 to 6 percentage points over the study period. In 2010–11, nearly two-fifths (39%) of people aged 75–84 and three-quarters of people aged 85+ (76%) used care services (Figure 2.7). For both these older age groups, the proportion of people accessing only community care programs rose over the study period, and the proportion accessing only permanent RAC fell. This pattern was most marked for the oldest age group, among whom use of only community care programs grew from 35% in 2002–03 to 42% by 2008–09.



Note: 'Other' includes use of respite RAC only, or use of combinations of permanent RAC, respite RAC and community care. Figure excludes ACAP and TCP clients.

Source: Table A2.13.

Figure 2.7: Use of aged care services by age, 2002-03 to 2010-11

Use within age groups by men and women

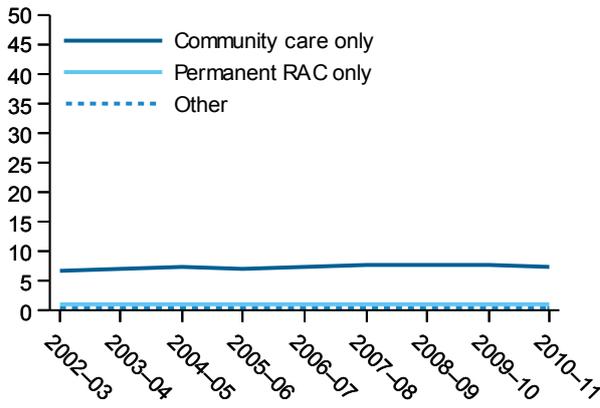
Men and women had different use patterns in the 3 age groups examined (Figure 2.8; tables A2.14, A2.15). Among younger people (65-74 year olds), women were more likely to use community care only, with usage rates being 12-14% for women and around 7% for men over the 9-year period. However, similar proportions of both men and women accessed only permanent RAC in the financial year (1%) or used respite RAC and/or a mix of RAC and community care (less than 1%).

In the 75-84 age group, women were more likely than men to use most care programs, with the difference most marked for community care services (Figure 2.8, tables A2.14, A2.15).

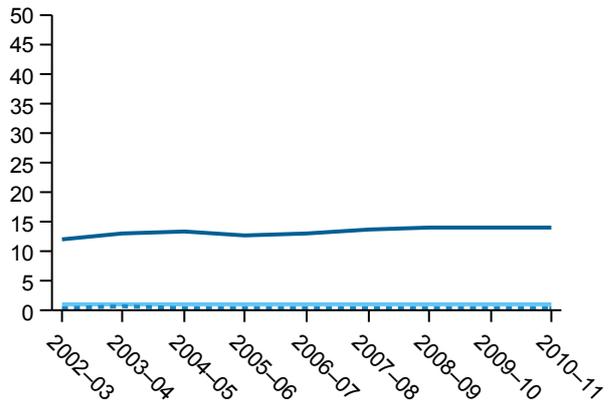
Furthermore, the proportion of women accessing only community care services grew over the study period from 30% to 37%, while for men usage of these services was around 22-23% for most of the period. There was also a small, but steady, drop in women's use of only permanent RAC between 2005-06 and 2010-11; for men, a similar trend was not evident.

For all years, women in the oldest age group (85 and over) were again more likely to access services than men: by 2010–11, 80% of very old women were using aged care services in a year, compared with 67% of men (up from 74% and 60% in 2002–03, respectively) (tables A2.14, A2.15). Most of this difference between the sexes was due to women’s greater use of permanent RAC. Women’s use of only community care services was only marginally higher than men’s, and greater use of these services over time was seen for both sexes, with use rising by about 8 percentage points over the study period from around 34% in 2002–03 (Figure 2.8; tables A2.14, A2.15). Although the usage rates of only permanent RAC reduced slowly over time, this pattern was more marked among very old women than men, dropping from 32% to 29% for women compared with a decline from 18% to 17% for men. As a consequence of these changes in women’s use patterns – that is, the large increase in use of community care and small drop in the use of permanent RAC – by 2010–11, over two-fifths of very old women (43%) were accessing community care services (but not RAC), while 29% used only permanent RAC. This compares with 2002–03 when just over one-third (35%) of women used only community care and slightly fewer (32%) used only permanent RAC.

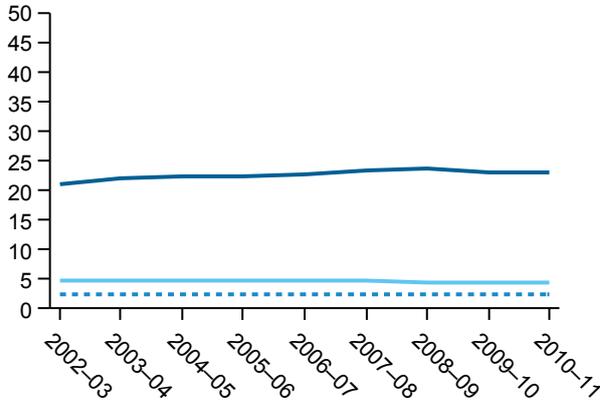
Percentage of men aged 65–74



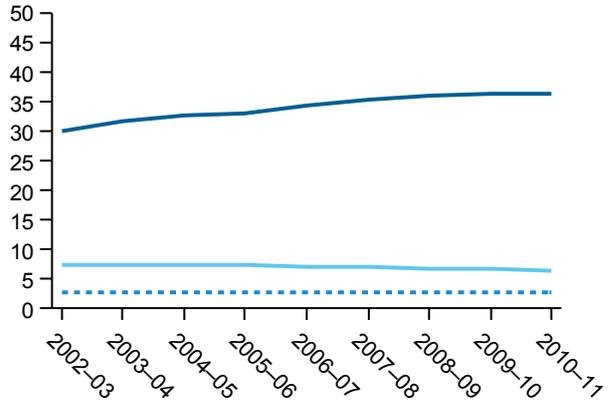
Percentage of women aged 65–74



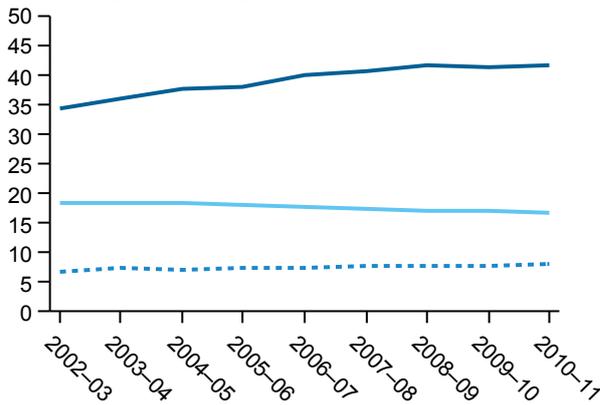
Percentage of men aged 75–84



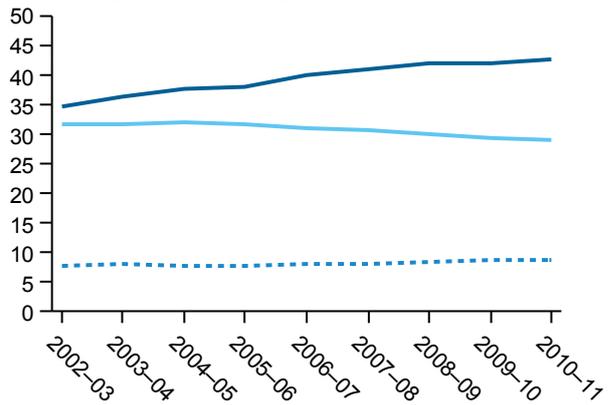
Percentage of women aged 75–84



Percentage of men aged 85+



Percentage of women aged 85+



Note: 'Other' includes use of respite RAC only, or use of combinations of permanent RAC, respite RAC and community care. Figure excludes ACAP and TCP clients.

Source: Tables A2.14, A2.15.

Figure 2.8: Use of aged care services by age and sex, 2002–03 to 2010–11

2.4 Program use in the year before death

As seen in the previous section, even among people aged 85 and over, a substantial proportion of people are not accessing aged care services over a 12 month period. However, we have also seen that over 60% of people who died had been aged care clients in the financial year of death (Table A2.9). The use of aged care services before death is examined in the analysis below by analysing service use in the last year of life. To add context, program use in the 5 years before death and in the fifth year before death are also discussed. Whether people are in RAC or using community care on the day they die has not been investigated because people may go into hospital or a palliative care hospice shortly before death, which would mean they are no longer aged care clients.

The analysis covers the period 2003–04 to 2010–11 to allow a 12 month window for identifying aged care program use before death. As before, use of ACAP and TCP are examined separately from other programs. For these 2 programs, data are only presented from 2007–08: the former because national data were not available until 2006–07, and the latter because it only began in 2005–06 and very few people accessed TCP in its first year of operation. In addition, these limitations mean that use of these programs could not be included in the analysis concerning program use in the 5 years before death.

Estimates for each financial year include people aged 65 and over as at 1 July at the beginning of the financial year. This approach was taken (rather than age at death) to allow comparisons with analyses in the previous sections.

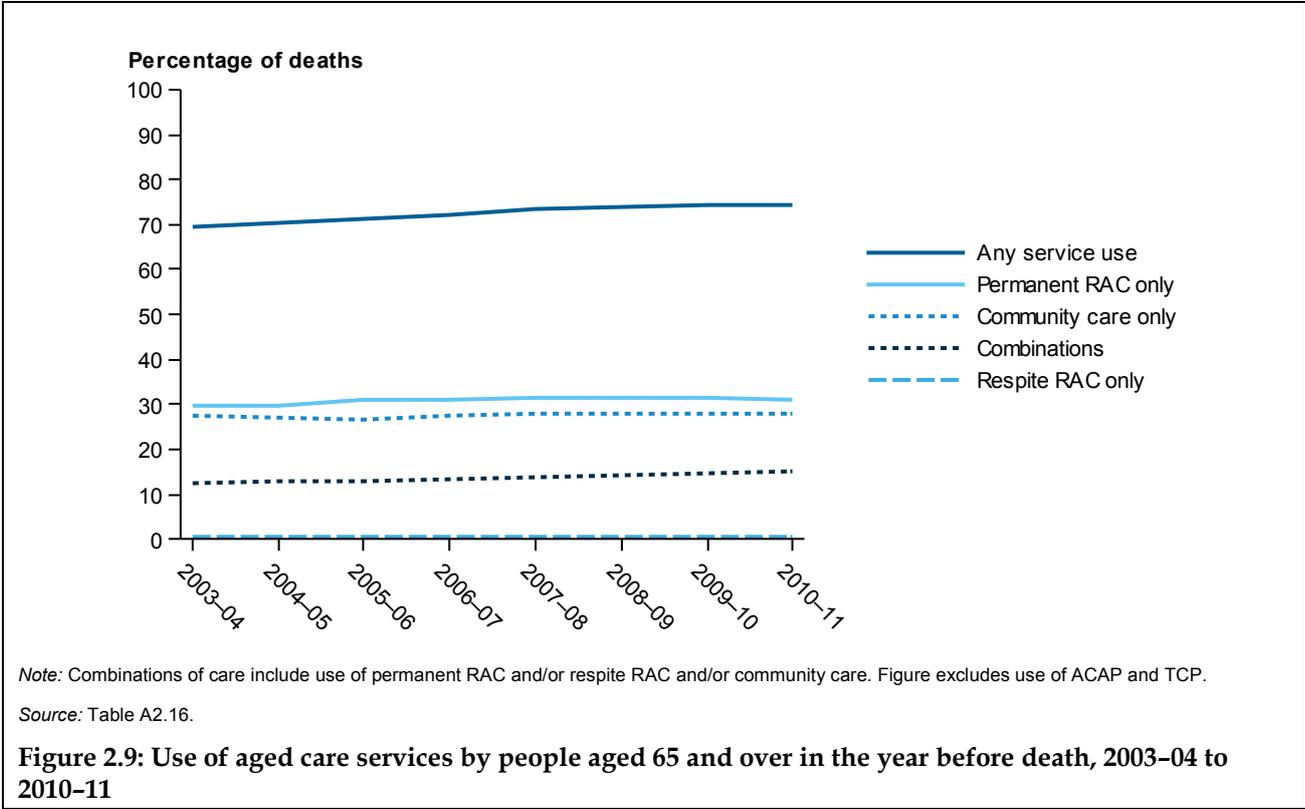
2.4.1 Use of programs in the year before death

Between 2003–04 and 2010–11, an increasing proportion of people who died had used an aged care service program (not including ACAP and TCP) in the preceding 12 months: 70% of people who died in 2003–04 had used an aged care service in their last year of life, compared with almost 75% in 2010–11 (Table A2.16). However, there were only small changes seen in the proportions of people using solely permanent RAC, respite RAC or community care, so that much of the rise in service use was due to people increasingly accessing more than 1 type of assistance in their last year: that is, both RAC and community care (Figure 2.9).

As would be expected from the size of the program, in the years under study very few people who died had used transition care in the preceding year (Table A2.17). After taking a year or so for the program to get established, from 2007–08, between 1.6% and 2.5% of people who died had used TCP in their last 12 months. The majority of these people had also used community care programs, with about half of those accessing community care also having used residential care.

Just under one-third of older people who died had an ACAT assessment in the previous 12 months, with the vast majority of these being complete assessments (Table A2.18). Over the years with national data available, fewer than 2% of people who died had an incomplete assessment that had ended because they had died. This equates to less than 1 in 16 of those who had an ACAT assessment in the year before death. Most of those who had an assessment had also used an aged care service program (including TCP) during the year before death, with two-thirds using a program that required an ACAT assessment. Although some of this program use may have been the result of earlier assessments, these results suggest that people were either trying to access ACAP-related programs for the first time or trying to vary their type of care due to changed circumstances. Before 1 July 2009, at which date approvals for respite RAC stopped being time-limited and a new ACAT assessment was no longer required to transfer between RAC facilities while in high care, a proportion of these assessments would have been to maintain

access to respite care or to move between facilities. This change in policy is reflected in the slightly lower proportions of people dying in 2009–10 and 2011–12 who had an assessment in the 12 months before death.



From the above, it is estimated that around two-fifths of people who used aged care programs in the year before their death also had an ACAT assessment in that year (tables A2.16, A2.18). Furthermore, almost half of the people who died in a financial year used programs that needed an approval from an ACAT (Table A2.16). This means that at least two-fifths of the people who used ACAP-dependent programs must have had their ACAT assessment more than 12 months before their death. This would have been the case for many people who had been using either aged care packages or who had lived in permanent RAC for more than a year. The relationship between ACAT assessment and take-up of care is examined in detail in Chapter 3.

2.4.2 Earlier use of programs

Only a small proportion of people used aged care services (again, not including TCP or ACAP) sometime during the 5 years before they died but did not use services in their last year of life (Table A2.19). For example, among people who died in 2010–11, 75% had used aged care services in their last year of life compared with 79% using services during their last 5 years.

Table A2.19 shows that people’s program use changed considerably over the years before death. During the 12 months starting 5 years before their death, about two-fifths of people were using aged care services; by the year before their death, this proportion had risen to almost 75%. In addition, although about 30% of people who died had used permanent RAC solely in their last year of life, just 14% had used only this type of care in their last 5 years of life. That is, many

people who were in permanent RAC shortly before their death had previously used community care and/or respite RAC. In 2010–11, 42% of people who died had used some community care services and 9% had accessed respite RAC in their final year of life. This compares with 63% and 18%, respectively, using these services at some time in their last 5 years.

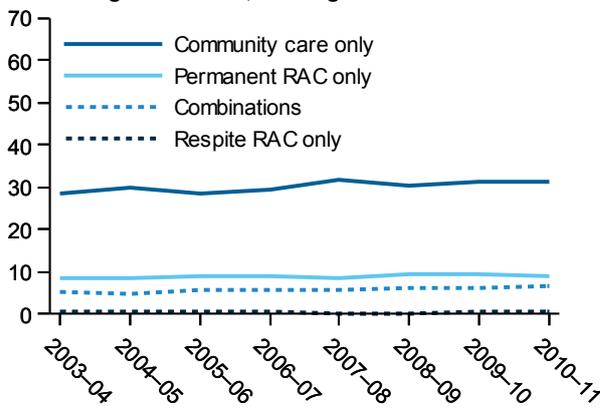
2.4.3 Differential use by age and sex

As would be expected from the results on population use of aged care programs within a year (Section 2.3), very old people had different service use patterns in their last year of life from younger people, and men and women also had different patterns (tables A2.20–A2.23). Even so, use of any aged care service in the 12 months before death increased over the study period for both sexes and for the 3 age groups examined. However, in all 3 age groups, few people accessed only respite RAC—less than 1% of both men and women. Program use rates in the last year of life are presented in Figure 2.10 by age and sex.

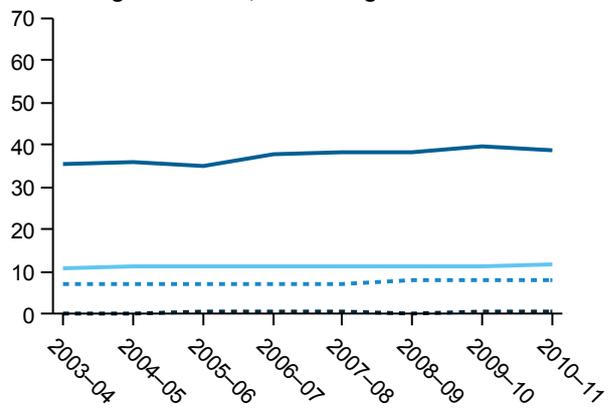
Men and women aged 65–74 had similar service use patterns, although women had slightly higher use rates of the different types of care. Among people aged 75–84, men and women were equally as likely to have accessed only community care in their last year (just under one-third over the study period). However, women were more likely than men to have only been in permanent RAC, with a 10 percentage point difference in usage rates. At a little under 30%, the proportion of women who only accessed permanent RAC was almost as high as the proportion who only used community care—a pattern not seen for men. Women were only slightly more likely than men to access combinations of community and residential care. For both sexes, there is evidence of a small, but steady, increase in use of combinations of care over the study period.

Very old (85+) men and women had quite different patterns of aged care service use in the year before they died (Figure 2.10). Overall, very old women were more likely than very old men to have accessed any aged care services (90% versus 83% in 2010–11) (tables A2.22, A2.23). However, over the study period, men were about 50% more likely than women to have used only community care, and 20–30% more likely to have used a combination of residential and community care. By contrast, women were more likely to have been in permanent RAC for at least some of the year before their death: between 2003–04 and 2010–11, around two-thirds of very old women used such care in their last year compared with around half of very old men (tables A2.22, A2.23). Very old women were also more likely than their male counterparts to have used permanent RAC but no other services (around 55% compared with 35%).

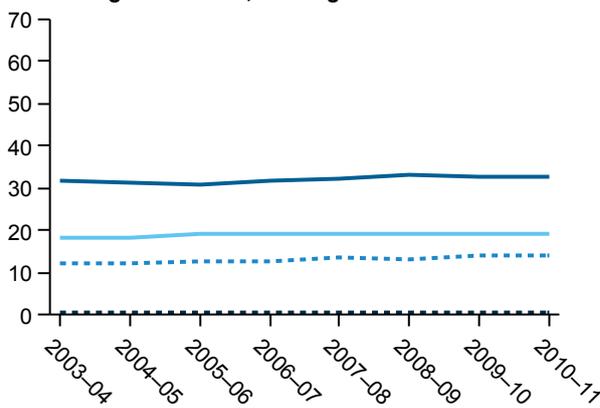
Percentage of deaths, men aged 65–74



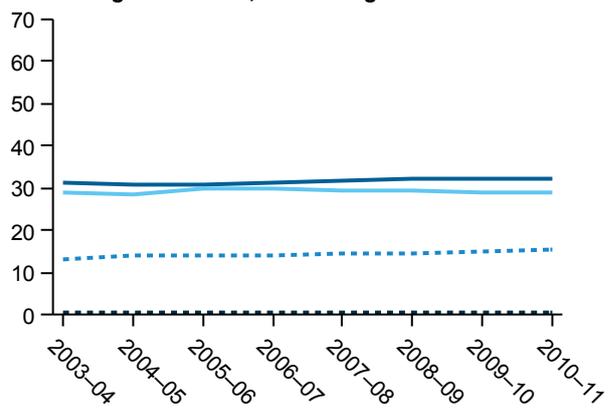
Percentage of deaths, women aged 65–74



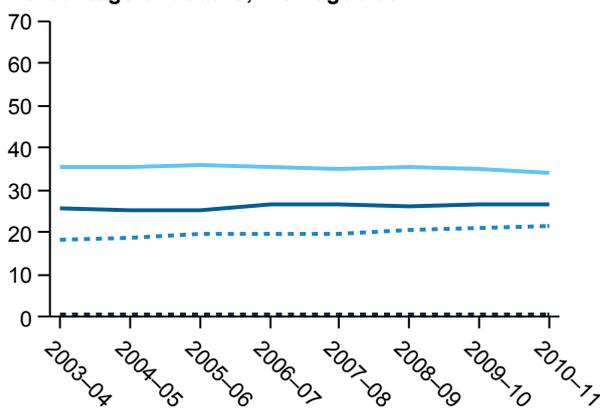
Percentage of deaths, men aged 75–84



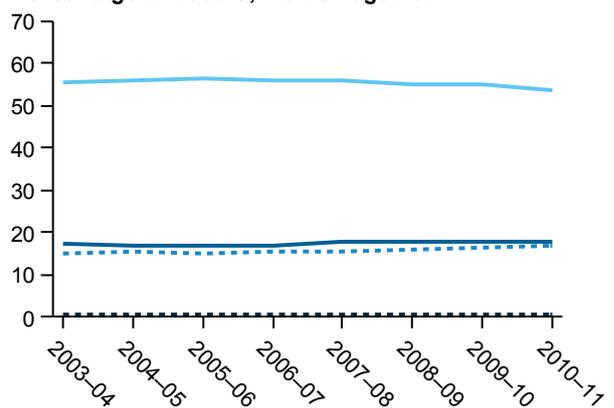
Percentage of deaths, women aged 75–84



Percentage of deaths, men aged 85+



Percentage of deaths, women aged 85+



Note: Combinations of care include use of permanent RAC and/or respite RAC and/or community care. Figure excludes use of ACAP and TCP.

Source: Tables A2.22, A2.23.

Figure 2.10: Use of aged care services in the 12 months before death, by age, sex and year of death, 2003–04 to 2010–11 (percentage of deaths)

3 Take-up of approved care: a cohort analysis

In Chapter 2 we saw that, over the years included in the study, around 6% of people aged 65 and over had an ACAT assessment in a year (Table A2.3). Also, almost one-third of people who died had an assessment in the preceding 12 months. In this chapter, we examine the relationship between assessment by an ACAT and the subsequent use of aged care services.

3.1 Overview

A cohort of 40,870 ACAP clients was used to investigate the take up of care approved during an ACAP assessment. The cohort consisted of people aged 65 and over who had a complete assessment in 2009–10 and who had not used aged care services, except TCP, in the preceding 3 years. Program use within 12 months of a reference assessment was then identified for the cohort.

Approvals

- Overall, 83% of the cohort received an approval at their reference assessment to use a program requiring an ACAT assessment. Slightly over half the cohort (52%) were approved to use permanent RAC, and a further 15% were approved for packaged care but not permanent RAC. The remaining 16% received approvals for respite RAC and/or TCP only.
- Approval patterns varied with age, sex, carer availability, English proficiency, housing tenure and health status.
- People with a non-resident carer or living in a retirement village were more likely than others to have any approvals, and to be approved for permanent RAC in particular. Among the demographic groups examined, people without a carer were the most likely to have an assessment that did not result in an approval (29%).
- People were more likely to get an approval for permanent RAC if:
 - they were assessed in hospital, or
 - they had a diagnosis of dementia, or
 - they had cancer or tumours (neoplasm) reported as the main health condition.
- People with an injury as the main health condition were more likely than others to be approved for TCP only.
- Just over one-fifth of the cohort was reassessed within 12 months, while just under one-fifth died within 12 months.

Program use

- Overall, nearly three-quarters of the cohort used an aged care service in the year after their reference assessment. Many people accessed more than 1 care program.
- The highest care level approved was not always the one most likely to be used, and – apart from people with only an approval for TCP – less than half of people used their highest care level approved. There is a variety of reasons why this happens – both personal and program-related.

- Take-up of permanent RAC was highest among people assessed in hospital, those reported with dementia and those with cerebrovascular disease (CBV) as the main health condition.
- Use of permanent RAC was more closely associated with multiple activity limitations than with multiple diagnoses.
- Many people with ACAP approvals did not use any of their approved services. For example, even among people with both a recommendation and approval for permanent RAC, only 64% went into permanent RAC within 12 months, while 18% did not access any aged care programs. Again, there are a number of reasons why this may happen.
- People without an ACAP approval may still access HACC or VHC. Nearly two-fifths of the cohort accessed HACC or VHC within 12 months, compared with 31% using permanent RAC.

Details of the derivation of the cohort and the analyses are given below.

3.2 Introduction

3.2.1 Selecting the cohort

The analysis of the relationship between assessment by an ACAT and the subsequent use of aged care services was centred around a cohort of ACAP clients. The cohort was based on 2009–10 ACAP clients to make the analysis as contemporary as possible, given the data available. In addition, only clients who had not recently used any aged care services (except transition care) were included so that the analysis was limited to a group of people who were likely to be just starting their use of aged care programs. (Note, however, that people can access HACC and VHC without first seeking an ACAT assessment.) TCP use alone before the reference assessment was not sufficient to exclude an ACAP client from the cohort because of its short-term nature in conjunction with its special relationship with discharge from hospital.

The study cohort was selected as follows. Cohort members were:

- a 2009–10 ACAP client who was aged 65 or over on 1 July 2009, and
- who had a complete ACAT assessment in 2009–10, and
- who had not used an aged care service (non-assessment) program apart from TCP in the 3 years before the start of their first complete ACAT assessment in 2009–10.

Using these rules, a cohort of 40,870 ACAP clients was identified, accounting for 1.4% of the population aged 65 and over and nearly one-quarter of 2009–10 ACAP clients (tables A1.1, A2.3). The reference assessment for a client – used to identify the 12 month window examined for post-assessment program use – was the client’s first complete ACAT assessment in 2009–10. Just under 85% of the cohort either had never had an earlier assessment or their previous assessment was more than 3 years earlier (Table A3.1). For some of those with an earlier assessment, that assessment had been incomplete, so that 87% of the cohort had not had a *complete* assessment in the preceding 3 years – usually not at all. Moreover, before 1 July 2009 an ACAT approval to take up care was valid for only 12 months. This means that assessments finalised over a year before the reference assessment began were no longer valid; 95% of the cohort had not had a complete assessment within the previous 12 months. Consequently, for most cohort members, use of programs requiring an ACAT assessment related to approvals provided at either the reference assessment or a later assessment.

3.2.2 Presentation of program approval and use

The analysis below shows use of care programs by the cohort in the 12 months after their reference assessment. Because people can use more than 1 program over a year, to allow meaningful analysis and simplify the presentation, the results are given in terms of the 'highest care' approved or used. The ranking of approvals used in the tables is based on whether the care program is residential or in the community, short- or long-term. From highest to lowest, the ranking of ACAT approvals used in the tables is:

- permanent RAC – may have also been approved for other programs
- packaged care – may have also been approved for respite RAC or TCP
- respite RAC – may have also been approved for TCP
- TCP – no other approval
- no approval.

This ranking also reflects the likelihood of the ACAP client having an earlier assessment: 7% of cohort members approved for permanent RAC had a complete assessment in the previous 12 months compared with 4% approved for a care package but not permanent RAC, and 2% with an approval only for respite RAC and/or TCP (Table A3.1).

When looking at program use, a similar hierarchy is used. However, because people can access HACC and VHC without an ACAT approval, use of these 2 programs was also included in the hierarchy. Programs requiring an ACAT approval were ranked above those that did not. The ranking employed in the tables reporting program use is therefore:

- permanent RAC – may have also used other programs
- packaged care – may have also used respite RAC, TCP, HACC or VHC
- respite RAC – may have also used TCP, HACC or VHC
- TCP – may have also used HACC or VHC
- HACC or VHC
- no program use.

Among the study cohort, 83% received an approval at their reference assessment to use a program requiring an ACAT assessment (Table A3.1). Just over one-fifth of the cohort was reassessed within 12 months, and 18% died (Table A3.9).

3.2.3 Factors affecting take up of care

ACAP clients do not always take up approved care. There are several reasons why a person may not access programs for which they have an approval. Although service availability may be the cause in some cases, it is not the only reason. In general, the period of time between the ACAT approval and commencement of care may be affected by factors other than time spent 'waiting' to enter/receive a service, and these factors may differentially affect take-up of residential and community-based care. Such factors include:

- client choice not to enter or commence care immediately, but to take up the option at a later time, or not at all, which is consistent with many older people's desire to remain at home for as long as possible
- personal commitments of the client, such as the need to organise the sale of assets before commencing care

- hospital discharge policies and practices
- availability of informal care and services as an alternative to formal care programs
- variations in perceived quality of care, care fee regimes and building quality, which influence client choice of preferred service and/or delays their take up of care (for example, a person may prefer to access HACC services rather than packaged care)
- the lack of availability of the level of approved care in a location of choice for the client
- personal preference to use private care services rather than a government program.

And, of course, some people may die after the assessment but before taking up care. (SCRGSP 2014: adapted from Box 13.5).

In addition, some approvals may be provided just in case the preferred care cannot be accessed, or to allow for short-term contingencies. For example, a person approved for a CACP may also be approved for low-level RAC in case the CACP care cannot be arranged. Also, respite RAC may be approved in case carer arrangements may be delayed or fall through. The relative importance of the various reasons for delaying or not taking up approved care is not known.

In contrast, there are also cases in which people access programs that require a different approval than any they obtained in their ACAT assessment. In these cases, the ACAP client needs to have a re-assessment to get the relevant approval. There are 2 reasons why this may happen:

- An ACAP client may choose *not* to seek approval for some types of care even though they may have been assessed as eligible by the ACAT. Consequently the ACAT will not provide that approval. A change of circumstances or attitude may result in a change of mind, necessitating a re-assessment. For example, a person may not want to go into permanent RAC, and so not seek approval for such care. However, continuing problems managing at home may lead to the person changing their mind.
- A client's health or family circumstances may change to such an extent that they need a different level of care. Such changes could include a period in hospital resulting in the need for transition care, or more long-term changes such as a permanent change in health or the loss of a carer necessitating a change in long-term care arrangements.

The analysis presented below includes an overview of the use of approved care within the long-term care setting recommended for the client by the ACAT at the time of the reference assessment. Program use by the cohort is then examined for a number of cohort subgroups. These include groups based on demographic characteristics, living arrangements and a range of variables showing the health status of a client.

