Transitions between aged care services

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DATA LINKAGE SERIES
Number 2

Transitions between aged care services

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November 2005

Australian Institute of Health and Welfare
Canberra

AIHW cat. no. CSI 2

A complete list of the Institute's publications is available from the Business Promotion and Media Unit, Australian Institute of Health and Welfare, GPO Box 570, Canberra ACT 2601, or via the Institute's website at <http://www.aihw.gov.au>.

ISSN 1883-1238

ISBN 1 74024 512 1

Suggested citation

Karmel R 2005. Transitions between aged care services. AIHW cat. no. CSI 2. Canberra: AIHW (Data Linkage Series no. 2).

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Published by Australian Institute of Health and Welfare

Printed by Pirion

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Acronyms

ACAT	Aged Care Assessment Team
ACCMIS	Aged and Community Care Management Information System
AIHW	Australian Institute of Health and Welfare
ASCCSS	Australian Standard Classification of Countries for Social Statistics
C3C2–SLK	Statistical linkage key based on first three consonants of family name, first two consonants of given name, date of birth and sex
CACP	Community Aged Care Package
DoHA	Department of Health and Ageing
HACC	Home and Community Care
MDS	Minimum data set
NCSIMG	National Community Services Information Management Group
RAC	Residential aged care
SAAP	Supported Accommodation Assistance Program
SACC	Standard Australian Classification of Countries
SLK	Statistical linkage key
SLK-581	Statistical linkage key based on five letters of name (5), date of birth (8) and sex (1) (see Section 1.2)

Symbols

. .	when used in a table, means not applicable
—	when used in a table, means nil or rounded to zero (including null cells)

Acknowledgements

This report was prepared as part of a project funded jointly by the Australian Institute of Health and Welfare and the Department of Health and Ageing. The report was authored by Rosemary Karmel of the Community Services Integration and Linkage Unit within the Institute. Important contributions were also made by Anne Jenkins and Peter Braun of the Institute's Ageing and Aged Care Unit. Useful comments on various drafts of the report were provided by Diane Gibson, Ruel Abello and Ann Peut of the Australian Institute of Health and Welfare, and by David Martin, Tom Goff, Gilian Lee, D'Arcy Jackson and John Patroni of the Department of Health and Ageing.

Summary

Three main programs provide care services to older people in Australia: the Home and Community Care (HACC) program (which provides services to disabled people of all ages, and their carers), Community Aged Care Packages (CACPs) and residential aged care (RAC) services. With the development of the quarterly collection for the HACC program, it has become possible to develop a picture of transitions between these programs by linking the various data collected on the three programs. Complete demographic data—such as name, address and date of birth information—are not available for all three programs. However, data linkage is possible using a statistical linkage key which is either directly collected or derivable from the data available for the programs.

This report examines the extent of quarterly transitions between services using data linked deterministically via the statistical linkage key SLK-581. Basic descriptive statistics are provided for those making these transitions. Data relating to the period 1 April 2002 to 31 March 2003 were used. As with all projects using statistical data linkage within the AIHW, data linkage was carried out following examination and approval by the AIHW Ethics Committee.

A previous report, *Data Linkage Protocols Using a Statistical Linkage Key* (AIHW: Karmel 2005), examined the quality of the data available for undertaking statistical data linkage between the programs and described the protocols followed to ensure that the privacy of individuals was not compromised. Practices that allow consistent linkage procedures to be used over time and across data sets were also outlined.

Quarterly movements

In absolute terms, transitions between HACC and residential respite care involved the largest number of people, with over 5,500 people aged 65 years and over using both these services in a quarter. Over 4,600 older people also moved from HACC to permanent residential care between quarters. Movements of between 1,000 and 2,000 people occurred quarterly between CACPs and residential respite, HACC and CACPs, and CACPs and permanent residential aged care, with the last two movements generally involving increasing levels of care. Few people decreased their level of care; the largest movements that could involve a decrease in care occurred between CACPs and HACC (under 500 people). Changing from permanent residential aged care to a CACP was very rare, involving less than 30 people in a quarter. Examination of data quality for the three programs indicates that these figures are likely to underestimate rather than overestimate the extent of transitions between programs.

In relative terms, an estimated 55% of respite residents in a quarter were CACP recipients and/or HACC clients. In addition, nearly half of all people starting on

a CACP in a quarter had been HACC clients in the previous quarter, and 37% of people with a permanent admission into RAC had been either CACP recipients less than 90 days before and/or HACC clients in the preceding quarter. Forty per cent of CACP recipients leaving a package (or half of those leaving for reasons other than death) were admitted into permanent residential aged care within 90 days of their separation. In any one quarter only a small proportion of HACC clients were involved in transitions between care programs: at most 4% of older HACC clients were affected by one or more transitions (including use of residential respite care), with 2% or fewer being involved in any given change in care arrangements (either short or long term). This compares with HACC services being stopped for around 1% of HACC clients within a quarter due to death.

In the analysis presented in this report, transitions between HACC services, CACPs and residential aged care were looked at by considering changes in care over 3-month periods. There are many other ways of analysing movements, and the type of analysis undertaken depends on the issue being considered and the data available.

Linkage validation

The overall validity of the linked data was examined by comparing variables common to the data sets being linked. In addition, the apparent concurrent use of programs by clients where this is unlikely to occur was also investigated.

The validation analyses showed that overall the links established via SLK-581 are reliable. However, even allowing for some overlap between community care programs and permanent residential aged care, the apparent prevalence of unlikely concurrent use of programs was larger than expected. Some of this overlap could have been caused by the occurrence of identical keys for different people, but was most likely the result of the record-keeping practices of service providers, both in including unfunded services provided by HACC agencies on the HACC MDS, and in inaccurate reporting of care dates, especially for the community care programs.

1 Introduction

There are several programs which provide care services to older people in Australia. Information on the movement of people between these programs would help policy analysts and researchers to understand when and why people move between these services, and would provide insight into the interplay of the various programs in the Australian aged care system.

If sufficient data were available on two or more programs, data linkage could be used to link the program data sets and thus allow examination of relationships and movements between programs. In such a scenario, only statistical linkage would be required, as 'the individual unit … is important only in terms of its contribution to the pattern of use of the client group overall' and 'the identity of the individual unit is unimportant for "statistical" linkage (whereas the identity of the unit is critical for "administrative" linkage purposes)' (NCSIMG 2004:5; note that administrative data linkage is not undertaken by the AIHW). Such statistical linkage between three aged care programs is the subject of this report.

Often, statistical linkage between data sets is based on full name and other demographic data, and the data are linked using probabilistic methods based on the similarity of the demographic data in records in the data sets being linked (NCSIMG 2004:10–11). However, complete name data are not essential for data linkage if sufficient data are available which can distinguish between individuals with high probability. In some data sets, a statistical linkage key—that is, 'a derived variable used to link data for statistical and research purposes that is generated from elements of an individual's personal demographic data' (NCSIMG 2004:12)—is available which can be used to distinguish between individuals. The statistical linkage key can then be used to link records, either deterministically or probabilistically, across data sets (Box 1).

Box 1: Statistical linkage methods

Deterministic matching *links records using a fixed set of variables, and involves exact one-to-one character matching of these variables. When linking records, only those with exactly the same data for the set of linkage variables are considered to match.*

Probabilistic matching *uses mathematical algorithms to determine the likelihood or probability that two or more records from the same, or different, data sets represent the same person or entity. When comparing two records, each variable is compared and assigned a score based on how well it matches. Matching on a rare characteristic is given a higher score than matching on a common one. The final score for the comparison is the sum of the scores for the individual variables. The decision on whether two records match is based on the total