3.3 Cohort program use

Overall, nearly three-quarters of the cohort used an aged care service program in the year after their reference assessment (Table A3.2). More cohort members (38%) used HACC and/or VHC services than any other program – even though these programs do not require an ACAT approval for access. Nearly one-third of the cohort (31%) used permanent RAC and 15% used an aged care package. The short-term care programs of respite RAC and TCP were used by 18% and 10% of the cohort, respectively.

3.3.1 Any use of care programs within approval groups

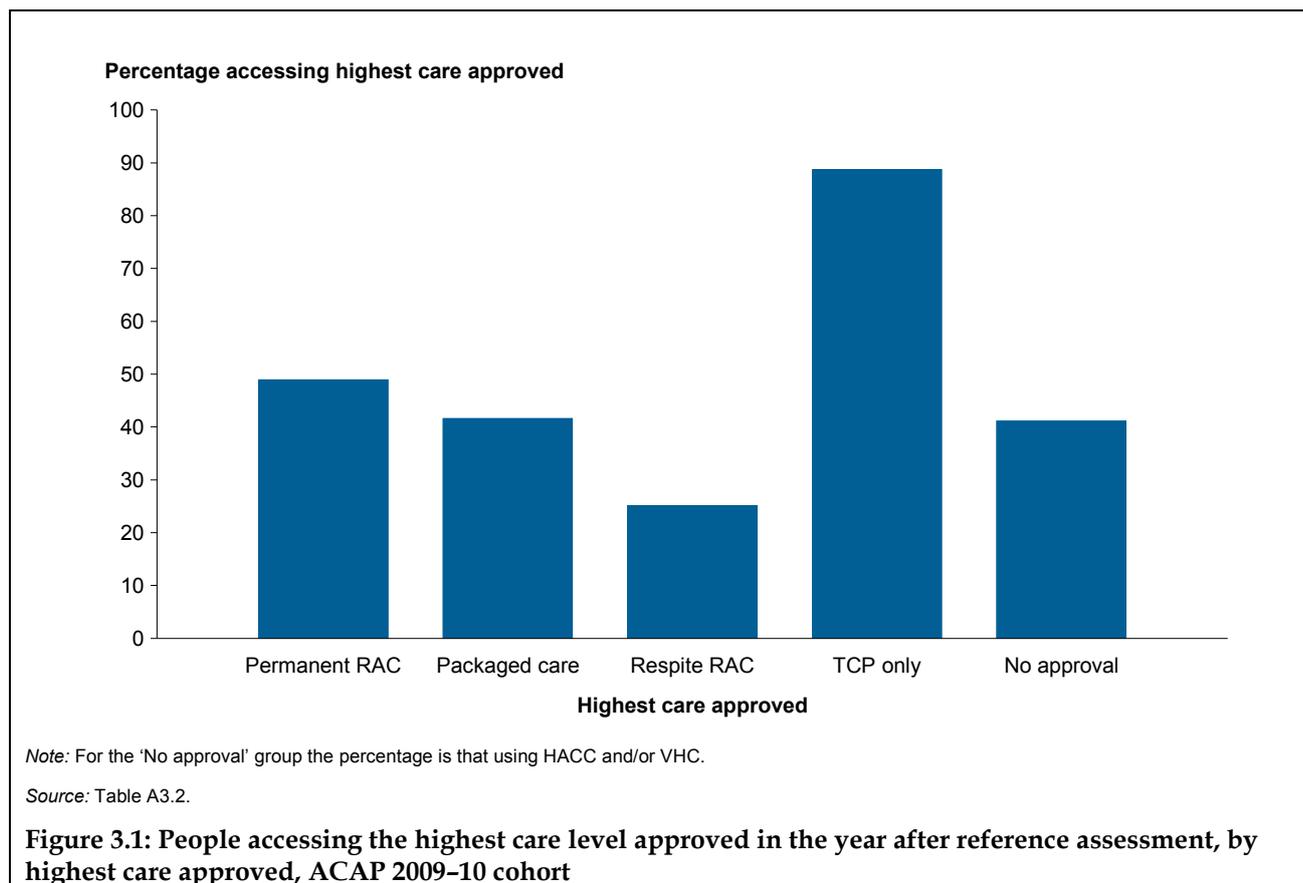
Just over half the cohort (52%) were approved to use permanent RAC, and a further 15% were approved for packaged care (CACP, EACH or EACHD) but not permanent RAC. Smaller proportions got approvals only for respite RAC and/or TCP (11% and 5%, respectively).

Around 80% of people with either permanent RAC or packaged care as their highest approval used an aged care service within 12 months, compared with 67% of people with an approval for respite RAC, but not long-term care. The relatively small group of people with only an approval for the specialist program TCP at their reference assessment were the most likely to access any care (94%). As expected, people without an ACAT approval were the least likely to access care programs. However, even in this group, almost half used a care program.

Apart from people with only an approval for TCP, less than half of people used their highest care level approved (Table A3.2, Figure 3.1). At 89%, people with only an approval for TCP at their reference assessment were the most likely to make use of their approval. This high take-up of TCP most likely reflects that it is a specialised program aimed at people leaving hospital. Just under half (49%) of people approved for permanent RAC used such care within 12 months of assessment, and 42% of people approved for packaged care (but not permanent RAC) became package recipients within 12 months. Just 25% of people in the respite RAC approval group used this type of care.

There were 2 approval groups for whom the most common program used was *not* the highest approved care level. Although 42% of people approved for packaged care but not permanent RAC used an aged care package, more (50%) used HACC and/or VHC. Also, among people approved for respite RAC but not permanent RAC or a care package, just 25% used respite RAC within the year; however, nearly half accessed HACC or VHC services (Table A3.2). Moreover, a similar proportion of people with an approval for permanent RAC (23%) used respite RAC. These results echo findings from earlier analyses showing the low take-up rate for people approved for respite RAC (AIHW 2010), and the use of respite RAC as a stepping stone into permanent RAC (AIHW 2013b).

HACC and/or VHC services were commonly accessed by all approval groups. At 29%, people with an approval for permanent RAC were the least likely to use these non-ACAP services. Around half of those with other ACAT approvals used HACC or VHC – a higher usage rate than among cohort members without an ACAT approval (41%).



3.3.2 Details of use of care programs

As seen above, there were many people who did not take up the highest care approved. However, often other care programs were accessed. Also, although some people used only 1 care program in the 12 months after assessment, many accessed a number of programs to meet their needs (Table A3.3).

Of people approved for permanent RAC, just under half (49%) used such care. However, three-fifths of the 51% who did not go into permanent RAC used other care programs (that is, 30% of the approval group) (Table A3.3). Twelve per cent of people with an approval for permanent RAC relied on HACC or VHC only and 10% stayed in the community on packaged care, with most of these also accessing other community care services (HACC or VHC). The remainder accessed only the ACAP-related short-term programs of respite RAC and TCP (8%, predominately respite RAC, perhaps also using HACC or VHC). Even among people who were approved for permanent RAC and who entered this care within 12 months of approval, about one-fifth also used some community care and nearly one-quarter used respite RAC or TCP (but not community care).

Similarly, although 42% of people approved for packaged care used these programs (Table A3.2), about one-fifth (19%) used only HACC or VHC services and 8% used respite RAC and/or TCP (Table A3.3). In addition, HACC or VHC services were used by about half of those who were approved for and used packaged care (and who did not enter permanent RAC in the 12 months after assessment).

Overall, 18% of the cohort used only HACC or VHC, including many people with an ACAT approval. The apparent disconnection between approval and use suggested by the above

statistics could have been due to a range of factors such as: availability problems; personal preference; access to alternatives (such as private care); the provision of 'just in case' approvals; and death before care could be accessed (see Section 3.2.3).

As discussed above, almost half (49%) of the people who did not receive any approvals at the reference assessment used aged care services in the 12 months following assessment, with two-thirds using only HACC or VHC (33.0/49.3) (Table A3.3). The remainder used programs requiring an assessment, indicating that they had another ACAT assessment at which they got an approval for RAC, packaged care or TCP.

As we have seen, the ACAT assessment covers a range of care types. However, as discussed in Section 3.2.3, a client may choose *not* to seek approval for some types of care even though they may have been assessed as eligible. We have also seen that some people used higher care programs than those approved in their reference assessment (Table A3.3). This difference between highest care approved and highest care used could therefore have been either because the client had not sought an approval to use the higher level program at the time of the reference assessment or because their health or family circumstances changed to such an extent that they needed a different level of care. Apart from a small proportion of cohort members with higher active approvals resulting from assessments ending after 1 July 2009, people accessing higher care programs than those approved in their reference assessment must have had a further assessment to obtain the relevant approvals. Around 13% of people without an approval for permanent RAC but with at least 1 ACAT approval at their reference assessment – that is, for respite RAC, packaged care or TCP – were living in residential care within 12 months of their reference assessment.

People whose highest approval was for TCP were more likely than those in the packaged care and respite RAC approval groups to use their approval and not use care that required a new assessment: nearly 70% of cohort members approved only for TCP accessed transition care but not RAC or a care package (Table A3.3). The corresponding figures for people whose highest approval was for packaged care and respite RAC were 37% and 16%, respectively.

3.3.3 By recommended long-term care setting

As part of the assessment, the ACAT makes a recommendation concerning the long-term care setting of the client. In particular, the ACAT recommends whether the client should live in the community and, if not, whether they should live in high-level or low-level residential care. Overall, around two-thirds of our study cohort was recommended to remain living in the community (Table A3.4), and, even among people approved for permanent RAC, a substantial proportion was recommended to live in the community (41%). The high proportions recommended to live in the community are not surprising given that for most cohort members the reference assessment was their first assessment under ACAP.

Recommended to live in the community

Among people recommended to live in the community, around one-third (31%) had an approval for permanent RAC (Table A3.4). This high proportion could be related to either the client and/or family pressing for this approval, or reflects the provision of 'just in case' approvals. The possible influence of family members is seen in the high proportion of approvals for permanent RAC among cohort members recommended to live in the community who had a carer compared with those who did not – 34% compared with 18%. Differences in approval patterns by carer status are discussed further in Section 3.4.

Overall, only 27% of people with an approval for permanent RAC – equating to 8% of those recommended to live in the community – went into such care. Many of these had also used community care and/or respite or transition care (20% out of 27%), adding evidence to the existence of ‘just in case’ approvals. Among people who were recommended to live in the community and who did not have an approval for permanent RAC, up to 13% moved into permanent RAC within a year of their assessment (Table A3.4).

People recommended to live in the community who had an approval for respite RAC but not for long-term ACAP-related care were more likely either to use HACC and VHC (30%) or not to use any of the care programs in the study (33%) than to use respite RAC (16%) (Table A3.4). As expected from earlier results, a large majority of people with a TCP approval (over 71%) used at least this care level.

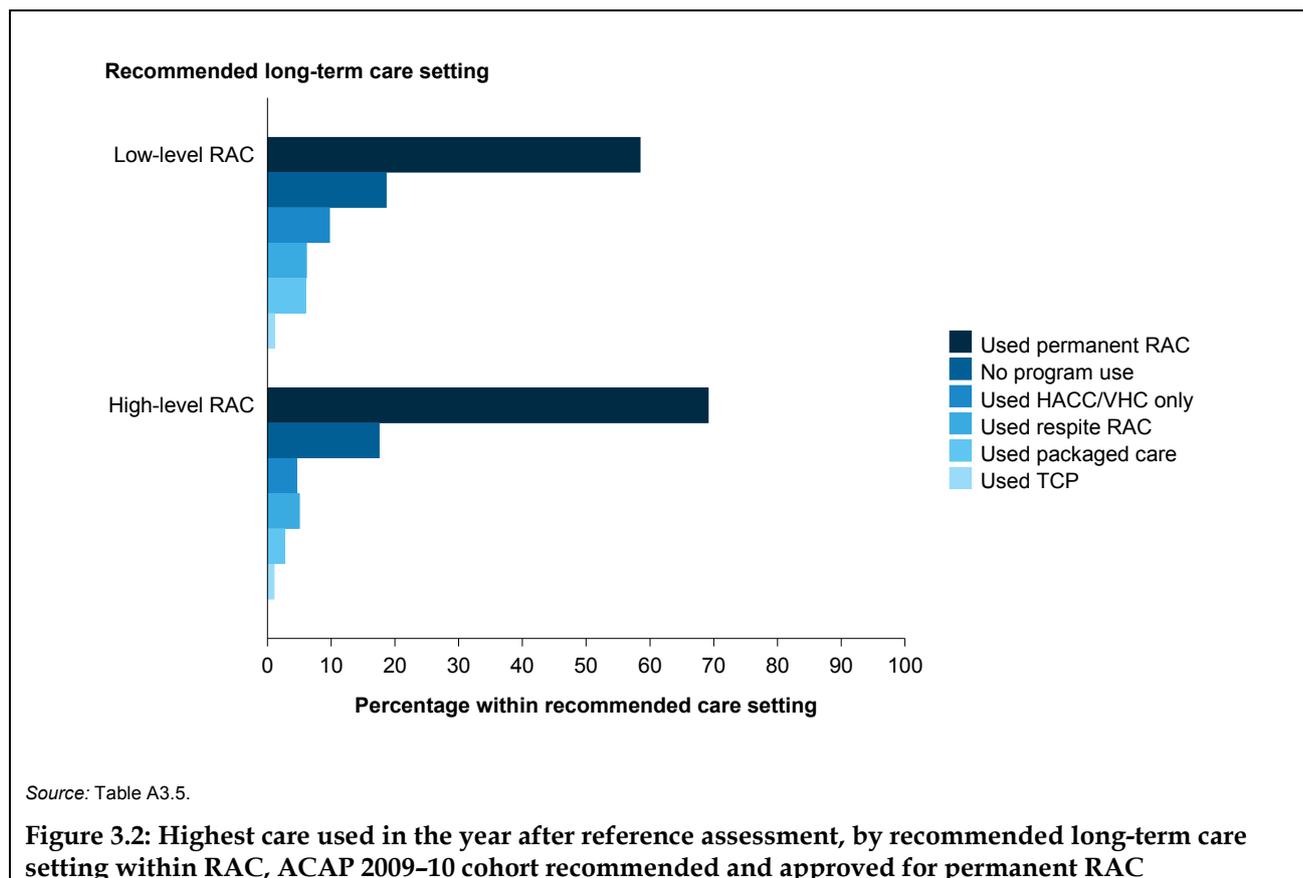
Around 20% with an approval for permanent RAC or packaged care only used HACC or VHC services and between one-quarter and one-fifth did not access any aged care services. On the other hand, around one-third (34%) of people without an approval accessed only HACC and VHC services, while 12% used permanent RAC or packaged care in the next 12 months, indicating a change in circumstances or attitudes and a subsequent ACAT assessment.

Recommended to live in residential care

Only a small proportion of those recommended to live in RAC did not have an approval for permanent RAC (4%, or 527 people). However, even among those with both a recommendation and approval for permanent RAC, only 64% went into permanent RAC, while 18% did not access any aged care programs within 12 months. Some of these may have died before being able to take up care (see Section 3.4.3). A little over one-third of those who entered permanent RAC also used community care programs and/or short-term care.

Looking at level of care, just over two-fifths (44%) of people with an approval for permanent RAC and a recommendation to live in residential care were recommended for low-level RAC (Table A3.5). Interestingly, irrespective of whether the cohort member was recommended to live in low- or high-level care, almost one-fifth of people approved for permanent care did not use any aged care programs in the 12 months after assessment (Figure 3.2, Table A3.5). However, people recommended for high-level care were more likely than those recommended for low-level care to move into residential care (69% versus 58%).

Among people with an approval for permanent RAC, similar proportions of people who were recommended for low-level and high-level care had respite care or TCP as the highest care program used. However, as might be expected, people recommended for low-level care were more likely to either use packaged care (but not permanent RAC) or only HACC or VHC. Also, among those who did move into RAC, people with a low-level care recommendation were more likely than those with a high care recommendation to also have used community care and/or respite RAC or transition care, especially the last two.



3.4 Program use by client characteristics

In this section, the take-up of approved care is examined by client demographic and health characteristics. A range of characteristics are considered, including age, sex, English proficiency, living arrangements, number of care needs and health conditions largely responsible for the need for assistance. Note that analysis by Indigenous status has not been included due to the small number of people in the ACAP cohort who identified themselves as Indigenous.

There are a number of client demographic characteristics that should not change over time (date of birth, sex, country or birth). However, sometimes different values are reported in different data sets. For the current analysis, preferred values for these characteristics were derived using the data from all programs in the PIAC database reporting values (see Appendix B). In general, the value that was reported in at least half the programs is that used. Note that for country of birth – used to derive English proficiency group (EP group, see Box 3.1) – broad regions were used to reduce differences due to reporting variation. For characteristics that can change over time, the value reported at the time of the reference assessment is used. To simplify the presentation of results, percentages of the cohort with particular characteristics are based on the whole cohort, including people with any missing information for the characteristic of interest.

3.4.1 Age, sex and background

Cohort profile

A majority (57%) of the cohort were female (Table A3.6) – a slightly higher proportion than seen in the older population as a whole (55%) (Table A1.1). The mean age of the ACAP cohort was

81.4 years (Table A3.6). The women tended to be older than the men: 28% of men in the cohort were aged 85 and over, with an average age of 80.7 years, compared with 35% of the women being very old and having an average age of 82.0 years.

Nearly one-quarter of the cohort were migrants from countries among whom at least 15% could not speak English well (that is, in EP groups 2 to 4) (Box 3.1, Table A3.7). Those in EP groups 2–4 had an average age close to the cohort mean (81.2 years versus 81.4).

Box 3.1: English proficiency groups

The English proficiency (EP) group classification is used to indicate a migrant's level of English proficiency using an English proficiency index, the person's country of birth and the number of that country's immigrants living in Australia (DIMIA 2003). The EP index is defined as the percentage of recent immigrants (those entering in the 5 years before the Census) who speak English only or another language and 'good English'. Good English is defined as those who reported at the Census that they spoke 'English Only' or spoke English 'Very Well' or 'Well'. The 2001 English proficiency groups were defined such that:

- EP0 = Australian born
- EP1 = All countries rating 98.5% or higher on the EP index with at least 10,000 residents in Australia
- EP2 = Countries rating 84.5% or higher on the EP index, other than those in EP1
- EP3 = Countries rating 57.5% to less than 84.5% on the EP index
- EP4 = Countries rating less than 57.5% on the EP index.

Program approval and use

Despite tending to be younger, men were slightly more likely than women to get an approval for permanent RAC (53% versus 51%) and less likely to be approved for packaged care but not permanent RAC (14% versus 16%) (Table A3.6). These patterns were reflected in the distribution of highest care program used, although at lower percentage levels (Table A3.8, 'All approvals' section).

Once approved for permanent RAC, men and women had similar take-up rates of such care (49%), and, in general, when comparing take-up by men and women, there were only small differences in the distributions of highest care program used within the highest approval groups. These similarities mask considerable differences in circumstances between men and women in the cohort. For example, women in the cohort tended to be older and to be more likely to have a non-resident carer (37% versus 22%), while the men were more likely to have a co-resident carer (59% versus 46%) and to live in a home they owned (65% versus 60%).

These results for take up of permanent care seem to be at odds with the earlier finding that, within a financial year, women were noticeably more likely than men to be using permanent RAC (Table A3.5). These differences are explained by the combined effect of several factors:

- Overall, women aged 65 and over were more likely to be in the cohort than men, with 1.49% of women aged 65+ thinking of accessing care services for the first time (by having an ACAT assessment) compared with 1.32% of men.
- However, very old men were more likely to be in the cohort than very old women (3.91% versus 3.37%).

- Women have a longer life expectancy than men.
- Women had greater population use of permanent RAC in the past, which has a carry-over effect.

Taken together, these patterns, along with the similar take-up rates of permanent RAC, mean that women tend to start receiving assistance at a younger age and use it for longer, leading to higher population usage rates.

Not surprisingly given our earlier findings, older people were considerably more likely to be approved for permanent RAC than younger people (44% of 65–74 year olds compared with 61% of people aged 85 and over) (Table A3.6). Very old people were also more likely to have an approval for respite RAC as their highest approval; this pattern was stronger for women than men.

Overall, 37% of very old people (85+) entered permanent RAC within the year, compared with 31% of the whole cohort (Table A3.8). Much of this difference was caused by people without an initial approval for permanent RAC moving into such care after receiving approval at a later assessment. Of the groups examined, among people with only an approval for TCP those aged 85 and over were the least likely to use this care but not higher level care: 57% compared with 69% for all cohort members with only a TCP approval. One-fifth of very old people with only an approval for TCP at their reference assessment moved into permanent RAC within a year, compared with 13% of the cohort with just this approval.

Migrants born in countries where they were less likely to be proficient in English (EP groups 2–4) were slightly less likely than others to be approved for permanent RAC and more likely to be approved for packaged care but not permanent RAC (Table A3.7). In addition, this group had lower than average take-up rates of permanent RAC by those approved for such care and higher take-up rates of care packages (Table A3.8). Consequently, these cohort members were a little less likely than others to have moved into permanent RAC within the year following assessment (28% versus 31% for the whole cohort), and more likely to have used packaged care but not permanent RAC (14% versus 12%).

3.4.2 Living arrangements

Cohort profile

At the time of the reference assessment, slightly over half of the cohort (51%) were living with a carer, and a further third (31%) had a non-resident carer; 15% were recorded as not having any carer (Table A3.7). People with a non-resident carer at the time of assessment tended to be older than others, with an average age of 83.0. On the other hand, those without a carer tended to be younger (mean age of 79.9) suggesting that these people seek assistance earlier than others.

Just 75% of the cohort were living in their home that they either owned or were buying when they were assessed; 12% were renting and 10% were living in a retirement village or supported accommodation (Table A3.7). Renters tended to be younger than average (mean age of 78.9), while those in retirement villages or supported accommodation tended to be older (mean age of 84.3).

Program approval and use

Looking at carer availability, and reflecting the mean ages of clients, cohort members without a carer were least likely to receive an approval for permanent RAC: 43% compared with 52% of those with a co-resident carer and 55% with a non-resident carer. By contrast, people without a

carer were more likely than others to be approved only for transition care (8% versus under 4%) (Table A3.7). They were also the most likely to have no approval in place by the end of their reference assessment (29% versus under 15%). People with a co-resident carer were more likely than others to have an approval for respite RAC as their highest approval (15% compared with under 9% in the other carer groups).

The above patterns are echoed in program use (Table A3.8). People with either a co-resident carer or no carer had similar rates of transition into permanent RAC (29% and 27%, respectively). However, 35% of cohort members with a non-resident carer (who also tended to be older than others) made this move. People with a non-resident carer were also less likely than others to have no program use: 23% had no program use compared with 29% of people without a carer and 27% with a co-resident carer.

Within all approval groups, people with a co-resident carer were less likely than those with a non-resident carer to take up permanent RAC or packaged care. However, those with a non-resident carer had relatively low use rates of respite RAC and TCP within all approval groups.

Reflecting their older age – and perhaps also that they could already be receiving some assistance through their accommodation provider – people who were living in a retirement village or supported accommodation at the time of their reference assessment were much more likely than others to be approved for permanent RAC (64% compared with around 50% of renters and home owners) (Table A3.7). Renters had relatively high rates of approval for care packages, while approval for respite but not permanent RAC was most likely among home owners. Given these patterns, the high use of permanent RAC (41% versus 31% for the cohort) by people in a retirement village or supported accommodation is not surprising (Table A3.8). However, despite very similar approval rates at their reference assessments, people living in rental accommodation were more likely than those living in their own home to have moved into RAC within 12 months (33% versus 29%).

3.4.3 Health status

Cohort profile

During the reference assessment, ACATs recorded an average of 5.8 diagnoses giving rise to care needs (Table A3.10). In addition, for the cohort there was an average per person of 2.3 limitations related to activities of daily living (ADLs) and 4.1 limitations related to instrumental activities of daily living (IADLs) (see Box 3.2 for definitions), resulting in an average of 6.4 activity limitations affecting care needs per client.

Almost one-fifth (19%) of the cohort had dementia as the main health condition contributing to need for assistance, and an additional 6% had dementia reported as a secondary diagnosis (Table A3.9). For 10% of the cohort, musculoskeletal disease was the main cause of care needs. Cardiovascular problems were also common, and heart disease and CBV problems were each the main health condition for 8% of the cohort. Health symptoms reported in their own right as affecting need for assistance were reported as the main health condition for 13% of the cohort.

Just over 20% of the cohort had their reference assessment while in hospital, and a similar proportion was reassessed within 12 months.

Box 3.2: Activity limitations measured at assessment

During the assessment process, ACATs assess the care needs of clients with respect to routine activities that people tend to do every day without needing assistance, generally called activities of daily living (ADLs). Limitations relating to 5 ADLs are recorded:

- self-care
- movement activities (such as changing position or manipulating objects)
- moving around places
- communication
- health-care tasks.

People may also have needs with activities that are not necessary for fundamental functioning, but that are necessary for an individual to live independently in a community – instrumental activities of daily living (IADLs). Information on limitations in 5 IADL domains are recorded by ACATs:

- transport
- social participation activities
- domestic assistance
- meals
- home maintenance.

Program approval and use

People with an approval for permanent RAC or packaged care tended to have more diagnoses than others recorded by the ACAT (Table A3.10). In addition, those approved for permanent RAC averaged more activity limitations than others (7.2 compared with 3.9 for those with no approvals), although people with an approval for TCP only also averaged high levels of limitation (7.0).

In a number of health groups, at least two-thirds of people received an approval for permanent RAC compared with 52% for the cohort as a whole (Table A3.9). These included:

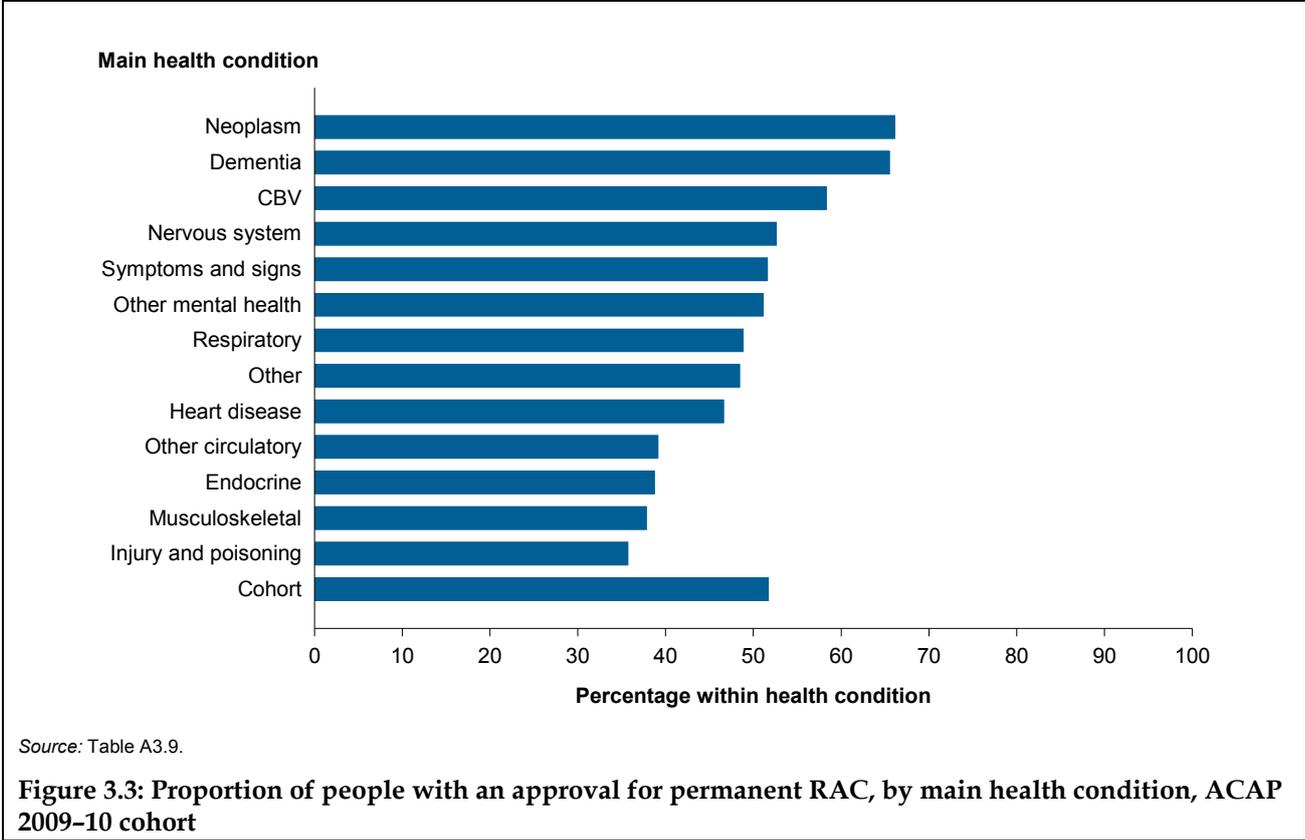
- people assessed in hospital
- people with a diagnosis of dementia
- people with cancer or tumours (neoplasm) reported as the main health condition.

These groups also had relatively few people with no approvals.

By contrast, such an approval for permanent RAC was provided to under 40% of people who:

- were reassessed in 12 months (36%) or
- had a main health condition related to the endocrine, circulatory (other than CBV or heart disease) or musculoskeletal systems (38–39%) or
- had a main health condition of injury or poisoning (36%) (Figure 3.3).

For all but the last of these groups, over one-fifth received no approvals from their reference assessment. People whose care needs were largely the result of injury or poisoning were much more likely than others to get an approval only for transition care: 26% compared with 5% for the cohort as a whole. Related to this is the high proportion of people assessed in hospital who only received an approval for TCP (14%).



Use of permanent RAC was more closely associated with multiple activity limitations than with multiple diagnoses: 42% of people with limitations in 8 or more areas used permanent RAC within 12 months of assessment, compared with 35% of those with 8 or more diagnoses reported by the ACAT (and 31% of the entire cohort) (Table A3.11). People assessed in hospital were more likely than others to move into permanent RAC (49%) and less likely to use HACC or VHC (5%) or not to access any care programs (16%).

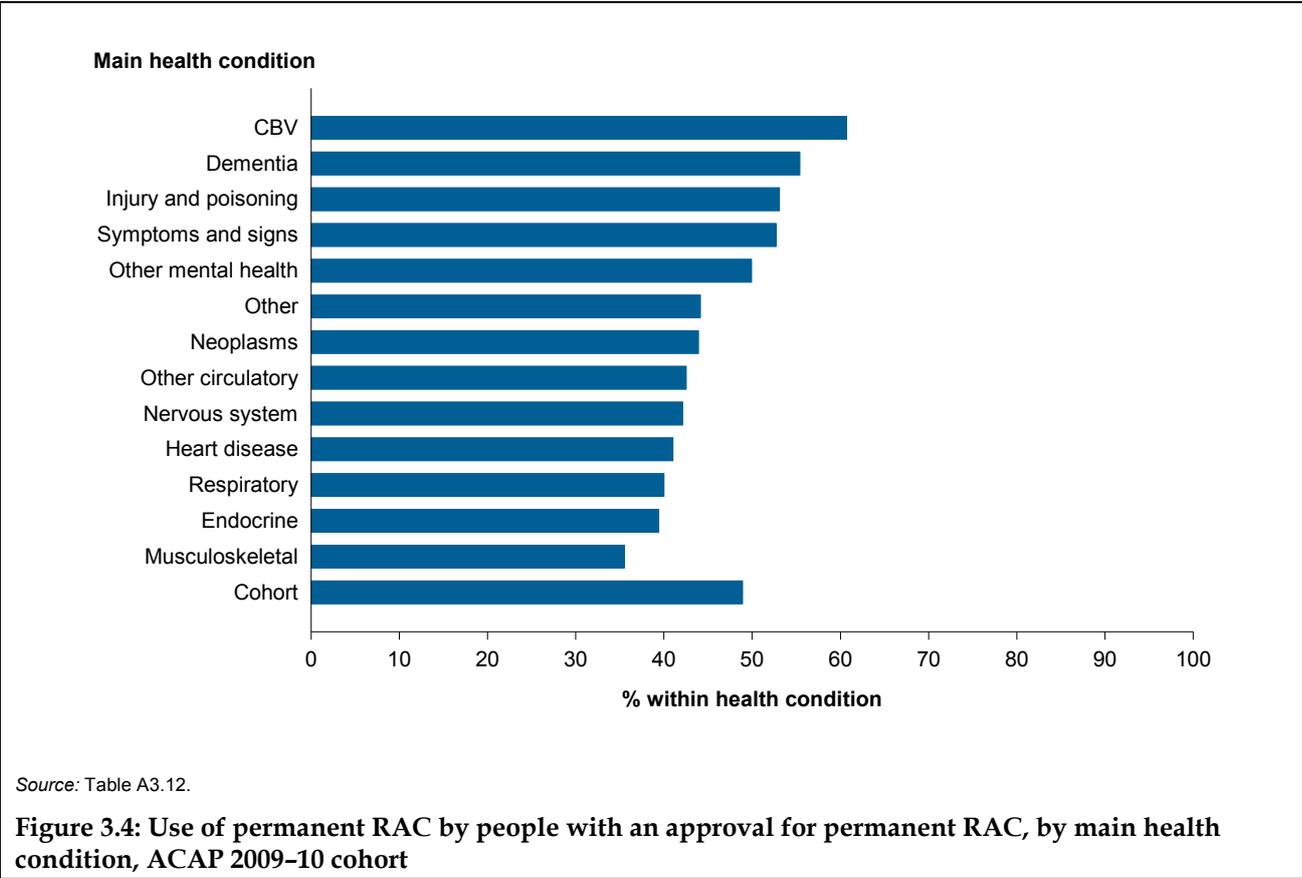
At 45%, people who were reassessed within 12 months were more likely than the cohort as a whole to move into RAC within 12 months of their reference assessment. However, they were less likely to use HACC or VHC (13% versus 18% for the cohort as a whole), and considerably less likely than others to have no program use (11% versus 27%).

Looking within approval groups, two-thirds of people assessed in hospital who received an approval for permanent RAC went into such care – the highest proportion seen in this analysis (Table A3.11). Among people whose highest approval was for packaged care, those assessed in hospital were less likely than others to use a care package and/or permanent RAC (34% in total compared with 49% for the cohort). They were also more likely to have only used transition care, perhaps with HACC or VHC (41% versus 9% for the cohort).

In all approval groups except the highest (that is, with an approval for permanent RAC), people who had a further assessment were much more likely than others to move into residential care: 29% of reassessed people with no initial approval went into permanent RAC, as did around 44% of reassessed people with an initial approval for packaged care or respite RAC. For the cohort as a whole, the corresponding percentages were all below 14%.

As would be expected from the approval patterns, program use varied with the main health condition affecting care needs (Table A3.12). Overall, at the high end, around two-fifths of all people with dementia or CBV disease as their main health condition moved into permanent residential care. In contrast, under one-fifth of people whose main condition related to the endocrine or musculoskeletal systems made this move. These last 2 groups, along with people with a main health condition related to the nervous system, had relatively high use of only HACC and/or VHC services (around 24%). Almost one-third of people assessed because of an injury used only transition care out of the ACAP-related programs; this was over 5 times the cohort average.

Among people approved for permanent RAC at their reference assessment, the main health conditions associated with high take-up of this care were: CBV disease; dementia; injury; and symptoms and signs not assigned to a particular disease or disorder (Figure 3.4). People with dementia or symptoms and signs reported as their main health condition were more likely than others to move into RAC when an approval for such care had not been given at the reference assessment (Table A3.12). In addition, a relatively high proportion (18%) of the small number of people with a non-dementia mental health condition and with approval for respite RAC care (and perhaps also TCP) moved into permanent RAC within 12 months of assessment.



Having an approval for TCP as the highest approval was uncommon for a number of health conditions (Table A3.9). No more than 3% of people (compared with a cohort average of 5%) fell into this category if their main condition related to the endocrine system, dementia, other mental health conditions or the nervous system. People in the TCP approval group with a main health condition related to musculoskeletal disease or injury had high proportions using this care, with TCP being the highest care program they accessed (75% or more).

3.4.4 Cohort members who died

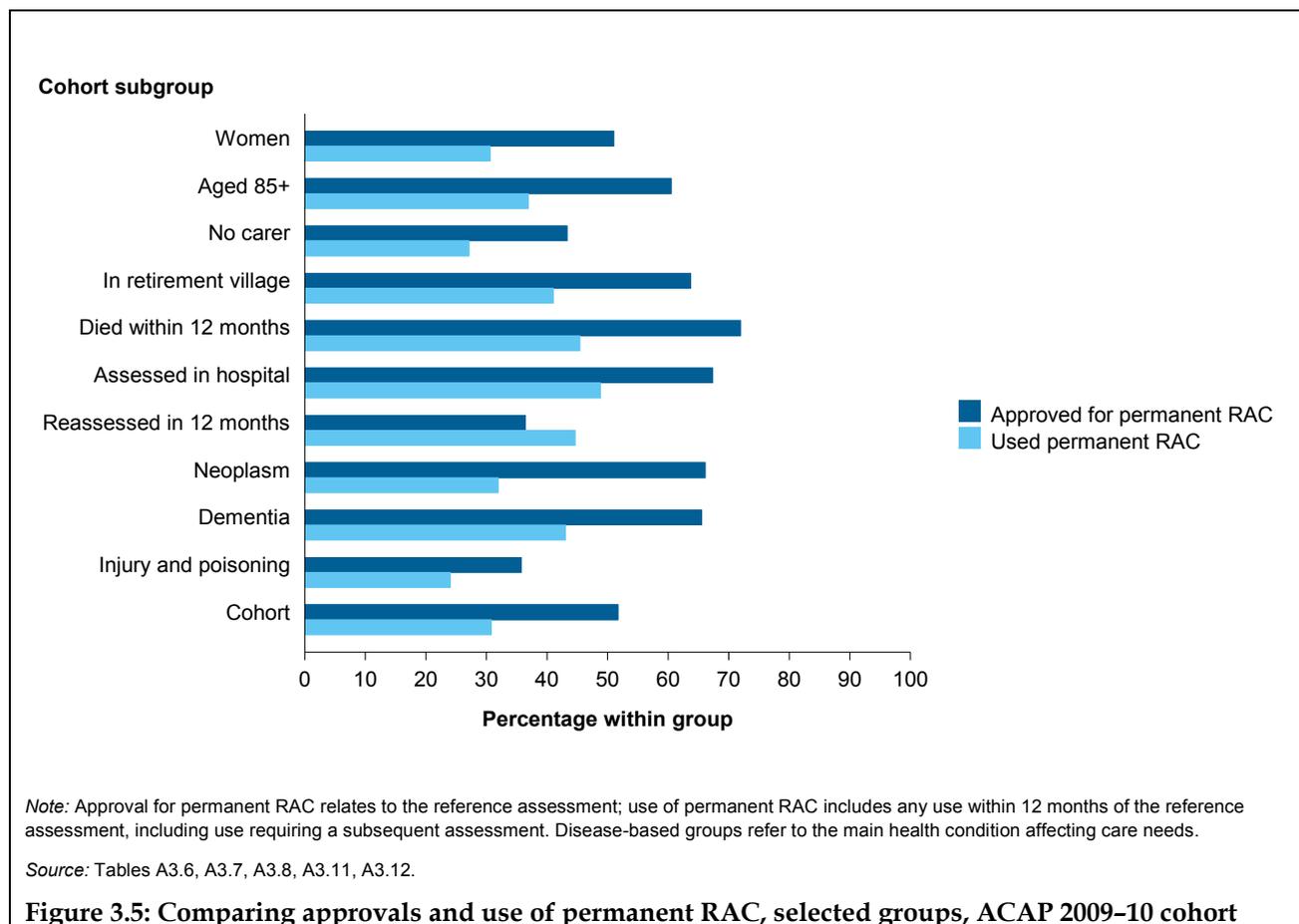
Almost 1 in 6 cohort members (18%) died within 12 months of the completion of their reference assessment (Table A3.9). These people were more likely than others to get an approval for permanent RAC at their reference assessment. Nearly three-quarters (72%) of cohort members who died within 12 months of their reference assessment had received an approval for permanent RAC at that assessment, compared with 52% of the cohort as a whole. This was the highest percentage observed among all the groups examined.

Although 72% of cohort members who died within 12 months of their reference assessment were approved for permanent residential care, only around 45% – including some who may have been reassessed – moved into RAC within 12 months of their reference assessment (Table A3.11). This proportion is still noticeably higher than that for the entire cohort (31% moved into permanent RAC within 12 months). Like those who were reassessed in 12 months, those who died were less likely than the cohort as a whole to use HACC or VHC (13% versus 18%).

Overall, 23% (1,693) of people who died within 12 months of being assessed had no program use before their death – slightly less than the proportion for the entire cohort (27%, or 10,819). Consequently, of the nearly 11,000 cohort members who did not have any program use in the year after assessment, almost 16% (1,693/10,819) died within the year, and about 4% of the cohort (1,693/40,870) died within the year without accessing any care programs.

3.5 Conclusion

From the discussion in the preceding sections, it is clear that there is not a direct relationship between approvals and take up of care in the following 12 months. This is true for all care programs, except perhaps TCP for which a majority of approvals were taken up. The divergence between approvals and program use is illustrated in Figure 3.5, which shows both the proportion approved for, and using, permanent RAC for a range of cohort subgroups. Overall, 52% of the cohort were approved for permanent RAC at the reference assessment, but only 31% of the cohort used such care in the following 12 months. Moreover, some of those who did use permanent RAC had not received an approval for such care at their reference assessment. This is demonstrated by the subgroup of people who were reassessed in 12 months of their initial assessment; among this group, the proportion who were initially approved for permanent RAC (36%) was smaller than the proportion who eventually moved into permanent RAC within 12 months (45%).



Just as having an approval does not mean that services will be accessed, having no approvals does not mean that there will be not be any service use. Although within cohort subgroups the proportion of people who didn't use any care programs was often larger than the proportion without an approval, the proportion who only used HACC or VHC (and therefore did not need an ACAT approval) was often between these two.

Appendix A Analysis tables

A1 Tables for Introduction

Table A1.1: Australian population aged 65+, by age and sex, 30 June, 2002 to 2011

Sex/age group	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Men	Percentage of population aged 65+									
65–74	26.1	25.9	25.7	25.7	25.6	25.8	26.0	26.3	26.6	26.9
75–84	14.9	15.2	15.4	15.5	15.6	15.4	15.2	15.0	14.7	14.5
85+	3.4	3.5	3.5	3.7	3.9	4.1	4.2	4.3	4.4	4.5
<i>Total</i>	<i>44.4</i>	<i>44.5</i>	<i>44.7</i>	<i>44.9</i>	<i>45.0</i>	<i>45.2</i>	<i>45.4</i>	<i>45.6</i>	<i>45.8</i>	<i>46.0</i>
Women										
65–74	27.7	27.4	27.1	27.0	26.8	26.9	27.0	27.2	27.4	27.5
75–84	20.3	20.4	20.5	20.3	20.0	19.6	19.2	18.8	18.3	17.9
85+	7.6	7.7	7.7	7.9	8.1	8.3	8.4	8.4	8.5	8.6
<i>Total</i>	<i>55.6</i>	<i>55.5</i>	<i>55.3</i>	<i>55.1</i>	<i>55.0</i>	<i>54.8</i>	<i>54.6</i>	<i>54.4</i>	<i>54.2</i>	<i>54.0</i>
All										
65–74	53.7	53.2	52.9	52.6	52.4	52.7	52.9	53.5	54.0	54.5
75–84	35.2	35.6	35.9	35.8	35.6	35.0	34.5	33.8	33.0	32.5
85+	11.1	11.1	11.2	11.6	12.0	12.3	12.6	12.7	12.9	13.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Population aged 65+ ('000s)	2,465.7	2,511.3	2,558.9	2,611.9	2,664.1	2,736.6	2,805.2	2,890.6	2,986.7	3,087.9
Total population ('000s)	19,495.2	19,720.7	19,932.7	20,176.8	20,451.0	20,827.6	21,249.2	21,691.7	22,031.8	22,340.0
Population aged 65+ as percentage of total population	12.6	12.7	12.8	12.9	13.0	13.1	13.2	13.3	13.6	13.8

Source: ABS 2013.

A2 Tables for Section 2

Table A2.1: People aged 65+ using aged care programs, by program type, 2002–03 to 2010–11

Aged care program	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
	Percentage of clients^(a)								
PRAC ^(b)	27.4	26.6	26.0	26.1	25.4	24.8	24.4	24.2	24.1
RRC ^(b)	5.0	4.9	4.8	4.9	4.8	4.7	4.8	5.0	5.1
TCP	..	..	..	0.1	0.8	1.2	1.5	1.7	2.0
<i>Community care</i>	76.2	77.2	77.5	77.3	78.0	78.7	79.1	79.3	79.4
EACH	—	0.1	0.2	0.4	0.6	0.7	0.7	0.9	1.1
EACHD	..	..	..	—	0.2	0.3	0.4	0.4	0.5
CACP	5.5	5.4	5.4	5.8	6.1	6.3	6.2	6.5	6.5
HACC	67.8	68.7	68.8	68.1	68.6	69.5	70.0	70.2	70.6
VHC	8.9	8.9	9.2	9.6	9.4	8.9	8.6	8.3	7.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Used 2 or more programs (%)	11.8	11.7	11.6	12.0	12.5	12.8	12.8	13.1	13.4
Mean number of programs used	1.15	1.15	1.14	1.15	1.16	1.16	1.17	1.17	1.18
	Number of clients^(a)								
PRAC	176,069	181,896	185,544	190,418	193,793	199,222	202,283	205,342	210,303
RRC	32,308	33,186	34,161	35,474	36,891	37,641	40,041	42,377	44,393
TCP	..	..	..	825	6,363	10,037	12,181	14,384	17,435
<i>Community care</i>	488,981	527,702	553,131	563,012	595,501	632,234	656,468	673,199	694,172
EACH	128	877	1,613	2,897	4,260	5,477	5,989	7,434	9,550
EACHD	..	..	..	281	1,279	2,535	3,148	3,677	4,630
CACP	35,525	37,166	38,251	41,983	46,769	50,347	51,668	55,044	57,194
HACC	434,909	470,009	491,044	495,932	523,781	558,240	580,626	596,201	617,529
VHC	57,205	60,631	66,003	69,970	71,794	71,870	71,335	70,185	67,451
Total number	641,898	683,985	713,699	728,241	763,612	803,247	829,948	849,455	874,112
Clients as percentage of population aged 65+	26.0	27.2	27.9	27.9	28.7	29.4	29.6	29.4	29.3

(a) A client is any person aged 65 and over on 1 July who used at least 1 of PRAC, RRC, CACP, EACH, EACHD, CACP, HACC or VHC in the financial year.

(b) PRAC = permanent RAC; RRC = residential respite care (that is, respite RAC).

Notes

- Age is as at 1 July of the financial year.
- People can use more than 1 program in the year, and so numbers and percentages may sum to more than the corresponding total.

Source: ABS 2013 for population numbers.

Table A2.2: People aged 65+ using TCP, by use of other aged care programs, 2005–06 to 2010–11

Use of TCP and other aged care programs	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Percentage of TCP clients						
TCP only	18.8	17.3	16.6	16.3	16.7	16.5
TCP and PRAC only	8.4	10.2	10.5	9.4	8.2	7.8
TCP and RRC only	1.2	0.7	0.6	0.5	0.6	0.6
<i>TCP and community care only</i>	<i>53.2</i>	<i>50.7</i>	<i>51.2</i>	<i>53.5</i>	<i>54.5</i>	<i>54.6</i>
TCP and HACC/VHC only	41.3	39.3	39.3	41.9	41.3	42.3
TCP and package(s) only	3.2	3.4	3.3	3.6	3.8	3.5
TCP and mixed community care	8.7	8.0	8.6	8.0	9.4	8.7
TCP, PRAC and community care	9.6	12.8	12.8	12.5	11.8	12.5
TCP with other care combination ^(a)	8.8	8.3	8.3	7.9	8.2	8.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of TCP clients						
TCP only	155	1,102	1,664	1,984	2,409	2,873
TCP and PRAC only	69	647	1,052	1,144	1,178	1,358
TCP and RRC only	10	43	64	62	86	97
<i>TCP and community care only</i>	<i>439</i>	<i>3,229</i>	<i>5,142</i>	<i>6,513</i>	<i>7,836</i>	<i>9,517</i>
TCP and HACC/VHC only	341	2,500	3,942	5,108	5,946	7,381
TCP and package(s) only	26	218	334	433	544	618
TCP and mixed community care	72	511	866	972	1,346	1,518
TCP, PRAC and community care	79	814	1,281	1,518	1,700	2,176
TCP with other care combination	73	528	834	960	1,175	1,414
Total using TCP	825	6,363	10,037	12,181	14,384	17,435
TCP clients as percentage of population aged 65+	0.03	0.24	0.37	0.43	0.50	0.58
Population aged 65+	2,611,879	2,664,064	2,736,610	2,805,167	2,890,566	2,986,675

(a) 'Other care combinations' include using respite RAC and community care, with or without permanent RAC.

Notes

1. Age is as at 1 July of the financial year.
2. Components may not sum to the total due to rounding.
3. Population aged 65+ is at 30 June before the start of the financial year.

Source: ABS 2013 for population numbers.

Table A2.3: People aged 65+ assessed under ACAP, by type of assessment closure, 2003–04 to 2010–11

Type of assessment closure	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Percentage of ACAP clients								
Complete (any)	89.6	90.2	92.1	91.6	91.2	90.9	90.8	90.7
<i>Incomplete (any)</i>	<i>13.8</i>	<i>14.4</i>	<i>13.0</i>	<i>13.7</i>	<i>14.4</i>	<i>15.6</i>	<i>15.9</i>	<i>16.7</i>
Incomplete, ended due to death	1.4	1.2	1.1	1.3	1.4	1.4	1.1	1.0
Incomplete, other reason	12.5	13.3	11.9	12.5	13.1	14.3	14.9	15.7
Unknown completion status (any)	2.1	1.6	0.2	0.2	0.2	0.2	0.3	0.3
Had both complete and incomplete assessments	4.9	5.7	5.2	5.4	5.8	6.6	6.8	7.5
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number	109,075^(a)	130,035^(a)	136,693^(a)	169,862	181,123	183,707	166,723	164,513
<i>Also used a service program^(b)</i>	<i>81.0</i>	<i>79.7</i>	<i>80.9</i>	<i>82.8</i>	<i>84.1</i>	<i>84.4</i>	<i>84.8</i>	<i>86.3</i>
Used only an ACAP-dependent program ^(c)	24.5	22.6	24.1	23.7	23.3	23.2	22.6	21.8
Used only HACC and/or VHC	30.7	31.3	30.2	30.2	30.5	30.5	29.5	29.7
Used both an ACAP-dependent program and HACC and/or VHC	25.8	25.7	26.7	28.8	30.2	30.8	32.7	34.8
Clients as percentage of population aged 65+	n.a.^(a)	n.a.^(a)	n.a.^(a)	6.4	6.6	6.5	5.8	5.5

(a) Implementation of ACAP MDS V2 data collection was completed during 2003–04 for all jurisdictions except New South Wales and Queensland. For these 2 states, implementation was completed by the end of 2005–06 (ACAP NDR 2007: Table 1.1).

(b) Includes RAC, CACP, EACH, EACHD, TCP, HACC and VHC.

(c) Includes RAC, CACP, EACH, EACHD and TCP.

Notes

1. Age is as at 1 July of the financial year.
2. Assessments are counted in the year in which they ended. Assessment status is the status of the assessment when the assessment was closed off. People can have more than 1 ACAT assessment in the year, and so percentages may sum to more than the total. Assessment status is as reported.
3. Approval requirements changed on 1 July 2009, with many approvals no longer lapsing after 12 months (DoHA 2009b).
4. Population aged 65+ is at the end of the previous financial year (30 June).

Source: ABS 2013 for population numbers.

Table A2.4: Program use as at 30 September, aged care clients aged 65+, 2002 to 2010

Aged care program	2002	2003	2004	2005	2006	2007	2008	2009	2010
Percentage of clients^(a)									
PRAC	33.3	32.8	31.6	31.8	31.3	29.3	29.1	28.6	28.2
RRC	0.7	0.7	0.6	0.7	0.7	0.6	0.7	0.7	0.8
TCP	..	..	..	—	0.2	0.3	0.3	0.4	0.4
<i>Community care</i>	<i>66.3</i>	<i>66.8</i>	<i>68.1</i>	<i>67.8</i>	<i>68.2</i>	<i>70.2</i>	<i>70.3</i>	<i>70.8</i>	<i>71.2</i>
EACH	—	0.1	0.2	0.3	0.5	0.6	0.7	0.8	0.9
EACHD	..	..	..	..	0.1	0.2	0.3	0.4	0.4
CACP	5.9	6.0	5.8	6.1	6.6	6.5	6.9	6.8	6.9
HACC ^(a)	53.0	53.2	54.3	53.1	52.3	55.2	55.1	56.0	56.8
VHC	10.0	10.3	10.7	11.6	11.8	10.9	10.8	10.3	9.7
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Using 2 or more programs (%)	3.0	3.1	3.2	3.5	3.5	3.6	3.9	3.9	4.0
Mean number of programs used	1.03	1.03	1.03	1.04	1.04	1.04	1.04	1.04	1.04
Number of clients^(a)									
PRAC	130,854	135,200	139,480	143,461	145,605	148,122	149,837	152,880	156,436
RRC	2,610	2,767	2,798	2,968	3,274	3,163	3,617	3,756	4,179
TCP	..	..	..	—	744	1,274	1,658	1,984	2,409
<i>Community care</i>	<i>260,146</i>	<i>275,190</i>	<i>300,533</i>	<i>305,491</i>	<i>316,674</i>	<i>354,440</i>	<i>361,617</i>	<i>379,058</i>	<i>395,222</i>
EACH	87	278	746	1,362	2,276	2,864	3,728	4,098	4,953
EACHD	..	..	..	..	441	1,015	1,666	1,887	2,198
CACP	23,332	24,806	25,774	27,340	30,875	32,963	35,249	36,596	38,275
HACC ^(a)	208,115	219,056	239,744	239,227	243,075	278,797	283,407	299,929	315,551
VHC	39,315	42,574	47,424	52,220	54,870	55,212	55,627	55,345	53,687
Total number	392,535	411,913	441,573	450,624	464,602	505,110	514,562	535,225	555,345
Clients as percentage of population aged 65+	15.9	16.3	17.2	17.2	17.3	18.4	18.2	18.4	18.4

(a) Imprecise start and end dates for use for HACC services may have affected estimates of the number of HACC clients (see Section B6.2 and Table B10).

Notes

1. Age is as at 30 September.
2. People can be clients of more than 1 program at a time, and so numbers and percentages may sum to more than the corresponding total.
3. Population aged 65+ is derived as the average of ABS population estimates for 30 June and 31 December.

Source: ABS 2013 for population numbers.

Table A2.5: Program use as at 30 September, by sex, aged care clients aged 65+, 2002 to 2010

Aged care program	2002	2003	2004	2005	2006	2007	2008	2009	2010
Men	Percentage of male clients^(a)								
PRAC	29.7	29.4	28.4	28.6	28.4	26.8	26.6	26.5	26.5
RRC	0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.9
TCP	..	..	..	—	0.2	0.3	0.4	0.4	0.5
<i>Community care</i>	69.8	70.2	71.2	70.9	71.0	72.5	72.7	72.8	72.7
EACH	—	0.1	0.2	0.4	0.6	0.7	0.9	0.9	1.1
EACHD	..	..	..	..	0.1	0.2	0.4	0.4	0.5
CACP	5.7	5.7	5.5	5.6	6.2	6.2	6.4	6.5	6.6
HACC ^(a)	50.4	50.6	51.6	50.5	49.6	52.8	53.5	54.5	55.2
VHC	17.4	17.5	17.7	18.4	18.4	16.5	15.7	14.6	13.2
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number	115,941	122,112	131,512	135,571	139,639	152,579	156,730	162,715	169,082
Clients as percentage of population	10.5	10.9	11.4	11.5	11.5	12.2	12.2	12.2	12.3
Male population aged 65+('000s)	1,099.7	1,124.6	1,150.4	1,179.0	1,209.3	1,246.2	1,284.2	1,329.6	1,380.0
Women	Percentage of female clients^(a)								
PRAC	34.9	34.3	32.9	33.2	32.6	30.4	30.2	29.5	28.9
RRC	0.6	0.6	0.6	0.6	0.7	0.6	0.7	0.6	0.7
TCP	..	..	..	—	0.1	0.2	0.3	0.4	0.4
<i>Community care</i>	64.8	65.4	66.7	66.4	66.9	69.1	69.2	69.9	70.5
EACH	—	0.1	0.1	0.3	0.4	0.5	0.7	0.7	0.8
EACHD	..	..	..	..	0.1	0.2	0.3	0.3	0.3
CACP	6.1	6.2	6.0	6.3	6.8	6.7	7.0	7.0	7.0
HACC ^(a)	54.1	54.3	55.5	54.2	53.5	56.2	55.8	56.7	57.5
VHC	6.9	7.3	7.8	8.6	9.0	8.5	8.7	8.5	8.1
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number	276,563	289,757	310,031	314,995	324,904	352,499	357,767	372,405	386,094
Clients as percentage of population	20.1	20.7	21.8	21.8	22.1	23.4	23.2	23.5	23.7
Female population aged 65+('000s)	1,375.7	1,397.7	1,420.7	1,445.6	1,472.3	1,506.1	1,541.3	1,584.3	1,631.7

(a) Imprecise start and end dates for use for HACC services may have affected estimates of the number of HACC clients (see Section B6.2 and Table B10).

Notes

1. Age is as at 30 September.
2. People can be clients of more than 1 program at a time, and so numbers and percentages may sum to more than the corresponding total.
3. Population aged 65+ is derived as the average of ABS population estimates for 30 June and 31 December.

Source: ABS 2013 for population numbers.

Table A2.6: Program use as at 30 September, by age group, aged care clients aged 65+, 2002 to 2010

Aged care program	2002	2003	2004	2005	2006	2007	2008	2009	2010
Aged 65–74	Percentage of clients in age group^(a)								
PRAC	18.7	18.1	17.0	17.4	17.3	15.4	15.5	15.1	14.7
RRC	0.5	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.4
TCP	..	..	..	—	0.2	0.2	0.3	0.4	0.4
<i>Community care</i>	<i>81.0</i>	<i>81.6</i>	<i>82.8</i>	<i>82.3</i>	<i>82.3</i>	<i>84.1</i>	<i>84.1</i>	<i>84.5</i>	<i>84.8</i>
EACH	—	0.1	0.2	0.4	0.7	0.8	1.0	1.0	1.1
EACHD	..	..	..	..	0.1	0.2	0.3	0.3	0.3
CACP	5.6	5.7	5.5	5.7	6.2	5.6	5.9	5.9	5.8
HACC ^(a)	72.7	73.7	75.3	74.5	73.7	76.5	76.1	76.5	76.5
VHC	4.2	3.7	3.3	3.3	3.1	2.6	2.5	2.5	2.6
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number	70,994	72,858	77,361	75,325	75,844	86,422	88,087	93,082	98,398
Clients as percentage of population	5.3	5.4	5.7	5.5	5.4	6.0	5.9	6.0	6.0
Population aged 65–74 ('000s)	1,327.3	1,340.8	1,358.5	1,379.7	1,408.1	1,451.5	1,500.4	1,562.8	1,630.5
Aged 75–84									
PRAC	26.5	26.0	24.9	25.0	24.3	22.6	22.4	22.0	21.7
RRC	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7
TCP	..	..	..	—	0.2	0.3	0.3	0.4	0.5
<i>Community care</i>	<i>73.1</i>	<i>73.6</i>	<i>74.8</i>	<i>74.7</i>	<i>75.2</i>	<i>76.9</i>	<i>77.0</i>	<i>77.4</i>	<i>77.7</i>
EACH	—	0.1	0.2	0.3	0.5	0.5	0.7	0.7	0.9
EACHD	..	..	..	..	0.1	0.2	0.3	0.4	0.4
CACP	5.7	5.8	5.5	5.8	6.4	6.3	6.7	6.7	6.8
HACC ^(a)	55.4	55.8	57.1	56.3	56.5	60.3	61.3	63.3	65.0
VHC	15.3	15.4	15.4	15.9	15.2	12.8	11.4	9.4	7.5
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number	182,211	192,676	208,567	209,288	212,622	225,953	224,841	228,785	231,840
Clients as percentage of population	20.8	21.4	22.6	22.3	22.4	23.5	23.2	23.4	23.4
Population aged 75–84 ('000s)	874.4	900.8	922.7	938.4	950.3	960.1	969.1	978.3	990.4

(continued)

Table A2.6 (continued): Program use as at 30 September, by age group, aged care clients aged 65+, 2002 to 2010

Aged care program	2002	2003	2004	2005	2006	2007	2008	2009	2010
Aged 85+	Percentage of clients in age group^(a)								
PRAC	49.7	49.1	47.8	47.0	45.8	43.4	42.6	41.5	40.7
RRC	0.8	0.8	0.8	0.8	0.9	0.8	0.9	0.9	1.0
TCP	..	..	..	—	0.2	0.3	0.3	0.3	0.4
<i>Community care</i>	<i>49.8</i>	<i>50.5</i>	<i>51.8</i>	<i>52.5</i>	<i>53.6</i>	<i>56.1</i>	<i>56.7</i>	<i>57.8</i>	<i>58.5</i>
EACH	—	0.1	0.2	0.3	0.4	0.5	0.7	0.7	0.8
EACHD	..	..	..	..	0.1	0.2	0.3	0.3	0.4
CACP	6.5	6.5	6.4	6.5	7.1	7.2	7.4	7.4	7.4
HACC ^(a)	39.8	39.6	40.0	39.3	38.1	39.7	39.0	39.3	39.8
VHC	6.0	7.0	8.2	9.9	11.5	12.4	13.8	14.8	15.0
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number	139,330	146,379	155,645	166,011	176,136	192,735	201,634	213,358	225,107
Clients as percentage of population	50.9	52.1	53.7	54.2	54.5	56.6	56.6	57.2	57.6
Population aged 85+('000s)	273.7	280.7	289.9	306.4	323.3	340.7	356.0	372.7	390.9

(a) Imprecise start and end dates for use for HACC services may have affected estimates of the number of HACC clients (see Section B6.2 and Table B10).

Notes

1. Age is as at 30 September.
2. People can be clients of more than 1 program at a time, and so numbers and percentages may sum to more than the corresponding total.
3. Population aged 65+ is derived as the average of ABS population estimates for 30 June and 31 December.

Source: ABS 2013 for population numbers.

Table A2.7: Program use by men as at 30 September, by age group, aged care clients aged 65+, 2002 to 2010

Aged care program	2002	2003	2004	2005	2006	2007	2008	2009	2010
Aged 65–74	Percentage of male clients in age group^(a)								
PRAC	25.3	24.9	23.6	23.9	24.1	21.9	21.7	21.3	20.8
RRC	0.7	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.6
TCP	..	..	..	—	0.2	0.3	0.4	0.5	0.5
<i>Community care</i>	<i>74.2</i>	<i>74.7</i>	<i>76.1</i>	<i>75.7</i>	<i>75.3</i>	<i>77.4</i>	<i>77.7</i>	<i>78.0</i>	<i>78.5</i>
EACH	—	0.2	0.3	0.6	1.0	1.1	1.3	1.3	1.5
EACHD	..	..	..	..	0.1	0.3	0.4	0.4	0.5
CACP	5.8	5.7	5.7	5.8	6.3	5.8	6.1	6.1	6.0
HACC ^(a)	67.0	67.6	68.9	67.8	66.3	68.8	68.6	68.7	68.3
VHC	2.8	2.7	2.7	3.1	3.2	3.0	3.1	3.3	4.0
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number	24,274	24,937	26,228	25,871	26,044	29,464	30,240	31,772	33,543
Clients as percentage of population	3.8	3.8	4.0	3.8	3.8	4.1	4.1	4.1	4.2
Male population aged 65–74 ('000s)	644.4	652.1	661.6	673.1	688.1	711.0	736.5	768.8	804.3
Aged 75–84									
PRAC	25.2	25.0	24.6	24.9	24.7	23.6	23.5	23.7	23.9
RRC	0.7	0.8	0.7	0.7	0.7	0.7	0.8	0.8	0.9
TCP	..	..	..	—	0.2	0.3	0.4	0.4	0.5
<i>Community care</i>	<i>74.3</i>	<i>74.6</i>	<i>75.0</i>	<i>74.7</i>	<i>74.7</i>	<i>75.7</i>	<i>75.8</i>	<i>75.6</i>	<i>75.2</i>
EACH	—	0.1	0.2	0.4	0.6	0.7	0.8	0.9	1.1
EACHD	..	..	..	..	0.1	0.2	0.4	0.5	0.6
CACP	4.9	5.0	4.7	4.9	5.7	5.8	6.2	6.3	6.6
HACC ^(a)	48.0	48.8	50.6	50.5	51.2	56.1	58.8	61.6	63.5
VHC	26.0	24.9	23.7	23.1	20.9	16.4	12.9	9.1	5.9
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number	57,930	61,233	66,455	66,897	67,259	71,115	70,720	71,089	71,761
Clients as percentage of population	15.6	15.9	16.7	16.4	16.2	16.8	16.5	16.3	16.2
Male population aged 75–84 ('000s)	370.3	384.8	397.5	407.6	416.1	422.7	428.8	434.9	442.2

(continued)

Table A2.7 (continued): Program use by men as at 30 September, by age group, aged care clients aged 65+, 2002 to 2010

Aged care program	2002	2003	2004	2005	2006	2007	2008	2009	2010
Aged 85+	Percentage of male clients in age group^(a)								
PRAC	40.6	39.9	38.2	37.4	36.2	34.0	33.2	32.6	32.2
RRC	0.9	0.9	0.9	0.9	1.0	0.8	1.0	1.0	1.1
TCP	..	..	..	—	0.2	0.3	0.3	0.3	0.4
<i>Community care</i>	<i>58.8</i>	<i>59.6</i>	<i>61.3</i>	<i>62.1</i>	<i>63.0</i>	<i>65.4</i>	<i>66.0</i>	<i>66.7</i>	<i>66.9</i>
EACH	—	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
EACHD	..	..	..	..	0.1	0.2	0.3	0.3	0.4
CACP	7.0	6.9	6.7	6.5	6.9	6.9	6.9	6.8	7.0
HACC ^(a)	42.6	41.6	41.4	40.1	37.9	39.3	38.5	38.5	39.0
VHC	13.2	15.2	17.6	20.3	23.2	24.3	26.0	26.9	26.3
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number	33,737	35,942	38,829	42,803	46,336	52,000	55,770	59,854	63,778
Clients as percentage of population	39.7	41.0	42.5	43.5	44.0	46.2	46.9	47.5	47.8
Male population aged 85+ ('000s)	85.0	87.7	91.4	98.3	105.2	112.5	118.9	125.9	133.5

(a) Imprecise start and end dates for use for HACC services may have affected estimates of the number of HACC clients (see Section B6.2 and Table B10).

Notes

1. Age is as at 30 September.
2. People can be clients of more than 1 program at a time, and so numbers and percentages may sum to more than the corresponding total.
3. Population aged 65+ is derived as the average of ABS population estimates for 30 June and 31 December.

Source: ABS 2013 for population numbers.

Table A2.8: Program use by women as at 30 September, by age group, aged care clients aged 65+, 2002 to 2010

Aged care program	2002	2003	2004	2005	2006	2007	2008	2009	2010
Aged 65–74	Percentage of female clients in age group^(a)								
PRAC	15.2	14.6	13.7	14.0	13.8	12.1	12.2	11.8	11.6
RRC	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.3	0.3
TCP	..	..	..	—	0.1	0.2	0.3	0.3	0.4
<i>Community care</i>	84.6	85.2	86.2	85.7	85.9	87.6	87.4	87.8	88.0
EACH	—	0.1	0.2	0.3	0.6	0.6	0.8	0.9	1.0
EACHD	..	..	..	..	0.1	0.2	0.2	0.2	0.3
CACP	5.5	5.7	5.4	5.6	6.1	5.5	5.8	5.8	5.7
HACC ^(a)	75.7	76.9	78.5	78.0	77.5	80.4	80.0	80.5	80.8
VHC	5.0	4.2	3.6	3.4	3.1	2.4	2.2	2.0	1.8
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number	46,715	47,908	51,125	49,426	49,779	56,946	57,830	61,272	64,804
Clients as percentage of population	6.8	7.0	7.3	7.0	6.9	7.7	7.6	7.7	7.8
Female population aged 65–74 ('000s)	682.9	688.7	697.0	706.7	720.0	740.5	763.9	794.1	826.1
Aged 75–84									
PRAC	27.1	26.5	25.0	25.0	24.2	22.2	21.9	21.2	20.7
RRC	0.6	0.6	0.6	0.5	0.6	0.5	0.6	0.5	0.5
TCP	..	..	..	—	0.1	0.2	0.3	0.4	0.4
<i>Community care</i>	72.5	73.2	74.6	74.6	75.4	77.4	77.6	78.3	78.8
EACH	—	0.1	0.1	0.2	0.4	0.5	0.6	0.6	0.7
EACHD	..	..	..	..	0.1	0.2	0.3	0.3	0.4
CACP	6.1	6.1	5.9	6.2	6.8	6.5	7.0	6.9	6.9
HACC ^(a)	58.9	59.0	60.2	59.0	59.0	62.2	62.4	64.1	65.6
VHC	10.4	11.0	11.5	12.5	12.5	11.2	10.7	9.5	8.2
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number	124,268	131,421	142,097	142,371	145,341	154,821	154,092	157,652	160,005
Clients as percentage of population	24.7	25.5	27.1	26.8	27.2	28.8	28.5	29.0	29.2
Female population aged 75–84 ('000s)	504.1	515.9	525.2	530.9	534.3	537.4	540.3	543.4	548.2

(continued)

Table A2.8 (continued): Program use as at 30 September, by age group, aged care clients aged 65+, 2002 to 2010

Aged care program	2002	2003	2004	2005	2006	2007	2008	2009	2010
Aged 85+	Percentage of female clients in age group^(a)								
PRAC	52.6	52.1	51.0	50.4	49.3	46.8	46.1	45.0	44.1
RRC	0.8	0.8	0.7	0.8	0.8	0.7	0.9	0.9	0.9
TCP	..	..	..	—	0.2	0.3	0.3	0.3	0.4
<i>Community care</i>	<i>46.9</i>	<i>47.5</i>	<i>48.6</i>	<i>49.2</i>	<i>50.2</i>	<i>52.6</i>	<i>53.1</i>	<i>54.3</i>	<i>55.2</i>
EACH	—	0.1	0.1	0.3	0.4	0.5	0.7	0.7	0.8
EACHD	..	..	..	..	0.1	0.2	0.3	0.3	0.4
CACP	6.3	6.4	6.3	6.6	7.2	7.3	7.6	7.6	7.6
HACC ^(a)	38.9	38.9	39.6	39.0	38.1	39.8	39.2	39.6	40.1
VHC	3.7	4.3	5.1	6.3	7.3	8.0	9.1	10.0	10.5
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total number	105,580	110,428	116,809	123,198	129,784	140,732	145,845	153,481	161,285
Clients as percentage of population	56.0	57.2	58.8	59.2	59.5	61.7	61.5	62.2	62.7
Female population aged 85+ ('000s)	188.7	193.0	198.5	208.1	218.0	228.2	237.1	246.8	257.4

(a) Imprecise start and end dates for use for HACC services may have affected estimates of the number of HACC clients (see Section B6.2 and Table B10).

Notes

1. Age is as at 30 September.
2. People can be clients of more than 1 program at a time, and so numbers and percentages may sum to more than the corresponding total.
3. Population aged 65+ is derived as the average of ABS population estimates for 30 June and 31 December.

Source: ABS 2013 for population numbers.

Table A2.9: Program use rates by people aged 65+, by aged care program, 2002–03 to 2010–11

	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Aged care program^(a)	Percentage of population aged 65+								
PRAC only	5.8	5.9	5.9	6.0	5.9	5.9	5.8	5.7	5.6
RRC only	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
PRAC and RRC only	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
<i>Community care only</i>	18.2	19.3	19.9	19.8	20.6	21.3	21.5	21.4	21.4
Packages only	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8
HACC and/or VHC only	17.1	18.2	18.8	18.6	19.2	19.8	20.0	19.8	19.7
Packages and HACC/VHC	0.5	0.6	0.6	0.6	0.7	0.8	0.7	0.8	0.8
PRAC with community care ^(b)	1.1	1.2	1.1	1.1	1.2	1.2	1.2	1.2	1.2
RRC with community care	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
<i>Total with service use</i>	26.0	27.2	27.9	27.9	28.6	29.3	29.5	29.3	29.2
No service use	74.0	72.8	72.1	72.1	71.4	70.7	70.5	70.7	70.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Deaths	%								
Client deaths – percentage of clients	10.1	10.1	9.6	9.6	9.5	9.7	9.6	9.4	9.5
Client deaths – percentage of deaths	63.2	65.7	66.2	66.9	68.4	69.8	70.2	71.0	71.3
Total number	Number ('000s)								
Client deaths	65.0	69.1	68.3	69.8	72.2	77.8	79.7	79.5	82.5
Deaths aged 65+ ^(c)	102.8	105.2	103.2	104.3	105.5	111.4	113.4	112.0	115.6
<i>Total with service use</i>	641.9	684.0	713.7	728.1	762.5	801.6	828.0	847.0	871.2
No service use	1,823.8	1,827.3	1,845.2	1,883.8	1,901.6	1,935.0	1,977.2	2,043.5	2,115.4
Population aged 65+	2,465.7	2,511.3	2,558.9	2,611.9	2,664.1	2,736.6	2,805.2	2,890.6	2,986.7

(a) Table does not include TCP and ACAP. See Table A2.2 for TCP use and Table A2.3 for ACAP use.

(b) People may have also used RRC.

(c) From the NDI. Numbers differ from published ABS figures due to different scope and also because of the data cleaning processes undertaken by the ABS for mortality statistics. Note also that dummy dates of birth based on age at death were derived for 1,214 people on the NDI. Some of these people were aged under 65, and some may have matched to program users with a fully reported date of birth (see Appendix B for derivation of demographic values).

Notes

1. Age is as at 1 July of the financial year.
2. Population aged 65+ is at 30 June before the start of the financial year.

Source: ABS 2013 for population numbers.

Table A2.10: Program use by people aged 65+ in the 12 months before first admission into permanent RAC, by aged care program and financial year of first admission, 2003–04 to 2010–11

Aged care program	Year of first admission into permanent RAC							
	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Percentage of clients with a first permanent RAC admission								
RRC only	7.7	8.1	8.5	8.3	7.5	7.8	8.3	7.8
TCP only	..	..	0.1	0.8	1.3	1.4	1.5	1.7
<i>Community care only</i>	<i>45.5</i>	<i>46.0</i>	<i>45.5</i>	<i>43.9</i>	<i>44.2</i>	<i>42.3</i>	<i>41.1</i>	<i>39.1</i>
Packages only	2.8	2.9	3.3	3.2	3.7	3.7	3.7	3.7
HACC and/or VHC only	36.9	37.3	36.1	34.0	33.5	32.0	30.9	29.2
Packages and HACC/VHC	5.8	5.8	6.0	6.7	7.0	6.7	6.6	6.2
TCP with community care, no RRC	..	..	0.2	2.0	3.4	4.0	4.4	5.3
RRC with community care, no TCP	27.8	29.3	30.1	30.7	30.0	31.7	32.5	33.9
TCP and RRC, no community care	..	..	—	0.1	0.2	0.2	0.2	0.3
TCP and RRC, with community care	..	..	—	0.5	1.0	1.3	1.5	1.9
<i>Any RRC use</i>	<i>35.5</i>	<i>37.3</i>	<i>38.6</i>	<i>39.6</i>	<i>38.6</i>	<i>41.0</i>	<i>42.5</i>	<i>44.0</i>
<i>Any TCP use</i>	<i>—</i>	<i>—</i>	<i>0.3</i>	<i>3.4</i>	<i>5.9</i>	<i>7.0</i>	<i>7.6</i>	<i>9.2</i>
<i>Any community care</i>	<i>73.3</i>	<i>75.3</i>	<i>75.8</i>	<i>77.2</i>	<i>78.7</i>	<i>79.6</i>	<i>79.6</i>	<i>80.5</i>
<i>Any service use</i>	<i>81.0</i>	<i>83.4</i>	<i>84.4</i>	<i>86.2</i>	<i>87.5</i>	<i>88.8</i>	<i>89.4</i>	<i>90.1</i>
No service use	19.0	16.6	15.6	13.8	12.5	11.2	10.6	9.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New permanent RAC clients (number)	45,324	43,572	44,035	44,853	47,214	47,980	49,386	50,707
New PRAC clients (percentage of all PRAC clients)	25.7	24.0	23.7	23.6	24.4	24.1	24.4	24.7
New PRAC clients (percentage of population aged 65+)	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Number								
People aged 65+ using PRAC in the year	176,069	181,896	185,544	190,418	193,793	199,222	202,285	205,348
Population aged 65+	2,511,327	2,558,857	2,611,879	2,664,064	2,736,610	2,805,167	2,890,566	2,986,675

Notes

1. Age is as at 1 July of the financial year.
2. Population aged 65+ is at 30 June before the start of the financial year.

Source: ABS 2013 for population numbers.

Table A2.11: Age-sex standardised program use rates by people aged 65+, by aged care program, 2002–03 to 2010–11 (standardised to population as at 30 June 2002)

Aged care program ^(a)	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Percentage of population aged 65+ (standardised)									
PRAC only	5.8	5.8	5.8	5.7	5.6	5.5	5.4	5.3	5.2
RRC only	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
PRAC and RRC only	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
<i>Community care only</i>	<i>18.2</i>	<i>19.2</i>	<i>19.8</i>	<i>19.6</i>	<i>20.3</i>	<i>21.0</i>	<i>21.3</i>	<i>21.2</i>	<i>21.3</i>
Packages only	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8
HACC and/or VHC only	17.1	18.1	18.6	18.4	18.9	19.5	19.8	19.7	19.7
Packages and HACC/VHC	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.8
PRAC with community care ^(b)	1.1	1.2	1.1	1.1	1.1	1.2	1.2	1.2	1.2
RRC with community care	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
<i>Total with service use</i>	<i>26.0</i>	<i>27.1</i>	<i>27.6</i>	<i>27.4</i>	<i>28.0</i>	<i>28.6</i>	<i>28.8</i>	<i>28.7</i>	<i>28.6</i>
No service use	74.0	72.9	72.4	72.6	72.0	71.4	71.2	71.3	71.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Table does not include TCP and ACAP. See Table A2.2 for TCP use and Table A2.3 for ACAP use.

(b) People may have also used RRC.

Notes

1. Age is as at 1 July of the financial year.

2. Table is age–sex standardised to the population aged 65+ as at 30 June 2002 using 5-year age groups up to 90+.

Source: ABS 2013 for population numbers.

Table A2.12: Program use rates by people aged 65+, by sex, aged care program, 2002–03 to 2010–11

Sex/aged care program^(a)	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Men	Percentage of male population aged 65+								
PRAC only	3.6	3.7	3.7	3.7	3.7	3.7	3.7	3.6	3.6
RRC only	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PRAC and RRC only	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
<i>Community care only</i>	<i>13.6</i>	<i>14.5</i>	<i>15.0</i>	<i>14.9</i>	<i>15.4</i>	<i>15.9</i>	<i>16.2</i>	<i>15.9</i>	<i>15.7</i>
Packages only	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6
HACC and/or VHC only	12.9	13.8	14.2	14.1	14.5	14.9	15.1	14.8	14.6
Packages and HACC/VHC	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6
PRAC with community care ^(b)	0.8	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0
RRC with community care	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
<i>Total with service use</i>	<i>18.9</i>	<i>19.8</i>	<i>20.3</i>	<i>20.3</i>	<i>20.9</i>	<i>21.4</i>	<i>21.6</i>	<i>21.3</i>	<i>21.2</i>
No service use	81.1	80.2	79.7	79.7	79.1	78.6	78.4	78.7	78.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Male population aged 65+ ('000s)	1,094.5	1,118.6	1,143.8	1,172.0	1,200.0	1,237.9	1,273.5	1,317.5	1,366.9
Women	Percentage of female population aged 65+								
PRAC only	7.6	7.7	7.7	7.8	7.7	7.6	7.5	7.4	7.3
RRC only	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
PRAC and RRC only	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
<i>Community care only</i>	<i>21.8</i>	<i>23.1</i>	<i>23.8</i>	<i>23.8</i>	<i>24.8</i>	<i>25.7</i>	<i>26.0</i>	<i>26.0</i>	<i>26.0</i>
Packages only	0.7	0.7	0.7	0.8	0.9	0.9	1.0	1.0	1.1
HACC and/or VHC only	20.4	21.7	22.4	22.2	23.0	23.8	24.1	24.0	24.0
Packages and HACC/VHC	0.6	0.7	0.7	0.8	0.9	1.0	0.9	1.0	1.0
PRAC with community care ^(b)	1.3	1.4	1.3	1.3	1.4	1.4	1.4	1.4	1.5
RRC with community care	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
<i>Total with service use</i>	<i>31.8</i>	<i>33.2</i>	<i>34.0</i>	<i>34.0</i>	<i>34.9</i>	<i>35.8</i>	<i>36.0</i>	<i>36.0</i>	<i>35.9</i>
No service use	68.2	66.8	66.0	66.0	65.1	64.2	64.0	64.0	64.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Female population aged 65+ ('000s)	1,371.2	1,392.7	1,415.0	1,439.9	1,464.0	1,498.7	1,531.7	1,573.0	1,619.7

(a) Table does not include TCP and ACAP. See Table A2.2 for TCP use and Table A2.3 for ACAP use.

(b) People may have also used RRC.

Notes

1. Age is as at 1 July of the financial year.
2. Population aged 65+ is at 30 June before the start of the financial year.

Source: ABS 2013 for population numbers.

Table A2.13: Program use rates by people aged 65+, by age group, aged care program, 2002–03 to 2010–11

Age group/aged care program^(a)	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Aged 65–74	Percentage of population within age group								
PRAC only	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0
RRC only	0.1	—	—	—	—	—	—	—	—
PRAC and RRC only	—	—	—	—	—	—	—	—	—
<i>Community care only</i>	9.5	10.2	10.4	10.0	10.3	10.8	10.9	10.8	10.8
Packages only	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
HACC and/or VHC only	9.2	9.8	10.0	9.6	9.8	10.3	10.4	10.3	10.2
Packages and HACC/VHC	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
PRAC with community care ^(b)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
RRC with community care	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
<i>Total with service use</i>	11.2	11.8	12.0	11.6	11.8	12.3	12.4	12.3	12.2
No service use	88.8	88.2	88.0	88.4	88.2	87.7	87.6	87.7	87.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Population aged 65–74 ('000s)	1,324.6	1,336.8	1,353.4	1,374.0	1,397.3	1,440.9	1,485.0	1,546.2	1,613.3
Aged 75–84									
PRAC only	6.2	6.2	6.2	6.2	6.1	5.9	5.8	5.7	5.6
RRC only	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
PRAC and RRC only	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.2
<i>Community care only</i>	26.2	27.5	28.3	28.4	29.3	30.2	30.5	30.5	30.5
Packages only	0.7	0.7	0.7	0.8	0.9	1.0	1.0	1.1	1.1
HACC and/or VHC only	24.8	26.1	26.8	26.7	27.5	28.2	28.5	28.4	28.2
Packages and HACC/VHC	0.7	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.1
PRAC with community care ^(b)	1.4	1.5	1.4	1.4	1.4	1.5	1.5	1.5	1.5
RRC with community care	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
<i>Total with service use</i>	35.0	36.4	37.2	37.2	38.0	38.7	39.0	38.9	38.7
No service use	65.0	63.6	62.8	62.8	62.0	61.3	61.0	61.1	61.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Population aged 75–84 ('000s)	868.5	895.0	919.2	935.7	948.1	958.6	967.6	976.2	986.8

(continued)

Table A2.13 (continued): Program use rates by people aged 65+, by age group, aged care program, 2002–03 to 2010–11

Age group/aged care program^(a)	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Aged 85+	Percentage of population within age group								
PRAC only	27.4	27.5	27.7	27.3	26.7	26.3	25.8	25.2	24.9
RRC only	0.6	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.5
PRAC and RRC only	0.8	0.7	0.7	0.8	0.8	0.7	0.7	0.8	0.7
<i>Community care only</i>	34.6	36.4	37.6	38.0	40.0	40.9	41.9	41.8	42.4
Packages only	1.7	1.6	1.7	1.8	2.1	2.3	2.4	2.4	2.5
HACC and/or VHC only	31.4	33.1	34.1	34.3	35.7	36.4	37.3	37.1	37.5
Packages and HACC/VHC	1.6	1.7	1.7	1.9	2.1	2.2	2.2	2.3	2.3
PRAC with community care ^(b)	4.3	4.7	4.5	4.4	4.5	4.8	4.8	4.8	4.9
RRC with community care	1.9	2.0	2.0	2.0	2.0	2.1	2.2	2.2	2.3
<i>Total with service use</i>	69.6	71.8	73.0	73.0	74.5	75.2	75.8	75.4	75.6
No service use	30.4	28.2	27.0	27.0	25.5	24.8	24.2	24.6	24.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Population aged 85+ ('000s)	272.6	279.5	286.3	302.2	318.7	337.1	352.6	368.2	386.6

(a) Table does not include TCP and ACAP. See Table A2.2 for TCP use and Table A2.3 for ACAP use.

(b) People may have also used RRC.

Notes

1. Age is as at 1 July of the financial year.
2. Population aged 65+ is at 30 June before the start of the financial year.

Source: ABS 2013 for population numbers.

Table A2.14: Program use rates by men aged 65+, by age group, aged care program, 2002–03 to 2010–11

Age group/aged care program^(a)	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Aged 65–74	Percentage of male population within age group								
PRAC only	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.0
RRC only	0.1	0.1	0.1	0.1	0.1	—	—	—	—
PRAC and RRC only	—	—	—	—	0.1	—	—	—	—
<i>Community care only</i>	6.7	7.2	7.4	7.1	7.3	7.6	7.7	7.6	7.5
Packages only	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
HACC and/or VHC only	6.5	7.0	7.1	6.8	6.9	7.2	7.3	7.2	7.1
Packages and HACC/VHC	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
PRAC with community care ^(b)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
RRC with community care	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
<i>Total with service use</i>	8.3	8.8	9.0	8.6	8.8	9.1	9.2	9.0	9.0
No service use	91.7	91.2	91.0	91.4	91.2	90.9	90.8	91.0	91.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Male population aged 65–74 ('000s)	642.8	649.9	658.9	670.0	682.4	705.4	728.6	760.0	795.3
Aged 75–84									
PRAC only	4.6	4.6	4.7	4.7	4.6	4.6	4.5	4.4	4.4
RRC only	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
PRAC and RRC only	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
<i>Community care only</i>	21.0	21.9	22.5	22.3	22.8	23.3	23.5	23.1	22.8
Packages only	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.8
HACC and/or VHC only	20.0	21.0	21.5	21.2	21.6	22.0	22.2	21.6	21.2
Packages and HACC/VHC	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8
PRAC with community care ^(b)	1.2	1.3	1.2	1.2	1.2	1.3	1.3	1.3	1.3
RRC with community care	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
<i>Total with service use</i>	27.9	29.0	29.5	29.4	29.7	30.3	30.4	29.9	29.6
No service use	72.1	71.0	70.5	70.6	70.3	69.7	69.6	70.1	70.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Male population aged 75–84 ('000s)	367.0	381.6	395.2	405.5	414.4	421.6	427.6	433.5	440.1

(continued)

Table A2.14 (continued): Program use rates by men aged 65+, by age group, aged care program, 2002–03 to 2010–11

Age group/aged care program^(a)	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Aged 85+	Percentage of male population within age group								
PRAC only	18.3	18.3	18.4	18.0	17.7	17.5	17.2	17.0	16.8
RRC only	0.6	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5
PRAC and RRC only	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.7
<i>Community care only</i>	<i>34.3</i>	<i>36.0</i>	<i>37.6</i>	<i>38.0</i>	<i>39.9</i>	<i>40.7</i>	<i>41.7</i>	<i>41.4</i>	<i>41.7</i>
Packages only	1.5	1.5	1.5	1.6	1.8	1.9	1.9	2.0	2.1
HACC and/or VHC only	31.4	33.0	34.5	34.8	36.2	37.0	38.0	37.5	37.7
Packages and HACC/VHC	1.4	1.5	1.6	1.7	1.8	1.9	1.8	1.9	1.9
PRAC with community care ^(b)	4.0	4.4	4.2	4.2	4.2	4.6	4.7	4.6	4.6
RRC with community care	1.7	1.8	1.8	1.8	1.9	1.9	2.0	2.1	2.1
<i>Total with service use</i>	<i>59.5</i>	<i>61.6</i>	<i>63.1</i>	<i>63.4</i>	<i>64.9</i>	<i>65.8</i>	<i>66.7</i>	<i>66.2</i>	<i>66.5</i>
No service use	40.5	38.4	36.9	36.6	35.1	34.2	33.3	33.8	33.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Male population aged 85+ ('000s)	84.6	87.1	89.8	96.5	103.3	110.9	117.3	124.0	131.6

(a) Table does not include TCP and ACAP. See Table A2.2 for TCP use and Table A2.3 for ACAP use.

(b) People may have also used RRC.

Notes

1. Age is as at 1 July of the financial year.
2. Population aged 65+ is at 30 June before the start of the financial year.

Source: ABS 2013 for population numbers.

Table A2.15: Program use rates by women aged 65+, by age group and aged care program, 2002–03 to 2010–11

Age group/aged care program^(a)	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Aged 65–74	Percentage of female population within age group								
PRAC only	1.2	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0
RRC only	0.1	—	—	—	—	—	—	—	—
PRAC and RRC only	—	—	—	—	—	—	—	—	—
<i>Community care only</i>	<i>12.2</i>	<i>12.9</i>	<i>13.3</i>	<i>12.8</i>	<i>13.1</i>	<i>13.8</i>	<i>13.9</i>	<i>14.0</i>	<i>13.9</i>
Packages only	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
HACC and/or VHC only	11.7	12.4	12.8	12.2	12.5	13.2	13.3	13.3	13.2
Packages and HACC/VHC	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3
PRAC with community care ^(b)	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2
RRC with community care	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1
<i>Total with service use</i>	<i>13.8</i>	<i>14.6</i>	<i>14.9</i>	<i>14.3</i>	<i>14.6</i>	<i>15.3</i>	<i>15.4</i>	<i>15.4</i>	<i>15.3</i>
No service use	86.2	85.4	85.1	85.7	85.4	84.7	84.6	84.6	84.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Female population aged 65–74 ('000s)	681.8	686.9	694.5	704.0	714.9	735.5	756.5	786.1	818.0
Aged 75–84									
PRAC only	7.4	7.4	7.4	7.4	7.2	7.0	6.8	6.7	6.5
RRC only	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
PRAC and RRC only	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
<i>Community care only</i>	<i>30.0</i>	<i>31.6</i>	<i>32.7</i>	<i>33.0</i>	<i>34.3</i>	<i>35.5</i>	<i>36.0</i>	<i>36.4</i>	<i>36.5</i>
Packages only	0.9	0.9	0.9	1.0	1.1	1.2	1.3	1.3	1.4
HACC and/or VHC only	28.2	29.8	30.9	30.9	32.1	33.0	33.5	33.7	33.8
Packages and HACC/VHC	0.9	0.9	1.0	1.1	1.1	1.2	1.2	1.3	1.4
PRAC with community care ^(b)	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
RRC with community care	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
<i>Total with service use</i>	<i>40.2</i>	<i>41.9</i>	<i>43.0</i>	<i>43.2</i>	<i>44.4</i>	<i>45.3</i>	<i>45.7</i>	<i>45.9</i>	<i>45.9</i>
No service use	59.8	58.1	57.0	56.8	55.6	54.7	54.3	54.1	54.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Female population aged 75–84 ('000s)	501.5	513.5	524.0	530.2	533.7	537.0	540.0	542.7	546.7

(continued)

Table A2.15 (continued): Program use rates by women aged 65+, by age group and aged care program, 2002–03 to 2010–11

Age group/aged care program^(a)	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Aged 85+	Percentage of male population within age group								
PRAC only	31.6	31.7	32.0	31.7	31.1	30.6	30.0	29.4	29.0
RRC only	0.6	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.5
PRAC and RRC only	0.8	0.7	0.7	0.8	0.8	0.7	0.7	0.8	0.8
<i>Community care only</i>	<i>34.8</i>	<i>36.5</i>	<i>37.6</i>	<i>38.0</i>	<i>39.9</i>	<i>40.9</i>	<i>41.9</i>	<i>42.0</i>	<i>42.6</i>
Packages only	1.7	1.7	1.8	1.9	2.2	2.4	2.6	2.7	2.7
HACC and/or VHC only	31.4	33.1	33.9	34.0	35.4	36.1	37.0	36.9	37.4
Packages and HACC/VHC	1.6	1.8	1.8	2.0	2.3	2.4	2.4	2.5	2.6
PRAC with community care ^(b)	4.5	4.8	4.6	4.5	4.6	4.9	4.9	4.9	5.1
RRC with community care	2.0	2.0	2.1	2.0	2.1	2.1	2.2	2.3	2.3
<i>Total with service use</i>	<i>74.2</i>	<i>76.3</i>	<i>77.5</i>	<i>77.5</i>	<i>79.1</i>	<i>79.7</i>	<i>80.4</i>	<i>80.0</i>	<i>80.3</i>
No service use	25.8	23.7	22.5	22.5	20.9	20.3	19.6	20.0	19.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Female population aged 85+ ('000s)	187.9	192.3	196.5	205.7	215.4	226.2	235.2	244.2	255.0

(a) Table does not include TCP and ACAP. See Table A2.2 for TCP use and Table A2.3 for ACAP use.

(b) People may have also used RRC.

Notes

1. Age is as at 1 July of the financial year.
2. Population aged 65+ is at 30 June before the start of the financial year.

Source: ABS 2013 for population numbers.

Table A2.16: Program use rates in the 12 months before death by people aged 65+, by aged care program and financial year of death, 2003–04 to 2010–11

Aged care program ^(a)	Year of death							
	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
	Percentage of deaths							
PRAC only	29.5	29.7	31.1	31.0	31.3	31.4	31.4	31.2
RRC only	0.5	0.5	0.6	0.6	0.5	0.5	0.6	0.6
PRAC and RRC only	1.0	1.0	1.0	1.1	1.0	1.0	1.1	1.2
<i>Community care only</i>	27.3	27.2	26.5	27.5	27.9	27.9	27.9	27.8
Packages only	0.9	0.9	0.9	1.1	1.1	1.3	1.4	1.4
HACC and/or VHC only	25.0	24.8	24.0	24.5	24.7	24.6	24.5	24.3
Packages and HACC/VHC	1.4	1.5	1.6	1.9	2.0	1.9	2.1	2.1
PRAC and community care	6.5	6.7	6.6	6.6	6.9	7.1	7.0	7.0
RRC and community care	2.1	2.3	2.4	2.5	2.5	2.6	2.7	2.8
PRAC and RRC and community care	2.8	2.9	3.1	3.2	3.3	3.6	3.8	4.0
<i>Any PRAC</i>	39.8	40.3	41.8	41.8	42.6	43.1	43.3	43.4
<i>Any RRC</i>	6.5	6.7	7.0	7.2	7.3	7.7	8.2	8.5
<i>Any community care</i>	38.7	39.0	38.6	39.7	40.6	41.1	41.5	41.6
<i>Any service use</i>	69.7	70.3	71.3	72.3	73.4	74.1	74.5	74.5
No service use	30.3	29.7	28.7	27.7	26.6	25.9	25.5	25.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of deaths^(b)	105,152	103,218	104,265	105,455	111,446	113,443	112,002	115,632

(a) Table does not include TCP and ACAP. See Table A2.17 for TCP use and Table A2.18 for ACAP use.

(b) From the NDI. Numbers differ from published ABS figures due to different scope and also because of the data cleaning processes undertaken by the ABS for mortality statistics. Note also that dummy dates of birth based on age at death were derived for 1,214 people on the NDI. Some of these people were aged under 65, and some may have matched to program users with a fully reported date of birth (see Appendix B for derivation of demographic values).

Note: Age is as at 1 July of the financial year.

Table A2.17: Use of TCP by people aged 65+ in the 12 months before death, by use of other aged care programs and financial year of death, 2007–08 to 2010–11

Program use	Year of death			
	2007–08	2008–09	2009–10	2010–11
All deaths	Percentage of deaths			
TCP only	0.1	0.2	0.2	0.3
TCP and RAC ^(a) only	0.3	0.3	0.3	0.3
TCP and community care only	0.6	0.7	0.9	1.0
TCP with RAC ^(a) and community care	0.6	0.7	0.8	1.0
<i>Total with TCP</i>	<i>1.6</i>	<i>1.9</i>	<i>2.1</i>	<i>2.5</i>
No TCP	98.4	98.1	97.9	97.5
Total deaths	100.0	100.0	100.0	100.0
	Number			
TCP only	153	186	225	298
TCP and RAC ^(a) only	295	285	326	367
TCP and community care only	648	819	959	1,148
TCP with RAC ^(a) and community care	669	825	882	1,111
<i>Total with TCP</i>	<i>1,765</i>	<i>2,115</i>	<i>2,392</i>	<i>2,924</i>
No TCP	109,681	111,328	109,610	112,708
Number of deaths^(b)	111,446	113,443	112,002	115,632

(a) Permanent and respite RAC are grouped due to small numbers.

(b) From the NDI. Numbers differ from published ABS figures due to different scope and also because of the data cleaning processes undertaken by the ABS for mortality statistics. Note also that dummy dates of birth based on age at death were derived for 1,214 people on the NDI. Some of these people were aged under 65, and some may have matched to program users with a fully reported date of birth (see Appendix B for derivation of demographic values).

Notes

1. Age is as at 1 July of the financial year.
2. Components may not sum to the total due to rounding.

Table A2.18: ACAT assessment in the 12 months before death for people aged 65+, by type of assessment closure and financial year of death, 2007–08 to 2010–11

Type of assessment closure	Year of death			
	2007–08	2008–09	2009–10	2010–11
	Percentage of deaths			
Complete (any)	29.5	29.5	28.5	26.8
<i>Incomplete (any)</i>	6.3	6.6	6.4	6.1
Incomplete, ended due to death	2.0	2.0	1.5	1.4
Incomplete, other reason	4.5	4.8	5.1	4.9
Unknown completion status (any)	0.1	0.1	0.1	0.1
Had both complete and incomplete assessments	3.2	3.3	3.4	3.3
<i>Also used a service program</i> ^(a)	29.7	30.0	28.8	27.2
Also used only an ACAP-dependent program	9.6	9.5	8.8	7.7
Also used only HACC and/or VHC	7.7	7.7	7.2	6.8
Also used an ACAP-dependent program and HACC and/or VHC	12.4	12.8	12.9	12.6
<i>Had at least 1 assessment that was closed in preceding 12 months</i>	32.6	32.9	31.5	29.7
No assessment in preceding 12 months	67.4	67.1	68.5	70.3
Total	100.0	100.0	100.0	100.0
Deaths (number) ^(b)	111,446	113,443	112,002	115,632

(a) Had a complete or incomplete assessment and used at least 1 of: permanent RAC, respite RAC, CACP, EACH, EACHD, TCP, HACC or VHC.

(b) From the NDI. Numbers differ from published ABS figures due to different scope and also because of the data cleaning processes undertaken by the ABS for mortality statistics. Note also that dummy dates of birth based on age at death were derived for 1,214 people on the NDI. Some of these people were aged under 65, and some may have matched to program users with a fully reported date of birth (see Appendix B for derivation of demographic values).

Notes

1. Age is as at 1 July of the financial year.
2. Assessments are included in the year in which they ended. Assessment status is the status of the assessment when the assessment was closed.
3. People can have more than 1 ACAT assessment ending in the year, and so percentages may sum to more than the total.
4. Implementation of ACAP MDS V2 data collection was completed during 2003–04 for all jurisdictions except New South Wales and Queensland. For these 2 states, implementation was completed by the end of 2005–06 (ACAP NDR 2007: Table 1.1).

Table A2.19: Program use rates by people aged 65+ in the years before death, by aged care program and financial year of death, 2007–08 and 2010–11

Aged care program ^(a)	2007–08			2010–11		
	In the 5 years before death	In the 12 months starting 5 years before death	In the 12 months before death	In the 5 years before death	In the 12 months starting 5 years before death	In the 12 months before death
	Percentage of deaths					
PRAC only	14.2	9.9	31.3	13.4	9.6	31.2
RRC only	0.4	0.3	0.5	0.4	0.3	0.6
PRAC and RRC only	2.0	0.3	1.0	2.0	0.3	1.2
<i>Community care only</i>	<i>31.0</i>	<i>25.2</i>	<i>27.9</i>	<i>31.1</i>	<i>27.1</i>	<i>27.8</i>
Packages only	0.4	1.0	1.1	0.5	1.2	1.4
HACC and/or VHC only	28.0	23.0	24.7	27.7	24.4	24.3
Packages and HACC/VHC	2.7	1.2	2.0	2.9	1.6	2.1
PRAC and community care	15.9	1.4	6.9	16.0	1.4	7.0
RRC and community care	3.4	1.2	2.5	3.7	1.3	2.8
PRAC and RRC and community care	10.8	0.9	3.3	12.2	0.9	4.0
<i>Any PRAC</i>	<i>42.9</i>	<i>12.5</i>	<i>42.6</i>	<i>43.7</i>	<i>12.1</i>	<i>43.4</i>
<i>Any RRC</i>	<i>16.6</i>	<i>2.8</i>	<i>7.3</i>	<i>18.3</i>	<i>2.8</i>	<i>8.5</i>
<i>Any community care</i>	<i>61.2</i>	<i>28.7</i>	<i>40.6</i>	<i>63.0</i>	<i>30.6</i>	<i>41.6</i>
<i>Any service use</i>	<i>77.7</i>	<i>39.2</i>	<i>73.4</i>	<i>78.9</i>	<i>40.8</i>	<i>74.5</i>
No service use	22.3	60.8	26.6	21.1	59.2	25.5
Total	100.0	100.0	100.0	100.0	9.6	100.0
Number of deaths^(b)	111,446	111,446	111,446	115,632	115,632	115,632

(a) Table does not include TCP and ACAP.

(b) From the NDI. Numbers differ from published ABS figures due to different scope and also because of the data cleaning processes undertaken by the ABS for mortality statistics. Note also that dummy dates of birth based on age at death were derived for 1,214 people on the NDI. Some of these people were aged under 65, and some may have matched to program users with a fully reported date of birth (see Appendix B for derivation of demographic values).

Note: Age is as at 1 July of the financial year.

Table A2.20: Program use rates by people aged 65+ in the 12 months before death, by sex, aged care program and financial year of death, 2003–04 to 2010–11

Sex/aged care program ^(a)	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Men	Percentage of male deaths							
PRAC only	20.1	20.3	21.4	21.2	21.5	22.0	21.9	21.9
RRC only	0.5	0.5	0.6	0.6	0.5	0.6	0.6	0.6
PRAC and RRC only	1.0	0.9	1.0	1.1	1.0	1.0	1.0	1.3
<i>Community care only</i>	29.3	29.4	28.6	29.9	30.3	30.3	30.4	30.3
Packages only	0.7	0.7	0.8	0.9	1.0	1.2	1.1	1.2
HACC and/or VHC only	27.3	27.4	26.4	27.3	27.6	27.4	27.5	27.2
Packages and HACC/VHC	1.3	1.3	1.3	1.7	1.8	1.8	1.8	1.9
PRAC and community care	6.2	6.2	6.4	6.4	6.8	6.9	6.9	6.9
RRC and community care	2.0	2.2	2.4	2.5	2.5	2.6	2.8	2.8
PRAC and RRC and community care	2.7	2.7	3.0	3.1	3.2	3.5	3.8	3.8
<i>Any PRAC</i>	29.9	30.1	31.8	31.7	32.5	33.4	33.7	33.9
<i>Any RRC</i>	6.2	6.4	7.1	7.3	7.2	7.6	8.2	8.5
<i>Any community care</i>	40.2	40.5	40.4	41.8	42.8	43.3	43.9	43.9
<i>Any service use</i>	61.8	62.3	63.4	64.7	65.9	66.8	67.4	67.6
No service use	38.2	37.7	36.6	35.3	34.1	33.2	32.6	32.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of male deaths^(b)	50,836	49,887	49,939	50,612	53,551	54,530	53,930	55,651

(continued)

Table A2.20 (continued): Program use rates by people aged 65+ in the 12 months before death, by sex, aged care program and financial year of death, 2003–04 to 2010–11

Sex/aged care program^(a)	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Women	Percentage of female deaths							
PRAC only	38.3	38.6	40.0	40.0	40.4	40.2	40.2	39.8
RRC only	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
PRAC and RRC only	1.0	1.0	1.0	1.1	1.0	1.0	1.1	1.1
<i>Community care only</i>	25.4	25.1	24.7	25.3	25.6	25.6	25.7	25.4
Packages only	1.0	1.0	1.0	1.2	1.3	1.5	1.6	1.6
HACC and/or VHC only	22.9	22.4	21.8	22.0	22.1	22.1	21.8	21.6
Packages and HACC/VHC	1.6	1.7	1.8	2.1	2.2	2.1	2.3	2.3
PRAC and community care	6.8	7.2	6.8	6.9	7.1	7.3	7.2	7.1
RRC and community care	2.2	2.3	2.3	2.4	2.5	2.6	2.6	2.8
PRAC and RRC and community care	3.0	3.1	3.1	3.3	3.4	3.7	3.8	4.1
<i>Any PRAC</i>	49.1	49.9	51.0	51.2	51.9	52.1	52.3	52.2
<i>Any RRC</i>	6.7	6.9	7.0	7.2	7.4	7.7	8.1	8.5
<i>Any community care</i>	37.4	37.7	37.0	37.8	38.5	39.1	39.3	39.5
<i>Any service use</i>	77.2	77.8	78.5	79.3	80.4	80.8	81.1	80.9
No service use	22.8	22.2	21.5	20.7	19.6	19.2	18.9	19.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of female deaths^(b)	54,311	53,318	54,318	54,841	57,892	58,913	58,071	59,977

(a) Table does not include TCP and ACAP. See Table A2.17 for TCP use and Table A2.18 for ACAP use.

(b) From the NDI. Numbers differ from published ABS figures due to different scope and also because of the data cleaning processes undertaken by the ABS for mortality statistics. Note also that dummy dates of birth based on age at death were derived for 1,214 people on the NDI. Some of these people were aged under 65, and some may have matched to program users with a fully reported date of birth (see Appendix B for derivation of demographic values).

Note: Age is as at 1 July of the financial year.

Table A2.21 Program use rates by people aged 65+ in the 12 months before death, by age group, aged care program and financial year of death, 2003–04 to 2010–11

Age group/aged care program ^(a)	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Aged 65–74	Percentage of deaths within age group							
PRAC only	9.5	9.5	9.8	9.8	9.8	10.0	10.0	10.0
RRC only	0.3	0.3	0.4	0.4	0.4	0.3	0.4	0.4
PRAC and RRC only	0.6	0.4	0.4	0.5	0.4	0.5	0.4	0.5
<i>Community care only</i>	31.2	32.1	31.0	32.7	34.1	33.3	34.6	34.3
Packages only	0.6	0.7	0.6	0.8	0.7	0.9	1.0	0.9
HACC and/or VHC only	29.5	30.4	29.3	30.5	31.8	31.1	32.1	31.9
Packages and HACC/VHC	1.1	1.1	1.1	1.4	1.6	1.3	1.5	1.5
PRAC and community care	3.0	3.0	3.0	3.1	3.2	3.5	3.5	3.4
RRC and community care	1.3	1.3	1.4	1.5	1.5	1.5	1.5	1.6
PRAC and RRC and community care	1.0	1.1	1.3	1.3	1.2	1.5	1.4	1.6
<i>Any PRAC</i>	14.1	14.0	14.5	14.7	14.6	15.5	15.3	15.6
<i>Any RRC</i>	3.1	3.1	3.6	3.7	3.4	3.8	3.7	4.1
<i>Any community care</i>	36.5	37.5	36.6	38.5	40.0	39.8	40.9	40.9
<i>Any service use</i>	46.9	47.7	47.3	49.2	50.5	50.6	51.8	51.9
No service use	53.1	52.3	52.7	50.8	49.5	49.4	48.2	48.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of deaths^(b)	23,023	22,054	21,028	21,074	21,624	21,802	21,660	22,209
Aged 75–84								
PRAC only	23.2	23.0	24.4	24.0	23.9	24.0	23.7	23.7
RRC only	0.5	0.6	0.6	0.6	0.5	0.5	0.6	0.6
PRAC and RRC only	0.9	0.9	1.0	1.0	1.0	0.9	1.1	1.2
<i>Community care only</i>	31.5	31.1	30.7	31.7	32.0	32.8	32.3	32.4
Packages only	0.9	0.9	1.0	1.0	1.2	1.3	1.4	1.6
HACC and/or VHC only	29.2	28.6	28.1	28.7	28.8	29.3	28.7	28.4
Packages and HACC/VHC	1.4	1.6	1.6	2.0	2.0	2.1	2.2	2.5
PRAC and community care	6.6	6.9	6.7	6.6	7.2	6.9	7.1	6.9
RRC and community care	2.3	2.5	2.5	2.7	2.6	2.7	2.8	2.8
PRAC and RRC and community care	2.8	2.9	3.0	3.2	3.2	3.4	3.8	3.8
<i>Any PRAC</i>	33.6	33.7	35.1	34.8	35.3	35.3	35.7	35.6
<i>Any RRC</i>	6.6	6.9	7.2	7.4	7.4	7.6	8.2	8.5
<i>Any community care</i>	43.3	43.4	43.0	44.1	45.0	45.8	46.1	45.9
<i>Any service use</i>	67.9	67.9	68.9	69.7	70.5	71.3	71.4	71.5
No service use	32.1	32.1	31.1	30.3	29.5	28.7	28.6	28.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of deaths^(b)	43,205	42,713	42,699	42,570	43,628	43,560	41,915	41,780

(continued)

Table A2.21 (continued): Program use rates by people aged 65+ in the 12 months before death, by age group, aged care program and financial year of death, 2003–04 to 2010–11

Age group/aged care program ^(a)	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Aged 85+	Percentage of deaths within age group							
PRAC only	48.4	48.9	49.3	48.7	48.4	47.9	47.6	46.3
RRC only	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
PRAC and RRC only	1.3	1.3	1.3	1.4	1.3	1.3	1.3	1.4
<i>Community care only</i>	20.3	19.9	19.8	20.6	21.0	21.0	21.2	21.3
Packages only	1.0	0.9	1.0	1.3	1.3	1.5	1.5	1.5
HACC and/or VHC only	17.7	17.4	17.0	17.3	17.6	17.5	17.5	17.7
Packages and HACC/VHC	1.6	1.6	1.8	2.0	2.1	2.0	2.2	2.0
PRAC and community care	8.4	8.6	8.4	8.5	8.4	8.9	8.6	8.7
RRC and community care	2.5	2.6	2.8	2.8	2.9	3.0	3.2	3.3
PRAC and RRC and community care	3.9	3.9	4.0	4.1	4.4	4.6	4.9	5.1
<i>Any PRAC</i>	62.0	62.7	63.0	62.7	62.6	62.7	62.4	61.6
<i>Any RRC</i>	8.3	8.4	8.7	8.9	9.1	9.5	10.1	10.4
<i>Any community care</i>	35.0	35.1	35.0	35.9	36.7	37.5	37.9	38.4
<i>Any service use</i>	85.3	85.8	86.2	86.7	87.0	87.3	87.4	86.7
No service use	14.7	14.2	13.8	13.3	13.0	12.7	12.6	13.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of deaths^(b)	38,924	38,451	40,538	41,811	46,194	48,081	48,427	51,643

(a) Table does not include TCP and ACAP. See Table A2.17 for TCP use and Table A2.18 for ACAP use.

(b) From the NDI. Numbers differ from published ABS figures due to different scope and also because of the data cleaning processes undertaken by the ABS for mortality statistics. Note also that dummy dates of birth based on age at death were derived for 1,214 people on the NDI. Some of these people were aged under 65, and some may have matched to program users with a fully reported date of birth (see Appendix B for derivation of demographic values).

Note: Age is at 1 July of the financial year.

Table A2.22: Program use rates by men aged 65+ in the 12 months before death, by age group, aged care program and financial year of death, 2003–04 to 2010–11

Age group/aged care program ^(a)	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Men aged 65–74	Percentage of male deaths within age group							
PRAC only	8.6	8.4	8.9	8.9	8.7	9.2	9.4	9.1
RRC only	0.4	0.4	0.4	0.4	0.3	0.3	0.5	0.4
PRAC and RRC only	0.6	0.4	0.4	0.6	0.5	0.4	0.3	0.6
<i>Community care only</i>	28.5	29.7	28.4	29.6	31.6	30.4	31.5	31.4
Packages only	0.4	0.5	0.4	0.7	0.6	0.7	0.8	0.7
HACC and/or VHC only	27.3	28.5	27.1	27.9	29.8	28.8	29.7	29.7
Packages and HACC/VHC	0.8	0.7	0.9	1.0	1.2	1.0	1.0	1.1
PRAC and community care	2.5	2.6	2.6	2.6	2.8	3.2	3.0	3.1
RRC and community care	1.2	1.2	1.3	1.5	1.3	1.3	1.4	1.5
PRAC and RRC and community care	0.9	0.9	1.3	1.1	1.2	1.3	1.2	1.3
<i>Any PRAC</i>	12.7	12.3	13.1	13.2	13.1	14.1	14.0	14.1
<i>Any RRC</i>	3.0	2.8	3.4	3.6	3.2	3.4	3.5	3.8
<i>Any community care</i>	33.1	34.4	33.6	34.9	36.8	36.2	37.2	37.3
<i>Any service use</i>	42.7	43.5	43.3	44.7	46.2	46.2	47.4	47.4
No service use	57.3	56.5	56.7	55.3	53.8	53.8	52.6	52.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of deaths^(b)	14,365	13,670	12,974	12,934	13,291	13,471	13,340	13,613
Men aged 75–84								
PRAC only	18.1	18.3	19.3	19.0	19.2	19.4	19.1	19.1
RRC only	0.5	0.5	0.7	0.6	0.6	0.6	0.6	0.7
PRAC and RRC only	0.9	0.9	1.1	1.0	1.0	0.9	1.0	1.2
<i>Community care only</i>	31.9	31.5	30.7	32.0	32.3	33.3	32.5	32.7
Packages only	0.7	0.7	0.8	0.8	1.0	1.2	1.0	1.3
HACC and/or VHC only	30.0	29.5	28.7	29.6	29.6	30.3	29.6	29.2
Packages and HACC/VHC	1.2	1.3	1.2	1.7	1.7	1.9	1.8	2.1
PRAC and community care	6.3	6.2	6.2	6.1	6.8	6.4	6.9	6.6
RRC and community care	2.2	2.5	2.5	2.6	2.6	2.7	2.7	2.7
PRAC and RRC and community care	2.8	2.8	3.0	3.1	3.0	3.3	3.7	3.6
<i>Any PRAC</i>	28.1	28.2	29.6	29.1	30.0	30.0	30.8	30.5
<i>Any RRC</i>	6.4	6.7	7.2	7.3	7.2	7.5	8.1	8.2
<i>Any community care</i>	43.1	43.0	42.5	43.8	44.8	45.7	45.9	45.6
<i>Any service use</i>	62.6	62.7	63.6	64.4	65.5	66.6	66.5	66.7
No service use	37.4	37.3	36.4	35.6	34.5	33.4	33.5	33.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of deaths^(b)	22,708	22,733	22,699	22,731	23,614	23,537	22,681	22,710

(continued)

Table A2.22 (continued): Program use rates by men aged 65+ in the 12 months before death, by age group, aged care program and financial year of death, 2003–04 to 2010–11

Age group/aged care program ^(a)	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Men aged 85+	Percentage of male deaths within age group							
PRAC only	35.3	35.7	36.1	35.3	35.1	35.3	34.9	34.2
RRC only	0.7	0.7	0.7	0.8	0.7	0.8	0.8	0.7
PRAC and RRC only	1.5	1.6	1.6	1.6	1.5	1.4	1.5	1.7
<i>Community care only</i>	25.7	25.5	25.2	26.8	26.6	26.3	26.8	26.8
Packages only	1.1	1.0	1.2	1.4	1.4	1.4	1.4	1.5
HACC and/or VHC only	22.7	22.7	22.1	23.2	22.9	22.6	23.1	23.1
Packages and HACC/VHC	1.9	1.9	2.0	2.2	2.3	2.2	2.3	2.2
PRAC and community care	9.8	9.8	10.0	9.9	9.9	10.6	9.8	10.0
RRC and community care	2.8	3.0	3.3	3.2	3.3	3.4	3.9	3.9
PRAC and RRC and community care	4.4	4.3	4.6	4.7	5.0	5.3	5.8	5.8
<i>Any PRAC</i>	51.0	51.4	52.3	51.6	51.5	52.6	52.0	51.7
<i>Any RRC</i>	9.3	9.6	10.2	10.4	10.5	10.9	12.0	12.1
<i>Any community care</i>	42.7	42.6	43.2	44.7	44.8	45.5	46.4	46.5
<i>Any service use</i>	80.2	80.6	81.5	82.4	82.1	83.0	83.5	83.1
No service use	19.8	19.4	18.5	17.6	17.9	17.0	16.5	16.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of deaths^(b)	13,763	13,484	14,266	14,947	16,646	17,522	17,909	19,328

(a) Table does not include TCP and ACAP. See Table A2.17 for TCP use and Table A2.18 for ACAP use.

(b) From the NDI. Numbers differ from published ABS figures due to different scope and also because of the data cleaning processes undertaken by the ABS for mortality statistics. Note also that dummy dates of birth based on age at death were derived for 1,214 people on the NDI. Some of these people were aged under 65, and some may have matched to program users with a fully reported date of birth (see Appendix B for derivation of demographic values).

Note: Age is at 1 July of the financial year.

Table A2.23: Program use rates by women aged 65+ in the 12 months before death, by age group, aged care program and financial year of death, 2003–04 to 2010–11

Age group/aged care program ^(a)	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Women aged 65–74	Percentage of female deaths within age group							
PRAC only	10.9	11.3	11.2	11.2	11.5	11.4	11.1	11.6
RRC only	0.2	0.3	0.4	0.4	0.4	0.3	0.4	0.4
PRAC and RRC only	0.5	0.4	0.6	0.5	0.4	0.5	0.4	0.4
<i>Community care only</i>	35.7	36.1	35.1	37.7	38.3	38.1	39.5	38.9
Packages only	0.8	1.0	0.9	1.0	1.0	1.3	1.3	1.3
HACC and/or VHC only	33.2	33.3	32.7	34.7	35.0	35.0	36.0	35.5
Packages and HACC/VHC	1.7	1.7	1.5	2.0	2.2	1.8	2.2	2.1
PRAC and community care	3.8	3.8	3.6	3.7	3.8	4.0	4.1	4.0
RRC and community care	1.4	1.4	1.5	1.4	1.8	1.8	1.7	1.8
PRAC and RRC and community care	1.2	1.4	1.3	1.6	1.2	1.8	1.7	1.9
<i>Any PRAC</i>	16.4	16.9	16.7	17.0	16.9	17.6	17.3	17.9
<i>Any RRC</i>	3.3	3.5	3.8	3.9	3.8	4.4	4.1	4.5
<i>Any community care</i>	42.1	42.7	41.6	44.4	45.1	45.6	47.0	46.6
<i>Any service use</i>	53.7	54.7	53.7	56.4	57.4	57.8	58.9	59.1
No service use	46.3	45.3	46.3	43.6	42.6	42.2	41.1	40.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of deaths^(b)	8,656	8,377	8,053	8,140	8,331	8,331	8,319	8,595
Women aged 75–84								
PRAC only	28.8	28.4	30.0	29.9	29.4	29.5	29.2	29.2
RRC only	0.5	0.6	0.5	0.5	0.5	0.5	0.6	0.6
PRAC and RRC only	0.9	1.0	1.0	1.0	1.1	1.0	1.1	1.2
<i>Community care only</i>	31.1	30.7	30.7	31.2	31.7	32.2	32.2	32.1
Packages only	1.1	1.2	1.2	1.2	1.4	1.5	1.8	1.8
HACC and/or VHC only	28.3	27.6	27.4	27.6	27.8	28.2	27.7	27.4
Packages and HACC/VHC	1.7	1.9	2.1	2.4	2.4	2.5	2.7	2.9
PRAC and community care	7.0	7.6	7.3	7.1	7.6	7.5	7.3	7.2
RRC and community care	2.4	2.5	2.5	2.7	2.6	2.7	2.8	3.0
PRAC and RRC and community care	2.9	3.0	3.1	3.3	3.4	3.5	3.9	4.1
<i>Any PRAC</i>	39.7	40.0	41.4	41.3	41.4	41.5	41.5	41.7
<i>Any RRC</i>	6.8	7.2	7.1	7.5	7.6	7.7	8.4	8.8
<i>Any community care</i>	43.4	43.9	43.5	44.3	45.3	45.9	46.3	46.3
<i>Any service use</i>	73.7	73.8	75.1	75.7	76.3	76.9	77.1	77.3
No service use	26.3	26.2	24.9	24.3	23.7	23.1	22.9	22.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of deaths^(b)	20,494	19,977	19,995	19,837	20,013	20,023	19,234	19,070

(continued)

Table A2.23 (continued): Program use rates by women aged 65+ in the 12 months before death, by age group, aged care program and financial year of death, 2003–04 to 2010–11

Age group/aged care program ^(a)	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Women aged 85+	Percentage of female deaths within age group							
PRAC only	55.5	56.0	56.5	56.1	56.0	55.0	55.0	53.6
RRC only	0.6	0.5	0.5	0.5	0.5	0.6	0.5	0.5
PRAC and RRC only	1.2	1.1	1.2	1.3	1.2	1.2	1.2	1.3
<i>Community care only</i>	<i>17.3</i>	<i>16.9</i>	<i>16.9</i>	<i>17.1</i>	<i>17.8</i>	<i>18.0</i>	<i>17.8</i>	<i>17.9</i>
Packages only	0.9	0.8	0.9	1.2	1.2	1.5	1.6	1.5
HACC and/or VHC only	14.9	14.6	14.3	14.1	14.6	14.5	14.2	14.5
Packages and HACC/VHC	1.5	1.5	1.7	1.9	2.0	1.9	2.1	2.0
PRAC and community care	7.6	8.0	7.5	7.7	7.6	8.0	7.9	7.9
RRC and community care	2.3	2.4	2.5	2.5	2.6	2.7	2.8	3.0
PRAC and RRC and community care	3.7	3.7	3.7	3.7	4.0	4.3	4.4	4.7
<i>Any PRAC</i>	<i>68.0</i>	<i>68.8</i>	<i>68.8</i>	<i>68.8</i>	<i>68.8</i>	<i>68.5</i>	<i>68.6</i>	<i>67.5</i>
<i>Any RRC</i>	<i>7.7</i>	<i>7.8</i>	<i>7.8</i>	<i>8.0</i>	<i>8.3</i>	<i>8.7</i>	<i>8.9</i>	<i>9.5</i>
<i>Any community care</i>	<i>30.9</i>	<i>31.0</i>	<i>30.5</i>	<i>31.1</i>	<i>32.1</i>	<i>32.9</i>	<i>32.9</i>	<i>33.5</i>
<i>Any service use</i>	<i>88.2</i>	<i>88.7</i>	<i>88.7</i>	<i>89.0</i>	<i>89.7</i>	<i>89.7</i>	<i>89.7</i>	<i>88.9</i>
No service use	11.8	11.3	11.3	11.0	10.3	10.3	10.3	11.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of deaths^(b)	25,161	24,964	26,270	26,864	29,548	30,559	30,518	32,312

(a) Table does not include TCP and ACAP. See Table A2.17 for TCP use and Table A2.18 for ACAP use.

(b) From the NDI. Numbers differ from published ABS figures due to different scope and also because of the data cleaning processes undertaken by the ABS for mortality statistics. Note also that dummy dates of birth based on age at death were derived for 1,214 people on the NDI. Some of these people were aged under 65, and some may have matched to program users with a fully reported date of birth (see Appendix B for derivation of demographic values).

Note: Age is at 1 July of the financial year.

A3 Tables for Section 3

Table A3.1: Time between reference ACAT assessment and most recent previous assessment, by highest care approved, ACAP 2009–10 cohort

Time since previous ACAT assessment ^(a)	Highest care approved					Total (%)	Total (N)
	PRAC	Package	RRC	TCP	No approval		
Since complete assessment	Percentage within approval and assessment group						
<1 year	6.8	4.0	1.7	1.9	4.8	5.2	2,132
1–<2 years	6.9	4.5	3.8	1.2	3.8	5.4	2,196
2–<3 years	2.6	2.1	2.0	0.6	2.0	2.3	930
≥3 years	4.0	3.0	3.0	1.9	3.2	3.5	1,428
No earlier assessment	79.7	86.4	89.4	94.5	86.2	83.6	34,184
Total	100.0	100.0	100.0	100.0	100.0	100.0	40,870
Since incomplete assessment							
<1 year	2.0	1.4	1.3	0.8	1.3	1.7	675
1–<2 years	1.4	1.0	1.0	0.5	1.1	1.2	490
2–<3 years	0.8	0.5	0.4	0.5	0.6	0.7	267
≥3 years	1.3	1.1	0.9	1.1	1.0	1.2	475
No earlier assessment	94.5	96.0	96.3	97.2	96.0	95.3	38,963
Total	100.0	100.0	100.0	100.0	100.0	100.0	40,870
Since any assessment							
<1 year	8.5	5.3	2.9	2.7	6.0	6.7	2,719
1–<2 years	7.7	5.1	4.6	1.5	4.5	6.1	2,505
2–<3 years	3.0	2.4	2.2	1.0	2.3	2.6	1,055
≥3 years	4.6	3.6	3.5	2.5	3.7	4.0	1,655
No earlier assessment	76.2	83.7	86.8	92.4	83.6	80.6	32,936
Total	100.0	100.0	100.0	100.0	100.0	100.0	40,870
Total (cohort members)	21,134	6,153	4,595	1,987	7,001	..	40,870
Total (row %)	51.7	15.1	11.2	4.9	17.1	100.0	..

(a) 'Time since previous ACAT assessment' is the time since the end of previous assessment (complete or incomplete, as relevant) to the start of the reference assessment.

Notes

1. People may have previously had both a complete and incomplete assessment.
2. Components may not sum to the total due to rounding.

Table A3.2: Any program use within 12 months, by highest care level approved and care program, ACAP 2009–10 cohort

Program ^(b)	Highest care approved ^(a)					Total	Total
	PRAC	Package	RRC	TCP	None		
	Percentage within approval group					%	Number
Any PRAC	48.9	12.4	13.8	13.2	8.3	30.8	12,587
Any package	12.6	41.6	4.5	8.1	4.7	14.5	5,919
Any RRC	23.3	12.6	25.1	4.8	4.9	17.8	7,285
Any TCP	4.8	13.6	6.1	88.7	3.2	10.1	4,125
Any HACC/VHC	29.1	50.1	49.2	53.0	41.1	37.8	15,430
No program use	21.0	19.7	32.9	5.5	50.7	26.5	10,819
Total	100.0	100.0	100.0	100.0	100.0	100.0	..
Total (cohort members)	21,134	6,153	4,595	1,987	7,001	..	40,870
Total (row %)	51.7	15.1	11.2	4.9	17.1	100.0	..

(a) Approval is from the reference assessment. People may have been approved for other programs at a later assessment.

(b) Program use in the 12 months after the end of the reference assessment, except for HACC and VHC, which do not require an ACAT assessment. For these, program use is from the start date of the reference assessment.

Table A3.3: Highest care approved, by highest care program use within 12 months and other program use, ACAP 2009–10 cohort

Highest care program used in 12 months ^(b) by other program use	Highest care approved ^(a)					Total %	Total Number
	PRAC	Package	RRC	TCP	None		
	Percentage within approval group						
<i>Used PRAC</i>	48.9	12.4	13.8	13.2	8.3	30.8	12,587
Used PRAC only	26.8	1.6	2.5	1.3	2.9	14.9	6,103
Used PRAC and community care, +/- RRC/TCP	10.1	8.8	5.9	4.0	3.6	8.0	3,270
Used PRAC and RRC/TCP	12.1	2.1	5.4	7.9	1.8	7.9	3,214
<i>Used package</i>	9.6	36.7	4.0	7.2	4.4	12.1	4,930
Used package only	4.0	16.8	0.9	0.1	1.6	4.9	2,021
Used package and HACC/VHC, +/- RRC/TCP	4.7	17.5	2.8	4.7	2.5	6.0	2,464
Used package and RRC/TCP	1.0	2.5	0.3	2.4	0.3	1.1	445
<i>Used RRC</i>	6.5	3.5	15.8	1.6	1.5	6.0	2,455
Used RRC only	3.7	1.1	7.2	0.1	0.5	3.0	1,222
Used RRC and HACC/VHC, +/- TCP	2.7	2.2	8.4	1.2	1.0	2.9	1,192
Used RRC and TCP	0.1	0.2	0.2	0.3	—	0.1	41
<i>Used TCP</i>	1.6	8.6	3.4	69.3	2.0	6.2	2,552
Used TCP only	0.8	3.6	1.2	29.1	0.7	2.6	1,070
Used TCP and HACC/VHC	0.9	5.0	2.2	40.2	1.3	3.6	1,482
Used HACC/VHC only	12.3	19.0	30.0	3.3	33.0	18.4	7,527
No program use	21.0	19.7	32.9	5.5	50.7	26.5	10,819
Total	100.0	100.0	100.0	100.0	100.0	100.0	..
Total (cohort members)	21,134	6,153	4,595	1,987	7,001	..	40,870
Total (row %)	51.7	15.1	11.2	4.9	17.1	100.0	..

(a) Approval is from the reference assessment. People may have been approved for other programs at a later assessment.

(b) Program use in the 12 months after the end of the reference assessment, except for HACC and VHC, which do not require an ACAT assessment. For these, program use is from the start date of the reference assessment.

Note: Components may not sum to the total due to rounding.

Table A3.4: Highest care approved, by highest care program use within 12 months, other program use and recommended long-term care setting, ACAP 2009–10 cohort

Highest care program used in 12 months ^(b) by other program use	Highest care approved ^(a)					Total (%)	Total (N)
	PRAC	Package	RRC	TCP	None		
Community recommendation	Percentage within approval and recommendation group					%	Number
<i>Used PRAC</i>	26.8	12.2	13.2	11.2	7.6	15.7	4,351
Used PRAC only	6.8	1.5	2.1	1.0	2.6	3.5	966
Used PRAC and community care, +/- RRC/TCP	12.2	8.6	6.0	4.0	3.4	7.7	2,142
Used PRAC and RRC/TCP	7.8	2.0	5.1	6.1	1.6	4.5	1,243
<i>Used package</i>	17.5	36.9	4.1	7.3	4.4	15.7	4,341
Used package only	7.4	16.9	1.0	0.1	1.6	6.5	1,809
Used package and HACC/VHC, +/- RRC/TCP	8.2	17.5	2.9	4.8	2.5	7.8	2,144
Used package and RRC/TCP	1.8	2.5	0.3	2.4	0.3	1.4	388
<i>Used RRC</i>	8.0	3.4	15.6	1.7	1.5	6.2	1,720
Used RRC only	3.9	1.0	7.1	0.1	0.5	2.7	750
Used RRC and HACC/VHC, +/- TCP	4.0	2.2	8.3	1.3	1.0	3.4	937
Used RRC and TCP	0.1	0.2	0.2	0.3	—	0.1	33
<i>Used TCP</i>	2.4	8.8	3.5	71.2	2.1	8.6	2,364
Used TCP only	0.9	3.7	1.2	29.7	0.7	3.5	962
Used TCP and HACC/VHC	1.5	5.1	2.3	41.4	1.3	5.1	1,402
Used HACC/VHC only	20.1	19.2	30.3	3.4	34.1	23.8	6,578
No program use	25.2	19.7	33.3	5.2	50.3	30.0	8,288
Total	100.0	100.0	100.0	100.0	100.0	100.0	..
Total (cohort members)	8,641	6,010	4,475	1,873	6,643	..	27,642
Total (row %)	31.3	21.7	16.2	6.8	24.0	100.0	..

(continued)

Table A3.4 (continued): Highest care approved, by highest care program use within 12 months, other program use and recommended long-term care setting, ACAP 2009–10 cohort

Highest care program used in 12 months ^(b) by other program use	Highest care approved ^(a)					Total (%)	Total (N)
	PRAC	Package	RRC	TCP	None		
RAC recommendation	Percentage within approval and recommendation group					%	Number
<i>Used PRAC</i>	64.4	21.4	<i>n.p.</i>	<i>n.p.</i>	24.6	63.0	8,149
Used PRAC only	40.7	3.4	<i>n.p.</i>	<i>n.p.</i>	10.4	39.5	5,108
Used PRAC and community care, +/- RRC/TCP	8.7	12.0	<i>n.p.</i>	<i>n.p.</i>	7.3	8.6	1,112
Used PRAC and RRC/TCP	15.0	6.0	<i>n.p.</i>	<i>n.p.</i>	6.9	14.9	1,929
<i>Used package</i>	4.2	26.5	<i>n.p.</i>	<i>n.p.</i>	2.7	4.4	564
Used package only	1.5	6.8	<i>n.p.</i>	<i>n.p.</i>	1.2	1.6	202
Used package and HACC/VHC, +/- RRC/TCP	2.3	18.8	<i>n.p.</i>	<i>n.p.</i>	1.2	2.4	308
Used package and RRC/TCP	0.4	0.9	<i>n.p.</i>	<i>n.p.</i>	0.4	0.4	54
<i>Used RRC</i>	5.5	6.8	<i>n.p.</i>	<i>n.p.</i>	2.3	5.5	717
Used RRC only	3.6	4.3	<i>n.p.</i>	<i>n.p.</i>	1.5	3.6	461
Used RRC and HACC/VHC, +/- TCP	1.9	1.7	<i>n.p.</i>	<i>n.p.</i>	0.8	1.9	249
Used RRC and TCP	—	0.9	<i>n.p.</i>	<i>n.p.</i>	—	0.1	7
<i>Used TCP</i>	1.0	4.3	<i>n.p.</i>	<i>n.p.</i>	1.2	1.1	145
Used TCP only	0.6	0.9	<i>n.p.</i>	<i>n.p.</i>	0.8	0.7	86
Used TCP and HACC/VHC	0.4	3.4	<i>n.p.</i>	<i>n.p.</i>	0.4	0.5	59
Used HACC/VHC only	6.9	15.4	<i>n.p.</i>	<i>n.p.</i>	7.7	7.1	915
No program use	18.0	25.6	<i>n.p.</i>	<i>n.p.</i>	61.5	18.9	2,448
Total	100.0	100.0	100.0	100.0	100.0	100.0	..
Total (cohort members)	12,411	117	99	51	260	..	12,938
Total (row %)	95.9	0.9	0.8	0.4	2.0	100.0	..

(a) Approval is from the reference assessment. People may have been approved for other programs at a later assessment.

(b) Program use in the 12 months after the end of the reference assessment, except for HACC and VHC, which do not require an ACAT assessment. For these, program use is from the start date of the reference assessment.

Notes

1. Table excludes 290 cases with missing recommendation.
2. Components may not sum to the total due to rounding.

Table A3.5: Highest care program used within 12 months, by other program use and recommended long-term care setting within RAC, ACAP 2009–10 cohort with approval for permanent RAC^(a) and with RAC as recommended long-term care setting

Highest care program used in 12 months ^(b) by other program use	Recommended to live in low level care, RAC	Recommended to live in high level care, RAC	Total
Percentage within recommended RAC care level			
<i>Used PRAC</i>	58.4	69.1	64.4
Used PRAC only	31.2	48.3	40.7
Used PRAC and community care, +/- RRC/TCP	10.9	7.0	8.7
Used PRAC and RRC/TCP	16.4	13.9	15.0
<i>Used package</i>	6.0	2.7	4.2
Used package only	2.2	1.0	1.5
Used package and HACC/VHC, +/- RRC/TCP	3.3	1.5	2.3
Used package and RRC/TCP	0.5	0.3	0.4
<i>Used RRC</i>	6.1	5.0	5.5
Used RRC only	3.5	3.6	3.6
Used RRC and HACC/VHC, +/- TCP	2.5	1.4	1.9
Used RRC and TCP	0.1	—	0.0
<i>Used TCP</i>	1.1	1.0	1.0
Used TCP only	0.6	0.7	0.6
Used TCP and HACC/VHC	0.5	0.3	0.4
Used HACC/VHC only	9.7	4.6	6.9
No program use	18.6	17.5	18.0
Total	100.0	100.0	100.0
Total (cohort members)	5,492	6,919	12,411
Total (row %)	44.3	55.7	100.0

(a) Approval is from the reference assessment. People may have been approved for other programs at a later assessment.

(b) Program use in the 12 months after the end of the reference assessment, except for HACC and VHC, which do not require an ACAT assessment. For these, program use is from the start date of the reference assessment.

Table A3.6: Highest care approved, by age and sex, ACAP 2009–10 cohort

	PRAC	Package	RRC	TCP only	No approval	Total	Total	Total	Mean age
	Percentage within age and sex group						Percent- age of cohort	Number in subgroup	Years
Men									
65–74	49.2	14.3	9.6	6.8	20.2	100.0	9.2	3,772	70.9
75–84	49.9	14.8	12.2	4.7	18.4	100.0	21.6	8,835	80.4
85+	60.5	11.7	12.3	2.8	12.6	100.0	11.9	4,849	88.9
Total	52.7	13.8	11.7	4.6	17.2	100.0	42.7	17,456	80.7
Women									
65–74	39.5	19.5	9.8	7.9	23.2	100.0	9.8	3,994	71.1
75–84	48.1	16.6	10.7	5.3	19.3	100.0	27.4	11,180	80.6
85+	60.5	13.4	11.7	3.3	11.1	100.0	20.2	8,240	89.2
Total	51.0	16.0	10.9	5.0	17.1	100.0	57.3	23,414	82.0
All									
65–74	44.2	17.0	9.7	7.4	21.7	100.0	19.0	7,766	71.0
75–84	48.9	15.8	11.4	5.0	18.9	100.0	49.0	20,015	80.5
85+	60.5	12.8	11.9	3.1	11.7	100.0	32.0	13,089	89.1
Total	51.7	15.1	11.2	4.9	17.1	100.0	100.0	40,870	81.4

Note: Approval is from the reference assessment. People may have been approved for other programs at a later assessment within 12 months.

Table A3.7: Highest care approved within selected demographic subgroups of ACAP 2009–10 cohort

Characteristic	PRAC	Package	RRC	TCP only	No approval	Total	Total	Total	Mean age
	Percentage within subgroup						Percent- age of cohort ^(a)	Number in subgroup	Years
EP 2–4 ^(b)	50.2	17.4	10.0	4.6	17.8	100.0	23.8	9,707	81.2
With co-resident carer	51.9	14.6	14.8	4.2	14.6	100.0	51.4	21,008	80.9
With non-resident carer	54.5	16.9	9.1	4.4	15.1	100.0	30.8	12,574	83.0
Carer not available	43.3	14.5	4.8	8.4	28.9	100.0	14.8	6,048	79.9
Owner/buyer	49.6	15.4	12.2	5.1	17.6	100.0	74.7	30,521	81.5
All renters	50.8	17.9	8.1	5.2	18.0	100.0	11.9	4,855	78.9
In retirement village/supported accommodation	63.7	11.3	9.9	3.6	11.4	100.0	10.0	4,088	84.3
Cohort	51.7	15.1	11.2	4.9	17.1	100.0	100.0	40,870	81.4

(a) Missing values are included in the denominator.

(b) Derived using data across all PIAC programs reporting country of birth.

Note: Approval is from the reference assessment. People may have been approved for other programs at a later assessment within 12 months.

Table A3.8: Highest care approved by highest care used within selected demographic subgroups of ACAP 2009–10 cohort

Highest care approved ^(a) / highest care used ^(b)			Carer residency status					Housing			Cohort
	Men	Women	Aged 85+	EP 2–4	With carer	Else-where	No carer	Renter	Retire-ment village ^(c)	Owner/buyer	
Permanent RAC	Percentage within approval group and cohort subgroup										
Used PRAC	48.8	49.0	51.0	46.2	45.3	52.4	51.9	52.9	54.7	46.9	48.9
Used package	8.9	10.2	8.2	10.4	9.6	10.8	9.0	9.5	8.9	10.1	9.6
Used RRC	7.0	6.1	6.2	6.4	7.6	5.2	5.3	4.5	4.4	7.3	6.5
Used TCP	1.8	1.5	1.4	1.6	1.7	1.5	2.0	1.6	0.9	1.8	1.6
Used HACC/VHC	12.8	12.0	11.5	13.0	14.2	11.4	9.6	11.5	10.2	13.2	12.3
No program use	20.8	21.1	21.6	22.4	21.7	18.6	22.2	20.0	20.9	20.8	21.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	9,195	11,939	7,917	4,875	10,895	6,851	2,620	2,468	2,605	15,147	21,134
Packaged care											
Used PRAC	12.6	12.4	16.4	9.6	12.1	14.3	9.6	12.2	17.7	11.9	12.4
Used package	35.5	37.5	34.4	40.1	32.8	41.3	40.1	40.4	44.1	35.2	36.7
Used RRC	4.5	2.8	4.2	2.7	4.5	2.7	1.8	2.2	2.6	3.8	3.5
Used TCP	8.2	9.0	6.6	6.4	8.4	6.7	14.3	7.7	3.9	9.4	8.6
Used HACC/VHC	20.5	18.0	18.3	20.7	21.6	17.1	15.1	18.9	13.8	19.6	19.0
No program use	18.8	20.3	20.1	20.5	20.6	18.0	19.2	18.6	17.9	20.1	19.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	2,411	3,742	1,673	1,688	3,058	2,121	876	867	463	4,713	6,153
Respite RAC											
Used PRAC	12.8	14.6	16.3	12.5	12.8	16.4	11.6	17.4	18.0	12.8	13.8
Used package	3.8	4.3	3.6	4.4	3.8	4.5	5.8	3.6	4.9	4.0	4.0
Used RRC	15.0	16.5	17.0	13.9	16.6	12.1	20.1	12.3	15.8	16.1	15.8
Used TCP	3.0	3.8	2.9	3.2	2.6	4.0	10.2	5.4	4.2	3.2	3.4
Used HACC/VHC	32.4	28.1	26.2	30.1	31.4	29.3	21.2	28.1	26.2	30.9	30.0
No program use	33.1	32.8	34.1	35.8	32.8	33.6	31.1	33.2	30.9	33.0	32.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	2,039	2,556	1,562	969	3,107	1,143	293	391	405	3,731	4,595

(continued)

Table A3.8 (continued): Highest program approval by highest care used within selected demographic subgroups of ACAP 2009–10 cohort

Highest care approved ^(a) / highest care used ^(b)					Carer residency status			Housing			Cohort
	Men	Women	Aged 85+	EP 2–4	With carer	Else-where	No carer	Renter	Retire-ment village ^(c)	Owner/buyer	
TCP	Percentage within approval group and cohort subgroup										
Used PRAC	14.3	12.4	20.1	13.7	11.3	17.9	11.0	16.9	17.4	12.2	13.2
Used package	6.6	7.6	9.8	9.3	6.6	8.4	7.2	10.6	10.1	6.4	7.2
Used RRC	2.2	1.2	3.2	1.8	1.9	1.6	0.6	1.2	0.7	1.7	1.6
Used TCP	68.0	70.1	57.1	66.1	70.3	64.5	72.8	66.9	64.4	70.2	69.3
Used HACC/VHC	3.1	3.4	3.9	3.5	3.7	2.7	3.5	0.4	3.4	3.8	3.3
No program use	5.8	5.2	5.9	5.5	6.1	4.8	4.9	3.9	4.0	5.7	5.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	806	1,181	408	451	873	558	511	254	149	1,556	1,987
No approval											
Used PRAC	8.8	8.0	11.9	7.3	7.2	12.2	6.1	9.3	15.5	7.6	8.3
Used package	4.5	4.3	4.3	5.0	4.1	5.4	4.2	4.8	6.4	4.2	4.4
Used RRC	1.6	1.5	2.3	0.9	1.9	1.6	0.8	1.0	1.3	1.6	1.5
Used TCP	2.1	2.0	2.0	1.9	2.1	1.2	2.5	1.9	1.3	2.0	2.0
Used HACC/VHC	31.3	34.3	31.2	33.1	32.9	33.5	35.0	31.4	25.1	34.7	33.0
No program use	51.8	50.0	48.3	51.8	51.8	46.1	51.4	51.5	50.4	49.9	50.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	3,005	3,996	1,529	1,724	3,075	1,901	1,748	875	466	5,374	7,001
All approvals											
Used PRAC	31.1	30.6	36.9	28.1	28.7	35.1	27.1	33.0	41.0	28.6	30.8
Used package	11.1	12.8	10.6	13.9	11.2	14.5	11.8	13.8	12.2	12.0	12.1
Used RRC	6.4	5.7	6.7	5.3	7.4	4.7	3.8	3.9	4.8	6.5	6.0
Used TCP	5.9	6.5	4.0	5.6	5.7	5.4	10.3	6.5	3.9	6.6	6.2
Used HACC/VHC	18.9	18.1	16.2	19.2	20.1	16.9	17.8	17.2	13.7	19.7	18.4
No program use	26.6	26.4	25.5	27.8	27.0	23.4	29.2	25.7	24.3	26.5	26.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	17,456	23,414	13,089	9,707	21,008	12,574	6,048	4,855	4,088	30,521	40,870

(a) Approval is from the reference assessment. People may have been approved for other programs at a later assessment within 12 months.

(b) Program use in the 12 months after the end of the reference assessment, except for HACC and VHC, which do not require an ACAT assessment. For these, program use is from the start date of the reference assessment.

(c) Includes supported accommodation (not RAC).

Table A3.9: Highest care approved^(a) within selected health-based subgroups of ACAP 2009–10 cohort

Characteristic	PRAC	Package	RRC	TCP only	No approval	Total	Total	Total	Mean age
							Percent- age of cohort ^(b)	Number in subgroup	Years
Main health condition	Percentage within subgroup								
Neoplasms	66.1	10.2	7.8	3.1	12.8	100.0	7.0	2,880	79.7
Endocrine	38.7	18.0	12.8	1.7	28.7	100.0	3.1	1,286	80.2
Mental-dementia	65.5	12.4	11.1	0.4	10.6	100.0	19.3	7,888	81.1
Mental-other	51.1	14.2	10.8	2.0	22.0	100.0	4.4	1,808	78.2
Nervous system	52.6	16.8	14.3	1.8	14.6	100.0	4.1	1,670	78.1
Circulatory – heart disease	46.6	16.4	13.7	3.1	20.2	100.0	7.7	3,166	83.4
Circulatory – CBV	58.3	13.4	9.2	8.8	10.4	100.0	8.2	3,351	80.1
Circulatory-other	39.1	15.5	12.6	3.0	29.9	100.0	3.6	1,456	82.6
Respiratory system	48.8	18.2	11.9	4.1	17.0	100.0	4.3	1,760	80.7
Musculoskeletal disease	37.8	19.4	13.2	4.3	25.3	100.0	9.7	3,944	82.5
Injury and poisoning	35.7	16.1	10.4	26.0	11.7	100.0	6.8	2,767	81.9
Symptoms and signs	51.6	15.0	10.4	4.2	18.8	100.0	13.0	5,331	83.1
Other ^(c)	48.4	16.9	12.0	4.8	18.0	100.0	8.1	3,295	83.0
Missing	30.6	10.1	1.1	1.9	56.3	100.0	0.7	268	80.9
Total	51.7	15.1	11.2	4.9	17.1	100.0	100.0	40,870	81.4
Other health characteristic									
Any diagnosis of dementia	66.5	12.2	10.4	0.9	9.9	100.0	25.8	10,526	81.4
Assessed in hospital	67.3	9.5	4.5	14.4	4.3	100.0	21.1	8,643	81.0
Reassessed in 12 months ^(d)	36.4	18.8	15.2	8.5	21.1	100.0	22.2	9,059	81.6
Died within 12 months ^(e)	71.9	10.1	7.0	3.3	7.7	100.0	17.8	7,268	82.2
Cohort	51.7	15.1	11.2	4.9	17.1	100.0	100.0	40,870	81.4

(a) Approval is from the reference assessment. People may have been approved for other programs at a later assessment within 12 months.

(b) Missing values are included in the denominator.

(c) 'Other' includes health conditions with fewer than 1,000 cohort members reporting this as their main health condition. In particular, it includes: infections; blood disorders; eye and ear conditions; digestive, skin, genitourinary and congenital conditions and not specified conditions.

(d) The person's next complete ACAT assessment ended within 12 months of the end of the reference assessment.

(e) Died within 12 months of the end of the reference assessment.

Table A3.10: Age, number of care needs and number of diagnoses, by highest care approved, ACAP 2009–10 cohort (mean number)

Characteristic	PRAC	Package	RRC	TCP only	No approval	All
Age (years)	82.3	80.6	81.8	79.2	79.9	81.4
ADL (maximum = 5)	2.8	2.2	1.9	2.9	1.0	2.3
IADL (maximum = 5)	4.4	4.3	4.2	4.1	2.9	4.1
Total activity limitations (maximum = 10)	7.2	6.5	6.1	7.0	3.9	6.4
Diagnoses reported affecting care (maximum = 10) ^(a)	6.2	6.1	5.8	5.7	4.4	5.8

(a) In some cases, the first (main) health condition was missing but there were other health conditions reported. 'Number of diagnoses' was set to missing for all 268 cases with no reported main health condition.

Note: Approval is from the reference assessment. People may have been approved for other programs at a later assessment within 12 months.

Table A3.11: Highest care approved by highest care used within selected health-based subgroups of ACAP 2009–10 cohort

Highest care approved ^(a) / highest care used ^(b)	Assessed in hospital	Activity limitations 8+	Diagnoses 8+	Any dementia	Reassessed in 12 months ^(c)	Died in 12 months ^(d)	Cohort
Permanent RAC							
Percentage within approval group and cohort subgroup							
Used PRAC	65.9	54.7	49.3	56.4	57.0	54.9	48.9
Used package	4.2	8.2	9.4	9.3	13.5	4.6	9.6
Used RRC	6.0	6.4	6.7	6.3	7.3	8.3	6.5
Used TCP	3.1	2.0	1.7	0.8	3.4	1.8	1.6
Used HACC/VHC	4.0	9.9	12.1	10.5	9.4	8.7	12.3
No program use	16.8	18.8	20.8	16.7	9.3	21.8	21.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	5,815	9,904	9,427	7,005	3,293	5,223	21,134
Packaged care							
Used PRAC	10.9	14.8	12.2	20.2	43.4	23.0	12.4
Used package	22.6	30.4	36.9	36.2	29.5	24.6	36.7
Used RRC	5.0	4.6	3.7	4.5	4.8	4.6	3.5
Used TCP	41.1	10.2	9.8	2.7	6.4	8.3	8.6
Used HACC/VHC	7.7	20.0	18.9	18.1	9.6	19.2	19.0
No program use	12.7	20.0	18.5	18.4	6.3	20.4	19.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	818	1,873	2,602	1,289	1,707	736	6,153
Respite RAC							
Used PRAC	22.5	16.8	14.1	20.5	43.9	21.5	13.8
Used package	5.4	4.1	3.6	5.4	11.3	1.4	4.0
Used RRC	29.4	19.5	15.6	14.6	16.4	17.8	15.8
Used TCP	20.5	5.8	4.2	1.3	3.9	3.3	3.4
Used HACC/VHC	6.4	27.3	31.5	28.7	15.5	30.5	30.0
No program use	15.9	26.4	31.0	29.5	9.0	25.6	32.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	391	1,138	1,707	1,095	1,375	512	4,595
TCP							
Used PRAC	12.3	14.8	14.9	n.p.	33.6	22.5	13.2
Used package	6.2	8.0	7.7	n.p.	17.9	5.8	7.2
Used RRC	1.8	1.7	2.0	n.p.	4.1	2.5	1.6
Used TCP	70.1	66.6	67.4	n.p.	41.1	58.8	69.3
Used HACC/VHC	3.5	3.6	2.2	n.p.	2.2	2.1	3.3
No program use	6.1	5.4	5.8	n.p.	1.0	8.3	5.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	1,244	942	690	92	773	240	1,987

(continued)

Table A3.11 (continued): Highest care approved by highest care used within selected health-based subgroups of ACAP 2009–10 cohort

Highest care approved ^(a) / highest care used ^(b)	Assessed in hospital	Activity limitations 8+	Diagnoses 8+	Any dementia	Reassessed in 12 months ^(c)	Died in 12 months ^(d)	Cohort
No approval							
Percentage within approval group and cohort subgroup							
Used PRAC	14.9	14.0	8.4	15.9	29.1	18.0	8.3
Used package	2.7	7.6	4.2	5.9	14.9	3.2	4.4
Used RRC	2.7	2.7	1.6	2.7	5.2	3.6	1.5
Used TCP	17.9	3.1	2.5	1.1	4.0	2.9	2.0
Used HACC/VHC	19.2	28.1	33.8	26.7	23.9	26.9	33.0
No program use	42.7	44.5	49.4	47.7	22.9	45.4	50.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	375	670	1,230	1,045	1,911	557	7,001
All approvals							
Used PRAC	48.8	42.1	34.6	44.0	44.6	45.4	30.8
Used package	6.2	10.7	12.9	11.9	16.8	6.3	12.1
Used RRC	6.2	6.7	6.6	6.6	7.5	8.1	6.0
Used TCP	17.8	7.6	6.3	1.5	7.4	4.5	6.2
Used HACC/VHC	5.1	13.0	16.6	14.9	12.8	12.5	18.4
No program use	16.0	19.9	23.1	21.2	10.9	23.3	26.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	8,643	14,527	15,656	10,526	9,059	7,268	40,870

(a) Approval is from the reference assessment. People may have been approved for other programs at a later assessment within 12 months.

(b) Program use in the 12 months after the end of the reference assessment, except for HACC and VHC, which do not require an ACAT assessment. For these, program use is from the start date of the reference assessment.

(c) The person's next complete ACAT assessment ended within 12 months of the end of the reference assessment.

(d) Died within 12 months of the end of the reference assessment.

Table A3.12: Highest care approved by highest care used within main health condition, ACAP 2009–10 cohort

Highest care approved ^(a) / highest care used ^(b)	Neoplasms	Endocrine	Dementia	Other mental	Nervous system	Heart disease	CBV	Other circulatory	Respiratory	Muskuloskeletal	Injury and poisoning	Symptoms and signs	Other ^(c)	Cohort ^(d)
Permanent RAC	Percentage within approval group and cohort subgroup													
Used PRAC	43.9	39.4	55.4	49.9	42.1	41.0	60.7	42.5	40.0	35.5	53.1	52.7	44.1	48.9
Used package	5.7	12.2	9.6	9.3	14.2	9.0	7.1	9.6	10.5	12.8	10.0	10.2	10.7	9.6
Used RRC	7.7	6.6	6.3	6.6	7.1	7.7	4.6	6.8	7.2	5.8	7.2	6.2	7.0	6.5
Used TCP	1.6	1.8	0.4	0.8	1.5	1.4	3.1	1.1	2.6	1.4	6.2	1.7	1.6	1.6
Used HACC/VHC	11.3	18.7	11.3	10.7	17.3	16.3	8.3	13.0	15.5	16.0	9.2	11.0	12.7	12.3
No program use	29.8	21.3	17.0	22.6	17.8	24.7	16.2	27.0	24.2	28.5	14.3	18.2	23.9	21.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	1,904	498	5,164	923	878	1,476	1,954	570	859	1,492	988	2,752	1,594	21,134
Packaged care														
Used PRAC	10.2	12.5	21.2	10.1	11.4	8.3	11.4	10.7	11.6	8.6	4.7	16.8	10.8	12.4
Used package	33.1	39.7	36.7	44.7	35.9	38.6	33.7	36.4	33.4	39.4	24.0	40.4	38.5	36.7
Used RRC	4.4	1.3	4.2	2.7	3.9	2.9	3.8	4.4	3.4	2.3	4.0	4.0	2.7	3.5
Used TCP	7.8	2.2	0.5	2.7	5.3	4.2	15.8	5.3	6.6	7.4	42.6	5.5	9.7	8.6
Used HACC/VHC	22.5	18.5	19.0	18.3	24.6	21.8	17.9	20.4	26.3	19.6	11.4	16.3	18.3	19.0
No program use	21.8	25.9	18.5	21.4	18.9	24.1	17.4	22.7	18.8	22.7	13.2	17.0	20.0	19.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	293	232	981	257	281	518	448	225	320	767	446	802	556	6,153

(continued)

Table A3.12 (continued): Highest care approved by highest care used within main health condition, ACAP 2009–10 cohort

Highest care approved ^(a) / highest care used ^(b)	Neoplasms	Endocrine	Dementia	Other mental	Nervous system	Heart disease	CBV	Other circulatory	Respiratory	Musculoskeletal	Injury and poisoning	Symptoms and signs	Other ^(c)	Cohort ^(d)
Respite RAC	Percentage within approval group and cohort subgroup													
Used PRAC	10.2	10.9	20.8	17.9	13.0	10.6	11.1	13.7	11.5	9.2	10.8	16.4	11.1	13.8
Used package	3.1	1.2	5.7	5.1	4.6	3.9	2.3	3.8	2.4	4.2	4.2	3.2	4.6	4.0
Used RRC	16.4	17.0	13.9	16.4	16.8	14.3	16.6	13.1	12.9	13.1	31.3	13.9	17.5	15.8
Used TCP	3.5	1.2	0.5	1.0	1.7	2.5	9.1	3.3	3.8	2.7	15.6	2.0	3.8	3.4
Used HACC/VHC	38.1	30.9	28.4	22.6	37.4	33.3	28.3	24.6	33.5	35.3	17.4	29.2	28.9	30.0
No program use	28.8	38.8	30.7	36.9	26.5	35.3	32.6	41.5	35.9	35.5	20.8	35.3	34.2	32.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	226	165	879	195	238	433	307	183	209	519	288	555	395	4,595
TCP														
Used PRAC	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	15.0	n.p.	n.p.	4.8	8.9	20.3	11.4	13.2
Used package	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	9.9	n.p.	n.p.	4.8	5.7	7.7	7.0	7.2
Used RRC	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	1.4	n.p.	n.p.	—	1.5	2.3	1.3	1.6
Used TCP	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	66.3	n.p.	n.p.	85.1	74.7	58.6	71.5	69.3
Used HACC/VHC	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	3.1	n.p.	n.p.	3.0	3.8	3.6	2.5	3.3
No program use	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	4.4	n.p.	n.p.	2.4	5.4	7.7	6.3	5.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	89	22	29	36	30	99	294	43	72	168	720	222	158	1,987

(continued)

Table A3.12 (continued): Highest care approved by highest care used within main health condition, ACAP 2009–10 cohort

Highest care approved ^(a) / highest care used ^(b)	Neoplasms	Endocrine	Dementia	Other mental	Nervous system	Heart disease	CBV	Other circulatory	Respiratory	Musculoskeletal	Injury and poisoning	Symptoms and signs	Other ^(c)	Cohort ^(d)
No approval	Percentage within approval group and cohort subgroup													
Used PRAC	5.7	6.0	15.8	7.1	8.2	6.6	9.8	5.7	5.7	4.9	6.8	11.6	6.8	8.3
Used package	2.2	3.5	6.0	5.5	8.6	3.3	4.0	3.7	4.3	3.9	3.1	5.4	3.4	4.4
Used RRCRRC	1.4	0.5	3.0	0.8	0.8	2.0	2.0	1.1	0.3	0.7	1.8	2.1	1.4	1.5
Used TCP	1.4	1.6	0.4	0.3	0.4	1.9	2.6	1.1	1.3	2.5	13.2	1.2	1.7	2.0
Used HACC/VHC	37.2	35.8	26.9	29.2	36.2	34.1	31.6	30.1	34.7	37.2	33.5	29.7	37.3	33.0
No program use	52.2	52.6	47.9	57.2	45.7	52.2	50.0	58.2	53.7	50.8	41.5	50.0	49.5	50.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	368	369	835	397	243	640	348	435	300	998	325	1,000	592	7,001
All approvals														
Used PRAC	31.9	20.7	43.0	31.3	27.7	23.8	40.3	22.3	24.4	17.7	24.0	34.4	26.3	30.8
Used package	7.8	13.3	12.2	13.2	15.8	11.9	10.1	11.1	12.5	14.2	9.7	13.0	13.1	12.1
Used RRCRRC	7.1	5.2	6.5	5.8	6.9	6.5	5.0	5.4	5.7	4.6	7.1	5.7	6.2	6.0
Used TCP	4.4	2.8	0.5	1.7	2.7	4.0	10.8	4.1	6.0	6.6	31.7	4.6	6.6	6.2
Used HACC/VHC	17.6	24.9	15.8	16.9	23.8	22.8	13.4	20.4	22.3	24.0	11.9	16.9	19.5	18.4
No program use	31.1	33.1	21.9	31.2	23.1	31.0	20.4	36.7	29.0	32.8	15.7	25.3	28.2	26.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (cohort members)	2,880	1,286	7,888	1,808	1,670	3,166	3,351	1,456	1,760	3,944	2,767	5,331	3,295	40,870

(a) Approval is from the reference assessment. People may have been approved for other programs at a later assessment within 12 months.

(b) Program use in the 12 months after the end of the reference assessment, except for HACC and VHC, which do not require an ACAT assessment. For these, program use is from the start date of the reference assessment.

(c) 'Other' includes health conditions with fewer than 1,000 cohort members reporting this as their main health condition. In particular, it includes: infections; blood disorders; eye and ear conditions; digestive, skin, genitourinary and congenital conditions and not specified conditions. Table does not include 268 cases with missing main health condition.

(d) Includes all cohort members.

Appendix B Linkage and related data issues

The PIAC linkage project involved linking 27 data sets covering 8 aged care programs and deaths. The purpose of the linkage was to link clients across aged care program data sets to enable person-based analysis of patterns of use. Linkage to deaths data allows the identification both of client deaths and whether people accessed services before they died.

This appendix describes the linkage strategy used to derive the linked database, and the derivation of key analysis variables from the contributing data sets.

B1 Data sources

The data for PIAC comes from 3 source types: administrative program data, program-specific national minimum data sets and register data. The source data were as follows:

- Data on the use of RAC (permanent and respite), EACH, EACHD, CACP and TCP are from the Aged and Community Care Management Information System (ACCMIS). This database was maintained by the Australian Government for the purposes of paying subsidies to service providers for residential care and community care packages. The data in ACCMIS is divided into 2 sections:
 - data on the 4 programs of RAC, EACH, EACHD and TCP (hereafter denoted as RAC⁺), with an integrated client administrative identifier across all 4 programs.
 - data on the CACP program, with a separate set of client administrative identifiers.
- Data on the provision of services through the VHC program are maintained by the Department of Veterans' Affairs. Clients are each assigned an administrative identifier.
- Data on the provision of assessments carried out under ACAP are recorded in the ACAP MDS annual data collections (from 2003–04). The collection is maintained by the Australian Government. Clients are not assigned a unique administrative identifier, but a statistical linkage key (SLK) is recorded at each assessment to allow client-level statistical analysis of program use.
- Data on the provision of services provided through HACC are recorded in the HACC MDS annual data collections (from 2001–02). Up to 2009–10, the HACC MDS was collected by the state and territory governments, and then collated into a national data set by the Australian Government. For 2010–11, data for New South Wales were provided separately by the New South Wales data repository and collated with data for the other states by the AIHW. Clients are not assigned a unique administrative identifier, but an SLK is reported on each service record to allow client-level statistical analysis of program use.
- The national death index (NDI) is a database, housed at the AIHW, which contains records of all deaths occurring in Australia since 1980. The data are obtained from the Registrars of Births, Deaths and Marriages in each state and territory, the National Coronial Information System and the Australian Bureau of Statistics. The Index is designed to facilitate the conduct of epidemiological studies. Deaths may appear more

than once on the NDI, for example if revised data are provided, but each death has a unique identifier.

B2 Linkage strategy

Data linkage is a powerful tool for identifying multiple appearances of individuals within a data set and for integrating client information across data sets. Because the information recorded for an individual may vary from data set to data set – due to either differences in reporting (e.g. in first name) or errors – a robust linkage process should allow for some discrepancy in characteristics (illustrated in AIHW 2011a). There are 2 main types of data linkage:

- Key-based record linkage, in which the linkage of records is based on exact agreement of the linkage variables. Variation in reporting can be allowed for by using a number of different keys.
- Probabilistic record linkage, in which the linkage of records in 2 files is based on the probabilities of agreement and disagreement between a range of linkage variables. Probabilistic linkage allows for variation in reporting by allowing probabilities of agreement to be less than 1 and probabilities of disagreement to be greater than 0.

Key-based linkage is commonly used when linking either using a person identifier or when full name data are not available but other data items are available that, when combined, can be used to link records. Probabilistic linkage is generally used when full name information, along with other demographic data, is available. Because only some of the data sets included in the PIAC database contain full name information, both types of linkage were used when developing the linked database.

B2.1 Name-based linkage

Probabilistic name-based linkage was used when linking data sets that both contained full name information. It involved running a series of passes that allow for variation in full name information and demographic data. Each pass consisted of deterministic pairwise matching on selected blocking variables and then calculating a weight based on probabilities of agreement and disagreement for the blocking and match variables for each respective match pair. Sample-based clerical review was then conducted across all passes combined to identify initial high and low weight cut-offs for matches where there was variation in reported match data. The final weight cut-off on which to base match decisions was finalised by further comparisons using reported postcode data and date of death (when available), again using sample-based clerical review. Finally, the links were examined for cross (that is, inconsistent) links and processed accordingly. A step-by-step description of the match passes and clerical review processes used is given below.

Step 1: Create possible match pairs: run a match pass

In the name-based matching, up to 13 passes were used to identify matches (Table B1). A match pass links 2 data sets using particular blocking variables and match variables. A blocking variable is one that must match on both data sets before a pair of records can be considered for matching. The match (that is, not blocking) variables of a pass are then used to create match pairs within the block, and these pairs are examined to determine their match status (matched, or not matched). All possible match pair combinations are derived within the block and then compared. For example, Pass 2 in Table B1 produces a set of match

pairs that match exactly on the blocking variables surname, date of birth and sex, but vary in the single match variable (first name of client). In the current application, each pass was run independently.

Table B1: Overview of passes used in the name-based linkage process

Pass	Blocking variables	Match variables
1	First name, surname, DOB and sex	Nil
2	Surname, DOB and sex	First name
3	First name, DOB and sex	Surname
4	Day, month and year of birth	First name, surname and sex
5	Day and year of birth	First name, surname, month of birth and sex
6	Month and year of birth	First name, surname, day of birth and sex
7	Day and month of birth	First name, surname, year of birth and sex
8	A-code ^(a) and year	First name, surname and sex
9	S-code ^(b) and year	First name, surname and sex
10	Year of birth	First name, surname, day and month of birth and sex
11	Day of birth	First name, surname, month and year of birth and sex
12	Month of birth	First name, surname, day and year of birth and sex
13	Nil	First name, surname, DOB and sex

(a) A-code represents dates of birth that are expressed in the American form; for example, '01/30' as opposed to '30/01' for 30 January.

(b) S-code represents a type of coding error in the DOB: the second digit of the day has been swapped with the second digit of the month (for example, 28/04 on 1 record and 24/08 on another for the same person).

Step 2: Output pairs of matches with weights: calculation of match weights

The reported values of match variables for the match pairs resulting from a pass are then compared to obtain evidence on whether 2 records belong to the same person. This evidence is summarised in the form of a cumulative weight derived for each possible match pair, with agreement for a variable increasing the weight and disagreement decreasing it. In the name-based linkage strategy for PIAC, each link was assigned a cumulative weight based on the names, sex and date of birth reported in the 2 records being compared. For example, in Pass 2 above, the single match variable (first name) is used to adjust the match weight.

The weights for the linkage variables were derived as follows.

- The main contribution to the weight was based on the names. Two factors affect this weight contribution. The first factor was based upon the frequency of the name, with the weight increasing with rarity. The second factor was based upon name similarity. Using an algorithm to determine how 'close' 2 names were, names that were very similar were given almost the same weight that would have been earned had they been the same. As the difference grows, the weight diminishes until it becomes negative and is then known as a disagreement weight. The weights for names from 2 records that match on both first name and last name ranged from around 10 for common names, up to 65 for rare names. The largest disagreement weight for both names combined was -7.
- Because sex only has 2 categories of similar frequency, the weight for agreement or disagreement of sex was small: +1 and -1, respectively.

- The weight for matching on the full date of birth was 14 (agreement weights of 5 for day, 4 for month and 5 for year). The disagreement weights for day and month of birth were -2.7 and -3.2, respectively. In passes where year of birth was used as a match variable (that is, is allowed to be different in the match pair), a weight penalty of -1 applied for each additional year that the pair's year of birth disagreed.
- Additional information was also used, depending upon the data being linked together. For example, when linking the residential care data to the deaths data, the former contains a date of last contact together with a reason for discharge (often death) and the deaths data includes a date of death. If the reason for discharge from residential was death and the date of last contact was equal to the date of death then 10 was added to the final weight. If only the dates matched and the reason for discharge from residential care was not death then the additional weight was 5.

The distribution-based weights were derived using the larger of the 2 data sets being matched; that is, the larger data set was used as the reference. This was done in order to get the most reliable weights for each linkage. The additional weight adjustments were developed through an iterative process and experience with similar data sets.

For all passes, the overall weight for a match pair was the sum of the weights from the above factors. As a consequence, the weights from each pass were comparable. This cumulative weight for each match pair was then used in steps 3 and 4 when deciding whether a pair of records were a match (high weight) or not (low weight).

The inclusion of a weight factor based on matching postcodes in the above cumulative weight was tested. However, results suggested that its use at this point introduced too many false matches. Therefore, postcode information was used later in the matching process (see Step 4).

Step 3: Determine initial weight cut-offs: sample-based clerical review

Clerical review is the name given to the process that involves manually examining proposed match pairs and deciding whether to accept or reject the match. Commonly, in name-based matching 2 weight cut-offs are set, with weights above a first (higher) cut-off limit assumed to indicate a match and weights below a second (lower) cut-off assumed to indicate a non-match. Clerical review is then used to decide the match status of possible match pairs with weights between the 2 cut-offs; that is, for record pairs in the 'grey zone' defined by the 2 weight cut-offs. However, in large-scale linkages, hundreds of thousands of record pairs may fall into the grey zone.

Acceptance sampling is a well-established statistical method that can be applied to clerical review. It replaces 100% inspection with inspection of samples selected from batches (Guiver 2011). Given the resources available, a sample-based clerical review approach employing acceptance sampling methods was adopted, both to identify initial weight cut-offs, and then, within the grey zone, to identify a single weight cut-off to separate matches and non-matches.

The process used to identify initial weight cut-offs for the grey zone was as follows:

- Match pairs from all passes were combined. In each pass, a record from the first data set may be paired with multiple records from the second data set. The combined data set was therefore merged so that only the best match pair (based on weights) for a particular record in the reference data set was retained. That is, for each record on the larger data set, the match pair with the highest weight was kept for further examination.

- Match pairs in the combined data set were ordered by linkage weight and divided into batches. For this study, batches were defined using weight ranges of 2. That is, match pairs with cumulative weights between 0 and 2 would be 1 batch, match pairs with weights between 2 and 4 would be the next batch, and so on.
- A sample of 65 matches was selected from each batch for determining the quality of matches within that batch.
- Within a batch sample, clerical review was then used to determine whether each record pair in the batch sample was a true link or not a link.
- Based on the findings in the batch samples, the quality of matches was estimated for each batch, assuming that the batch's lower weight cut-off was the final cut-off for identifying matches. Two measures of quality were estimated: the positive predictive value (PPV), which is the proportion of match pairs that are true matches, and sensitivity which estimates the proportion of true matches identified. These 2 measures were combined, using a geometric average, into an F-score to allow simple comparisons across all batches.
- The resulting F-scores for each batch were then used to determine initial weight cut-offs; that is, the grey zone. The grey zone included the batch with the highest F-score and the batch either side.

Step 4: Finalise weight cut-offs and match decisions

To resolve the match status of the grey zone match pairs, reported postcodes for the match pairs from the 2 data sets being matched were compared, and an adjusted cumulative weight was derived. If the postcode for the match pair was the same on both data sets, a further 10 points was added to the cumulative weight.

After the addition of the postcode weight, sample-based clerical review was again used to derive a single weight cut-off to decide whether a match was a match or non-match. For this phase, a weight range of 0.5 was used to define batches, and the lower weight of the batch with the highest F-score was used as the final weight cut-off to divide match pairs into matches and non-matches.

Using the above approach, the name-based linkages undertaken when deriving the PIAC database were estimated to have F-scores of at least 99%.

Step 5: Resolve cross-links

When the above process is applied to several data sets in succession, 'cross-links' can arise. A cross-link occurs when a record from data set A matches to multiple records on data set B, and all matches have been accepted. This may occur if matches are missed in an earlier linkage phase. Therefore, before linking further data sets to a combined data set resulting from linkage, cross-links were resolved using clerical review. In this process, some links were broken and new links were made. In general, the numbers of cross-links that needed to be resolved were small.

B2.2 Key-based linkage

The ACAP and HACC data sets included in the PIAC project do not have full name information, but do contain the statistical linkage key SLK-581. Linkage of these data sets to the PIAC database was therefore undertaken using key-based linkage (KBL). The KBL process for PIAC involves matching via multiple deterministic match passes, using linkage keys derived from data items available for linkage. Each pass uses a linkage key based on a different combination of the linkage variables. An algorithm is used to identify suitable linkage keys and the order in which they should be used. Using multiple passes with different linkage keys allows matches to be identified for units that have linkage variables reported differently in the 2 data sets. This method maximises the value of the SLK-581 for linkage and has been used in a number of projects (e.g. Karmel et al. 2010).

Step 1: Choose match key components

For the PIAC database, KBL centred around the components of the SLK-581 – an SLK that is available or derivable for all data sets contributing to the PIAC database. Additional data items were included in the linkage process, where available and if they were of suitable quality with a reasonable spread of values. Each linkage data item can contribute 1 or more components to the keys used in the KBL process.

The 4 main constituents of SLK-581, and the related KBL key components, are:

- second, third and fifth letters of surname (giving 4 components: S23, S25, S35, S235)
- second and third letters of given name (giving 1 component: F23)
- day, month and year of birth (giving 3 components: d, m, y)
- sex (providing 1 component: s)

Person postcode was also generally available for linkage. Four components associated with different size regions were derived from postcode and included in the KBL:

- pc4, pc3 pc2, pc1, where pc4 is all 4 digits of postcode, pc3 is the first 3 digits of postcode, and so on.

Common event data were also available for some linkages. In particular, ACAT assessment dates and ACAT identifiers were available in both the ACAP data sets and the residential care data. Such data items were used as a single key component.

Step 2: Select keys to use in matching

There are many combinations of the available key components that could be used to define match keys. To ensure that any employed match keys were based on combinations of components that both discriminated well between individuals and would not introduce too many false positives, 3 measures – calculated for each match key – were used to identify suitable linkage keys and their order of use:

- the *estimated false match rate* (FMR) for links established using the match key (the lower the better);
- the *estimated marginal trade-off* (m_tf) between additional true and additional false matches for links established using the match key when compared with matches made by a slightly more precise key (the higher the better);

- a measure of *discriminating power* (expressed as a percentage). This is the product of the unique key rates for the 2 data sets being linked, where the unique key rate is the proportion of records within a data set that have a unique value for the key in question (the higher the better).

The first 2 of these were used to identify keys to be used in the linkage process by setting cut-offs, while the third determined their order of use (highest to lowest). In the current application, the KBL processes used an FMR limit of 0.5% and an m_tf lower limit of 5 to select suitable keys. To assess the quality of the linkage, a number of comparisons were undertaken using name-based and key-based linkage to link data sets with full name information. In the comparisons, the KBL processes used only SLK-581 and postcode. Using the name-based linkage as the reference, the PPV ranged between 95.6% to 98.5% for KBL, and sensitivity was between 90% and 91%, giving F-scores of 93–94%. Processes using additional data – for example, when matching RAC⁺ to ACAP the date of assessment was also used – are expected to have both higher PPV and sensitivity.

The derivation of these measures and a more detailed description of KBL are given in Karmel et al. (2010) and AIHW (2011c). Note that the number of keys selected for a linkage process depends on a range of factors, including the size of the groups being matched, the match rate and the number of variables available for inclusion in the linkage keys.

Step 3: Stepwise matching using selected match keys

Using the selected match keys, stepwise linkage was then carried out, with order of use determined by the discriminating power of the keys (going from high to low).

The PIAC KBL process also allowed for variation in reported client values of match key elements within a data set; for example, a person may change their usual residence and so could have several postcodes. For individual keys, the number of versions of key components allowed for an individual when using a particular key was limited by max_FMR/FMR, where max_FMR is a parameter indicating maximum allowable estimated false match rate for the pass. For example, if max_FMR is set to 0.5% then up to 5 different versions (altogether) of the information for the event being matched would be considered when matching records using a key with FMR = 0.1% ($0.5/0.1=5$). Versions of key elements were given a priority ranking to determine their order of use.

All links identified by the selected match keys were accepted as valid, with the exception of duplicate matches with the same priority ranking. In this case, a duplicate was selected at random.

B3 Client identification and data for linkage

Before undertaking data linkage, data sets with appropriate client identifiers and appropriate linkage variables had to be derived.

B3.1 Client identification

Two processes were used to identify distinct clients within the data sets contributing to PIAC. The method used depended on whether the data set contained an administrative program client identifier.

Data sets with administrative person identifiers

All the data sets included in PIAC that have full name data (RAC+, CACP, VHC, NDI) also have a unique administrative person identifier (A_PID). However, even in these data sets, it is possible for a person to have more than 1 identifier due to an administrative or processing error. Consequently, before linking, data sets with full name data were deduplicated using the name-based linkage process by matching a data set to itself. A small number of people with more than one A_PID were identified in each data set. In these cases, the person was assigned a single new A_PID to replace the original A_PIDs.

Data sets without administrative person identifiers

There is no unique program client identifier in either the ACAP or HACC MDSs, and full name is not recorded. Rather, both collections contain data items through which repeat assessments by individuals can be identified with high probability: namely, SLK-581. Previous analysis has shown that SLK-581 distinguishes well between individuals in aged care data sets (AIHW: Karmel 2005a, 2005b; AIHW: Karmel & Braun 2004).

Although not common, different people can have the same SLK-581 (0.6% in a study population of 440,000) (AIHW: Ryan et al. 1999:78). Therefore, as in the original PIAC study, to reduce the likelihood of combining data for different people – especially in the large HACC data sets – a client in the annual ACAP and HACC data sets was defined by SLK-581 combined with the first digit of the client's postcode of usual residence. A collection client identifier (C_CID) was assigned accordingly. That is, essentially a client was defined by SLK-581 within a state or territory, except that New South Wales and the Australian Capital Territory were combined. Note that, under this definition, a person who moved during the year will be identified as 2 clients if, on moving, their postcode of usual residence changed in the first digit; that is, they would have 2 C_CIDs. If a client's postcode was missing, the client's state of usual residence was assumed to be the same as that of the service provider.

Records with more than 1 missing component of SLK-581 or any missing date of birth data were considered to have insufficient information for client identification, and so were excluded from the linkage process, and consequently any analysis. For records with only 1 missing component, records were considered to have sufficient information for client identification if the record contained reported postcode and complete SLK-581 data except for 1 of sex, letters of first name or letters of last name. Internal deterministic linkage was then used to see if these records should be combined with other records with complete data for SLK-581. Note that, if only sex were missing, this internal matching process was carried out even if postcode were also missing.

In addition, since its inception, 1 January birthdays have been reported much more often than expected in the HACC MDS (AIHW 2011c: Table C.7). Most of these dates of birth are unlikely to have been the client's actual date of birth, and records with such dates of birth could relate to a number of different people. Consequently, all 1 January birthdays were considered to be dummy values, and so not suitable for client identification. However, to reduce the under-identification of use of HACC services in the linked PIAC database, HACC records with a 1 January birthday were included in the data linkage, and any matches to a data set with full name information were retained (see Section B4 below). There were 2 exceptions to this approach: previous analysis has shown that, for both HACC and ACAP, 1 January 1900 and 1901 birthdays were used by some agencies as default values for unknown birthdays. Therefore C_CIDs including these birthdays were excluded from the linkage process for both programs.

Finally, under HACC MDS V1 (which mainly operated between 2001–02 to 2004–05) carer services, including counselling and respite care, were nominally reported in service records for the carer; that is, using the carer’s SLK-581. However, analysis of service provision using the HACC data indicates that this approach was not well-implemented, with carer services often being recorded in conjunction with care recipient services. To avoid this problem, in HACC MDS V2 (from 2005–06) services were reported against care recipient and carer pairs, recording SLK-581 for both the care recipient and carer. However, over the period examined, the quality of the carer SLK-581s reported on the HACC MDS V2 data sets was not high, with around 30% of records containing carer SLK-581s that were insufficient for client identification. Because of this, HACC clients who only received carer services are not included in the linked PIAC database, and the database cannot be used to examine either the receipt of respite care through HACC or issues related to being both a carer and care recipient.

B3.2 Data for linkage

Name-based linkage

The data used in the name-based linkage included:

- first name
- last name
- middle name
- other name
- date of birth
- sex
- (possible/likely) date of death
- last seen date
- postcode of usual residence
- suburb of usual residence (used to obtain possible postcodes if postcode had not been reported).

Not all variables were available on all data sets. In particular, a likely date of death was often available in the RAC+ and VHC data sets, but not in the CACP data.

A person’s postcode used in linkage could change depended on the data sets being matched:

- When linking RAC+ to the NDI, the preferred postcode was that of the last known residence. For people in permanent RAC, this was the postcode of their RAC facility; for others, it was that of their home address in the community.
- When linking to community care programs, the preferred postcode was that of the last known residence in the community. For people in permanent RAC, this was the postcode of their usual residence before moving into RAC.

Because people can change where they live, both in the community and in residential care, a person can have several postcodes recorded in a data set. For example, the RAC+ data can contain several postcodes relating to the same client over a year: the postcode of usual residence before going into RAC and the postcodes of any RAC facility the person used. This postcode variation was used when identifying matches among the ‘possible links’. For example, when linking RAC+ to NDI, up to 3 postcodes were used: the client’s postcode in

the community before entering RAC; the postcode of the last RAC facility used; and the postcode of where the client died according to the NDI.

Key-based linkage

Key-based linkage was used to link the ACAP and HACC annual data sets to the PIAC database. The data used in the KBL processes included:

- Letters of last name S23
- Letters of last name S25
- Letters of last name S35
- Letters of last name S235
- Letters of first name F23
- day of birth (d)
- month of birth (m)
- year of birth (y)
- sex (s)
- full person postcode (pc4)
- first 3 digits of person postcode (pc3)
- first 2 digits of person postcode (pc2)
- first digit of person postcode (pc1)
- suburb (used to derive pc1–pc4 if postcode was not reported)
- date of last completed ACAT assessment in a financial year (when matching ACAP MDS)
- Identifier (ID) of the ACAT undertaking the last complete assessment in a financial year (when matching ACAP MDS).

Individual keys drop or substitute 1 or more of the above components. Match keys were then the concatenation of selected components. For example, the key including all elements of SLK-581 and postcode would be S235|F23|d|m|y|s|pc4, while 1 that included only the second and fifth letters of surname and neither first name nor sex would be S25|_|d|m|y|_|pc4. The components ACAT ID and ACAT date, were only used when matching to the ACAP MDS.

Again, not all variables were available for all linkages. In particular, ACAT assessment data were available only for RAC+ and ACAP data. In addition, to avoid false matches due to the large number of assessments undertaken during a year, ACAT assessment date was not used without also including ACAT ID in the linkage key.

Because ACAP provides approvals for entry into RAC or for the use of care packages, and HACC is a service for people living in the community, the preferred postcode of usual residence used in KBL linkage was that relating to living in the community. For people in permanent RAC, this was the postcode of their usual residence before moving into RAC.

Again, because people can move during the year, a person can have several postcodes recorded on the HACC or ACAP MDS. In such cases, all postcodes were included in the KBL process, with the priority of the postcode used in the KBL algorithm based on recency of use. In addition, for clients of permanent RAC, the postcode of their RAC facility was used as a (lower priority) alternative.

B4 Quality of the data available for linkage

The presence of missing linkage data reduces the likelihood of identifying true matches. The number of missed matches will also be relatively high if there are unreliable data on either of the data sets. However, if both data sets being matched have similar processes for recording poor information (e.g. recording dates of birth as 1 January of the year derived from current age) then the likelihood of making false matches decreases.

In general, the data sets that included full name data (RAC+, CACP, VHC, NDI) were less likely to have missing name or date of birth information than those that contained the data for SLK-581 but not full name (ACAP and HACC MDSs) (tables B2–B6). Under 0.2% of clients on data sets with full name data were missing either name or date of birth (DOB) information (Table B2). From 2006–07, the ACAP MDS had similarly low numbers of records with insufficient data for linkage. In the earlier years, poor SLK data were more common, with records from Queensland having a high rate of missing name data in 2005–06, the first year it reported unit record data to the ACAP MDS (Table B3). After using reported suburb to derive postcode for cases where it was missing, postcode data used in data linkage was missing for less than 1% of clients in all data sets (tables B2, B5).

Overall, SLK data were less likely to be missing or unreliable on the ACAP MDS than on the HACC MDS (tables B3, B4). Records with missing elements of SLK-581 were less common on the ACAP MDS than on the HACC MDS from 2006–07 onwards, although in all years fewer than 1% of HACC quarterly records had insufficient data for linkage. However, assuming that people are equally likely to be born on any day of the year – so that we expect 0.27% birthdays on any single day of the year – 1 January birthdays were 8 to 15 times more common than expected on the HACC MDS. This compares with 2 to 3 times more common than expected on the ACAP MDS. As mentioned in Section B3.1, the high prevalence of 1 January birthdays on the HACC MDS resulted in the special treatment of these C_CIDs. Such C_CIDs were included when matching HACC data sets to records with full name information, but were not included in the PIAC database otherwise.

It is interesting to note that the proportion of HACC quarterly records with 1 January birthdays is less than the proportion of HACC C_CIDs with a 1 January birthday. This occurs because C_CIDs with 1 January birthdays averaged fewer records than other SLKs – 2.2 quarterly records per C_CID compared with 3.2 for C_CIDs with other birthdays (Table B6, averaging across the 9 years). Inconsistent reporting of SLK-581 by agencies can cause this effect. In this case, some people may have 2 (or more) C_CIDs: 1 derived using accurate DOB data and 1 (or more) with a 1 January birthday. From an analytical perspective, dropping unlinked HACC C_CIDs with 1 January birthdays for people who also have another C_CID will lead to errors in estimated periods of HACC use rather than in underestimation of the number of HACC clients. However, underestimation of the number of HACC clients will result when people are only reported with a 1 January birthday and they do not link to named data sets.

Table B2: Quality of data for linkage, data sets with full name, 1 July 2002–30 June 2011

	RAC⁺	CACP	VHC	NDI
Percentage of clients				
Full name, DOB and sex all available	99.96	99.93	100.00	99.79
Missing first name only	—	—	—	0.00
Missing family name only	0.04	0.07	—	0.08
Missing both first and family names	—	—	—	0.00
Missing DOB	—	—	—	0.11
Missing sex	—	—	—	0.03
No postcode data	0.31	0.37	0.80	0.86
Total	100.00	100.00	100.00	100.00
Number of clients				
Full name, DOB and sex all available	704,605	170,252	218,841	1,222,457
Missing first name only	—	—	—	21
Missing family name only	280	125	—	991
Missing both first and family names	—	—	—	1
Missing DOB	5	—	—	1,368
Missing sex	—	—	—	345
No postcode data	2,161	631	1,755	10,535
Total	704,890	170,377	218,841	1,225,057

Table B3: Quality of SLK-581 for linkage, ACAP MDS 2003–04 to 2010–11, assessment records

	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Percentage of assessment records								
<i>Linkable records</i> ^(a)	99.4	98.2	85.2	99.9	100.0	100.0	100.0	100.0
Not 1 January birthday	98.6	97.5	84.6	99.3	99.3	99.4	99.4	99.4
With 1 January birthday	0.8	0.7	0.6	0.7	0.6	0.6	0.6	0.5
With missing SLK-581 data ^(b)	—	—	—	0.1	—	—	—	—
Unlinkable Queensland records with dummy letters of name ^(c)	—	—	14.1	—	—	—	—	—
Other unlinkable records ^(c)	0.6	1.8	0.7	0.1	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of assessment records								
<i>Linkable records</i> ^(a)	139,388	169,702	175,415	217,158	238,316	235,989	215,636	210,767
Not 1 January birthday	138,293	168,463	174,203	215,725	236,797	234,555	214,394	209,609
With 1 January birthday	1,095	1,239	1,212	1,433	1,519	1,434	1,242	1,158
With missing SLK-581 data ^(b)	51	70	77	238	109	52	45	44
Unlinkable Queensland records with dummy letters of name ^(c)	—	—	29,002	—	—	—	—	—
Other unlinkable records ^(c)	891	3,107	1,396	122	71	43	15	28
Total	140,279	172,809	205,813	217,280	238,387	236,032	215,651	210,795

(a) Records may be in more than 1 category, and so components may sum to more than the total.

(b) Records missing 1 of given name, family name, or sex data; see footnote b) below. These are a subset of 'Linkable records'.

(c) Unlinkable records included those with:

- missing date of birth, or a 1 January 1900 or 1901 date of birth
- missing more than 1 of the SLK-581 components: letters of first name; letters of family name; or sex
- missing only 1 of the SLK-581 components letters of first name or letters of family name, but also missing postcode.

Table B4: Quality of SLK-581 for linkage, HACC MDS 2002–03 to 2010–11, quarterly records for recipients

	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Percentage of quarterly records									
<i>Linkable records</i> ^(a)	100.0	100.0	100.0	100.0	99.1	99.2	99.4	99.6	99.6
Not 1 January birthday	97.2	97.3	97.4	97.8	96.8	96.9	97.2	96.0	95.7
With 1 January birthday ^(b)	2.8	2.6	2.6	2.2	2.3	2.3	2.2	3.6	4.0
With missing SLK-581 data ^(c)	0.4	0.5	0.5	2.0	2.0	1.1	0.9	0.7	0.7
Unlinkable ^(d)	—	—	—	—	0.9	0.8	0.6	0.4	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of quarterly records									
<i>Linkable records</i> ^(a)	1,903,558	2,158,173	2,313,382	2,262,411	2,421,979	2,636,005	2,791,117	2,921,181	3,135,088
Not 1 January birthday	1,850,305	2,101,226	2,253,158	2,213,702	2,365,610	2,575,641	2,728,609	2,814,842	3,010,485
With 1 January birthday ^(b)	53,253	56,947	60,224	48,709	56,369	60,364	62,508	106,339	124,603
With missing SLK-581 data ^(c)	8,270	10,876	11,319	45,358	49,512	29,072	25,581	21,583	22,378
Unlinkable ^(d)	189	338	1,048	1,062	20,827	21,104	16,354	12,113	11,563
Total	1,903,747	2,158,511	2,314,430	2,263,473	2,442,806	2,657,109	2,807,471	2,933,294	3,146,651

(a) Records may be in more than 1 category, and so components may sum to more than the total.

(b) C_CIDs containing a 1 January birthday were included in the linkage to people with full name data. If they did not link to a person with full name data, then they were excluded from linkage to other HACC and ACAP data sets because there was no evidence to suggest that the 1 January birthday was valid.

(c) Records missing 1 of given name, family name, or sex data; see footnote d below. These are a subset of 'Linkable: not 1 January birthday and 'Linkable: with 1 January birthday.

(d) In general, unlinkable records included those with:

- missing date of birth, or a 1 January 1900 or 1901 date of birth
- missing more than 1 of the SLK-581 components: letters of first name; letters of family name; or sex
- missing only 1 of the SLK-581 components letters of first name or letters of family name, but also missing postcode.

Table B5: Availability of postcode data for linkage, ACAP and HACC C_CIDs, 2002-03 to 2010-11

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
HACC MDS									
	Percentage of C_CIDs								
With postcode	99.58	99.66	99.65	99.70	99.72	99.69	99.77	99.86	99.88
Without postcode	0.42	0.34	0.35	0.30	0.28	0.31	0.23	0.14	0.12
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
ACAP MDS									
With postcode	..	99.12	99.05	99.57	99.76	99.84	99.88	99.91	99.90
Without postcode	..	0.88	0.95	0.43	0.24	0.16	0.12	0.09	0.10
Total	..	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
HACC MDS									
	Number of C_CIDs								
With postcode	625,101	685,140	722,573	710,299	754,322	790,580	823,631	841,087	875,097
Without postcode	2,615	2,351	2,517	2,165	2,093	2,463	1,874	1,219	1,062
Total	627,716	687,491	725,090	712,464	756,415	793,043	825,505	842,306	876,159
ACAP MDS									
With postcode	..	115,874	138,176	164,608	180,146	192,530	193,277	174,726	171,585
Without postcode	..	1,031	1,332	712	426	318	240	156	170
Total	..	116,905	139,508	165,320	180,572	192,848	193,517	174,882	171,755

Note: Table excludes unlinkable C_CIDs and HACC C_CIDs with a 1 January birthday that did not match to a record on the PIAC database that had full name data.

Table B6: Matching of HACC C_CIDs with a 1 January birthday, 2002-03 to 2010-11

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
With 1 January birthday									
	Number of C_CIDs								
Matched to master list	1,102	1,208	1,238	1,153	1,258	1,149	1,040	886	1,407
Dropped	23,470	25,709	26,472	20,836	26,185	26,570	27,567	45,454	51,787
Total	24,572	26,917	27,710	21,989	27,443	27,719	28,607	46,340	53,194
	Percentage of C_CIDs with 1 January birthday								
Matched to master list	4.5	4.5	4.5	5.2	4.6	4.1	3.6	1.9	2.6
Dropped	95.5	95.5	95.5	94.8	95.4	95.9	96.4	98.1	97.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
C_CIDs with 1 January birthday (as percentage of all C_CIDs)	3.8	4.1	4.3	3.4	4.2	4.3	4.4	7.1	8.2
All C_CIDs	651,186	713,200	751,562	733,300	782,600	819,613	853,072	887,760	927,946
	Quarterly records per C_CID								
Not 1 January birthday	2.95	3.06	3.11	3.11	3.13	3.25	3.31	3.35	3.44
With 1 January birthday	2.17	2.12	2.17	2.22	2.05	2.18	2.19	2.29	2.34
All C_CIDs	2.92	3.03	3.08	3.09	3.09	3.22	3.27	3.29	3.38

B5 Linkage stages

The linkage used to derive the PIAC database was undertaken in a number of stages based on data set availability and the type of linkage to be used (see Table B7). Name-based linkage was generally undertaken first because this linkage process tends to be more accurate than KBL (see AIHW 2011a and AIHW 2013b for comparisons). In addition, because the time period to be covered by the database was extended a number of times, the name-based linkage of some of the data sets was done in more than 1 linkage process. Also, the linkage of the VHC data for the later years was undertaken last because of data availability. A total of 27 data sets were linked to form the PIAC database.

The first stage of linkage involved linking the RAC⁺ to the NDI. As seen above, both of these data sets hold full name data, and so they were linked using the name-based linkage process (see Section B2.1). Once these 2 data sets were linked, we generated a data set containing project-specific person identifiers (P_PIDs) and linkage data. Each linkage process thereafter involved matching a single data set to the P_PID list, with any unmatched records extending the P_PID list.

After linking the data sets with full name data, those with SLK-581 but not full name (annual ACAP and HACC MDSs) were then linked to the P_PID list using the KBL linkage process (see Section B2.2). The ACAP data sets were linked first because of the availability additional data for inclusion in the KBL process (assessment date and ACAT ID) and also because the quality of linkage data was higher (see AIHW 2011c: Table C.7).

Both the name-based linkage and KBL processes allowed 2 records to be matched even if there were some variation in the values of linkage data items. Consequently, after a number of linkage processes, different versions of linkage variables may have been available for a P_PID on the P_PID list. When carrying out a linkage, all versions of linkage data available at that stage were used. However, only 'as reported' combinations were used in the linkage processes, rather than all possible combinations. This is particularly important for KBL, because allowing all combinations of key components could lead to an unacceptable level of false matches. For example, for KBL, if a person is reported as John Smith born 1 February 1934 in the first data set with full name data and as John Smyth born 2 January 1934 in a second, then the corresponding SLK-581 key components used in a KBL would be {MIH, OH, 01021934, 1} for the first version and [MYH, OH, 02011934, 1} for the second. The priority of variations for key components across data sets was based on their source, from highest to lowest priority: RAC⁺; CACP; VHC; NDI; ACAP; and finally HACC.

Table B7: Linkage stages in the PIAC project

Stage	Data set 1	Data set 2
1	RAC ⁺ 2002–06 ^(a) (name-based)	NDI 2002–06
2	NDI 2006–11 (name-based)	P_PID list ^(b)
3	RAC ⁺ 2006–08 (name-based)	P_PID list
4	CACP 2002–08 (name-based)	P_PID list
5	VHC 2002–08 (name-based)	P_PID list
6	RAC ⁺ 2008–11 (name-based)	P_PID list
7	CACP 2008–11 (name-based)	P_PID list
8	ACAP 2003–04 to ACAP 2010–11 (KBL-based) (8 annual data sets)	P_PID list
9	NDI update for late-reported deaths (name-based)	P_PID list
10	HACC 2002–03 to HACC 2010–11 (KBL-based) (9 annual data sets)	P_PID list
11	VHC 2008–11 (name-based and KBL-based)	P_PID list
12	NDI update for 2013 database revision (name-based)	P_PID list

(a) RAC⁺ includes data on RAC (permanent and respite), EACH, EACHD and TCP because these are integrated in the source database.

(b) 'P_PID list' is the list of project specific person identifiers (P_PIDs) built up through successive linkage processes.

B6 Deriving data items for analysis

After completion of the linkage, person-based analysis data sets can be derived by using match identifiers to bring together the data relating to a P_PID. Because the source data sets have a range of purposes and data about a client may have been provided by different people over an extended period, there can be inconsistencies in the analysis data. The approaches taken to resolve these for 2 types of variables are described below: stable demographic variables, which should not change over time, and service use dates.

B6.1 Stable demographic variables

There are a number of client demographic characteristics that should not change over time: for example, date of birth, sex, country of birth. However, sometimes different data sets may contain different values. In addition, there may also be variation within data sets where demographic values are reported by a number of different service providers or on separate occasions. Both the ACAP and HACC MDSs fall into this category.

Preferred values within a program

All the data sets that included full name data held only 1 version of the stable demographic variables. However, in both the ACAP and HACC MDSs, demographics are reported on each record of service provision, resulting in some discrepancies across records for some P_PIDs. Such discrepancies were resolved using the following strategy based on most commonly reported values.

For ACAP and HACC, data for all years for the program were pooled. The preferred values for demographic variables were then obtained using the following steps:

- Identify the reporting instances of the demographic variable for a P_PID.
 - For ACAP, all assessment records were included in this process, excluding records dropped for being duplicates and records with inconsistent dates.
 - For HACC, because data on services used by a client are reported quarterly by agencies, it was assumed that the agency was the reporting unit; that is, the agency had a similar role as assessment in ACAP for deriving preferred values for demographic variables. This was done on the premise that agencies collect data independently and would tend to collect the demographic data when a person first asked for assistance (rather than in every quarter). Therefore, distinct versions of demographic variables for a P_PID within agencies were retained, rather than using every quarterly record reported for a client.
- Drop any missing values for the demographic variable in question.
- Derive the preferred value using the following algorithm:
 - If there is a value with a clear majority across reporting instances, then this is the preferred value.
 - If there is no clear majority, then:
 - Use the most common value (this may not account for a majority if the variable is non-binary; for example, country of birth)
 - If 2 or more values are equally common, then use the most recently reported value.

Note that, for country of birth, a grouped classification was used so that minor changes would not affect the result. To ensure consistency of country of birth and English proficiency, a client's EP group (which is derived from country of birth, see Box 3.1) – was based on the preferred ungrouped value for country of birth.

Preferred values across programs

A similar approach was taken to obtain values for demographic variables across programs. However, here the contributing versions were those preferred in the individual program data sets; that is, at most 6 values were considered: 1 for each of RAC+, CACP, VHC, ACAP, HACC and NDI. Where there was no clear majority, or most common value, then the preferred value was selected based on the source of the version using the priority order below, from highest to lowest:

- RAC+
- CACP
- ACAP
- VHC
- NDI
- HACC.

Note that some demographic variables were not available from all data sources. Also, for a small proportion of NDI records estimated age at death was available, but not date of death. In these cases (1,214 out of 1,364 with missing date of birth), for analytical purposes (that is,

not for linkage) year of birth was derived by subtracting age at death from year of death. Month of death was then randomly assigned, with day of birth being assigned as 15, noting that day of birth affects age at a point in time only marginally.

B6.2 Program use dates

Event dates are reported for different purposes in different ways and by different people on the various data sets. For example, in the program data sets with full name data, dates are reported as part of payment systems. On the other hand, the dates on the ACAP and HACC MDSs are used to report on general service provision and program use. Furthermore, in some cases—especially when services are provided in the community—exact start and end dates of service use may not be known by those reporting the dates. Consequently, program use dates that imply use of 2 incompatible programs at once may be reported, and reported dates may not be consistent with a person’s date of death.

For the above reasons, a range of edits were applied to reported service use dates. The edit rules can result in truncation, splitting or deletion of service use events. The results are summarised in Table B8. After applying the edits, within each program (except HACC), the number of events was within 0.25% of the original number. For HACC, the number of events reduced by 2.2%. The larger effect on HACC events is to be expected because of the combined effects of a less accurate process for reporting service use dates and because many HACC services should not be used at the same time as permanent RAC or packaged care.

Table B8: Total number of events by service type before and after cleaning event dates (number)

	PRAC	RRC	EACH	EACHD	TCP	CACP	VHC	HACC ^(a)	ACAP
Before cleaning	631,621	466,314	21,258	9,620	63,369	184,604	240,482	6,120,508	1,580,653
After cleaning	631,050	465,666	21,205	9,608	63,306	184,665	240,048	5,986,293	1,578,993
Ratio of after to before cleaning (per 100 original events)	99.91	99.86	99.75	99.88	99.90	100.03 ^(b)	99.82	97.81	99.89

(a) Events still separated into 3 HACC service groups—see section on derivation of HACC event dates.

(b) Increase due to splitting CACP episodes due to short-term admission into permanent RAC.

The final event dates for all programs were used in analyses of program use over time, and use of programs at a point in time. When estimating the number of clients a program has during a period, a person was assumed to be receiving services on the date they started with a program but not on the day they left a program. This was to avoid double counting of clients. Details of the processes and rules applied to derive the final set of event dates are described below for each program included in the PIAC database.

RAC, EACH, EACHD, TCP and CACP

Program use of the RAC+ and CACP programs are reported on ACCMIS as admission and discharge dates, and these dates are recorded for every episode of care under each of the programs. Note, however, that people may go on leave from permanent RAC without being discharged; for example, to undergo treatment in a hospital (hospital leave) or to stay with family and friends for a short period (social leave).

Some overlap of service use dates is allowed for some of the ACCMIS programs. In general, people should not be recorded as using both permanent RAC and another program, except for TCP, and people should not be receiving more than 1 of CACP, EACH and EACHD at a time. On the other hand, people may use transition care while still admitted to permanent RAC or while in receipt of a care package (that is, CACP, EACH or EACHD), but not while they are in respite RAC. In addition, people on care packages may use also respite RAC.

Previous analysis has shown that discharge dates from community care programs are not always well reported, with service end dates recorded by the package service provider sometimes being a little later than the date reported for admission into permanent RAC. This reflects the difficulty that community care providers may have in assigning an accurate exit date when they do not have daily contact with the care recipient (AIHW: Karmel 2005b).

After linkage, service use dates for a P_PID were therefore edited when there was apparent concurrent use of incompatible programs:

- Permanent RAC admission and discharge dates were generally assumed to be reported correctly.
- If there was any overlap with use of permanent RAC, service use dates for respite RAC, CACP, EACH and EACHD were adjusted accordingly.
- Among care packages, EACHD dates were given preference over EACH dates, which were in turn given preference over CACP dates. Any overlapping service use dates were adjusted accordingly.
- Respite RAC could be used while the person was in receipt of a care package, but not TCP or permanent RAC. Use of both permanent RAC and TCP were given priority over use of respite RAC.
- If the P_PID linked to an NDI record, where necessary, program use dates were truncated at the date of death.

VHC

To obtain episodes of use of VHC services, it was necessary to combine the very detailed data recorded by the Department of Veterans' Affairs on service provision into episodes of service provision during which the client could be said to have been accessing VHC services. The method used to do this was the same as that used for the initial PIAC study and is described in detail in Appendix B3 in AIHW 2011c. In summary, periods of the use of a particular service type were derived from the detailed data recorded fortnightly for administrative purposes. Episodes of use of VHC were then obtained by amalgamating periods of use across all service types.

VHC can be used in conjunction with all other programs, except permanent RAC. Again, permanent RAC admission and discharge dates were assumed to be reported correctly. If there was any apparent overlap with use of permanent RAC, VHC service use dates were adjusted accordingly. Again, if the P_PID linked to an NDI record, use dates were truncated at the date of death, as necessary.

ACAP

A person may get an assessment under ACAP at any time. Consequently, there is no need to adjust assessment dates because the person was receiving another service during the assessment period. However, within P_PID there were some inconsistencies in reported ACAP assessment dates, and a number of edits were undertaken to resolve these. In

addition, inspection of the ACAP data sets showed that sometimes assessments were included more than once, and so all duplicates were removed. Records for a person were identified as duplicates if they had the same values reported for the assessment team and the following 5 dates: referral date, first intervention date, first face-to-face contact date, delegation date and assessment end date.

A number of dates are recorded by the ACAT during the assessment, and these were used to derive assessment start and end dates:

- To allow for inconsistencies in reported dates, assessment start date was derived as the earliest date among:
 - date the referral was received by the ACAT
 - date of first contact of clinical nature
 - date of first face-to-face contact
 - date on which the delegate signed the Aged Care Client Record (ACCR) form
 - date on which the comprehensive assessment of the person ended
 - date on which care coordination ended.

Date of referral was selected as the start date in 99.8% of cases.

- Similarly, to allow for inconsistencies in a small number of reported dates, assessment end date was derived as the latest date among
 - date the referral was received by the ACAT
 - date of first contact of clinical nature
 - date of first face-to-face contact
 - date on which the delegate signed the ACCR form
 - date on which the comprehensive assessment of the person ended.

The last 2 of these dates were selected in 99.8% of cases, with the end of the comprehensive assessment being used for 68.9%.

In addition, dates were truncated at the date of death, where applicable.

It is possible for a person to be getting 2 assessments at the same time. For example, a person may be in the process of being assessed while living at home. A fall could then result in the person being admitted into hospital where they are also assessed. However, a person should not have 2 assessments happening at the same time by the same ACAT. There were cases in the ACAP data of people apparently receiving 2 assessments by the same ACAT at the same time. A number of rules were therefore applied to resolve the start and end dates for these overlapping assessments. The rules – described in Table B9 – are based on the nature of the overlap and whether the 2 assessments in question were complete (that is, had sign-off on decisions made on approvals) or were closed off while incomplete. Assessments were dropped if, after applying these rules, the start date was after the end date.

Table B9: Edits applied to assessment dates within P_PID and ACAT

Nature of overlap/type of second assessment ^(a)	First ^(a) assessment: type of assessment	
	Completed	Incomplete
Second assessment start and end dates are between those for the first assessment		
Completed	Delete the second assessment	Delete the first assessment, keep the second assessment and back-date the start
Incomplete	Delete the second assessment	Delete second assessment
Second assessment starts before the end of the first assessment		
Completed	Truncate the end date of the first assessment	Delete the first assessment; backdate the start date of the second assessment.
Incomplete	Truncate the start date of the second assessment	Delete the first assessment; backdate the start date of the second assessment.

(a) The first assessment starts on the same date or before the second assessment. There may be other assessments for the P_PID.

HACC

The HACC MDS collection data are provided quarterly by agencies to state and territory governments. No information on dates that agencies started or finished providing services to a client were included in MDS V1. In MDS V2, there is provision for recording service provision dates. These dates relate to service provision generally by an agency, and are often not reported on the quarterly data. In addition, HACC quarters in which only case management and planning and/or respite care services were reported as provided to a client were not to be included in the analysis data set: the former because no services were provided directly to the client, and the latter because of inconsistent reporting practices over the study period. Consequently, some data manipulation is required to derive HACC service use dates for a person across agencies and across quarters.

The process used here to derive HACC service use dates is the same as that used in the initial PIAC study (see AIHW 2009b, 2011c), and assumes that – in the absence of evidence to the contrary – a person uses HACC services throughout any quarter for which they have service use reported. In the current application, agency service provision dates were used when available.

Two external factors affected the derivation of the HACC dates:

- assessment by an ACAT
- use of non-HACC services.

The former is important because, although an ACAT assessment is not needed to access HACC services, many people are directed to HACC by ACATs during the assessment process (see Section 3; also AIHW 2011c). Consequently, if the first ACAT assessment occurred in the same quarter as first use of HACC services, it was assumed HACC use started just after the start of the ACAT assessment, unless an earlier HACC assessment had been reported (see AIHW 2009b).

Use of non-HACC services also affects the dates because many HACC service types should not be used by people accessing other aged care programs. In particular, HACC services should not be provided to people living in permanent RAC. Also, only limited HACC services should be accessed by people on aged care packages:

- Service group 1: Nursing and allied health services (such as podiatry, occupational therapy, physiotherapy and social work) can be accessed by CACP recipients, but not EACH or EACHD clients.
- Service group 2: Centre-based day care, which includes the assistance provided to a client to attend and participate in group activities conducted in a centre-based setting, can be accessed by CACP, EACH and EACHD recipients.
- Service group 3: Other HACC services (domestic assistance, personal care, linen services, food services, transport, social support, respite care, home maintenance and modification, and goods and equipment) should not be accessed by CACP, EACH and EACHD recipients. For a complete list of services provided through HACC, see DoHA 2006b.

However, people using HACC services may also access respite RAC and TCP.

HACC service use dates were therefore derived within the above 3 service groups, excluding records that reported use of only carer services (including respite care) and/or case management and planning. The resulting dates were then compared with the edited service use dates for permanent RAC and care packages, and cases of non-permissible program overlap were resolved by adjusting the HACC dates. Dates showing use of all HACC services were derived by combining overlapping and contiguous service use periods for the 3 service groups.

Finally, if the P_PID linked to an NDI record, a two-pronged approach was taken to ensure consistency of dates because of the more limited nature of data available for linkage of annual HACC MDSs:

- Generally, HACC service use dates were truncated at the date of death.
- If, however, a HACC event started more than 90 days after the date of death, the P_PID was split in two, with the earlier events begin associated with the original P_PID and the events occurring after the date of death being assigned to a new P_PID.

After making the above adjustments, around 70% of use start dates and 80% of use end dates were based on the start and end dates of quarters.

As assumed for other program use, a HACC client is assumed to start using HACC services on the day they become a HACC client and to cease using HACC services the day they exit (that is, they do not use services on the day they exit). Because the majority of HACC use dates are based on the start and end dates of quarters, the numbers of HACC clients on a particular day will be generally be overestimated. The exception to this is the estimate for the last day of the quarter: this will be noticeably lower than those for other days in the quarter because those clients who do not get HACC assistance in the following quarter and whose exit date is therefore the end of the quarter are assumed to exit HACC on that day. Table B10 illustrates the variability of estimates of people using HACC services on a particular day.

From the above, it can be seen that the count of HACC clients on the last day of the quarter estimates the number of people with program use continuing into the next quarter. As such, given the imprecision of HACC use dates, it provides a better estimate of the number of clients using the program on a day than estimates using other dates in the quarter. The large

variation in estimates results from the considerable movement of clients into and out of HACC. For example, in the October quarter of 2010, around 50,000 people started and 62,000 ended a period of HACC service provision.

Table B10: The effect of date choice on daily estimates of HACC clients aged 65+, selected dates, 2002 to 2010

Day of choice	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimated number of clients									
1 September ^(a)	262,746	287,906	302,322	306,710	317,973	338,906	362,996	372,944	391,319
30 September ^(b)	208,115	219,056	239,744	239,227	243,075	278,797	283,407	299,929	315,551
1 October ^(a)	276,126	290,601	315,800	304,445	311,053	336,588	336,155	349,062	361,753
1 November ^(a)	274,175	288,868	314,115	302,768	313,198	344,848	359,459	372,029	386,074
1 December ^(a)	271,908	286,461	311,824	300,469	313,699	349,403	365,175	377,645	393,049
31 December ^(b)	204,824	224,274	244,598	238,666	247,473	282,386	277,950	297,863	296,659

(a) Due to imprecise service use dates, includes many cases where the client was in receipt of care during the quarter, but not necessarily on that day.

(b) Includes cases where people continued their care in the next quarter, and people reported as receiving care on that day only.

Note: Age is at the day of choice.

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While permanent care in a residential care facility remains a key service for many older Australians, in recent years greater emphasis has been placed on the provision of home-based support. This report examines how this shift has affected the way that people use aged care programs, and investigates the initial take-up of care. The analysis shows that use of aged care programs before entering permanent residential care is increasing, as is the use of any aged care services in a person's last year of life.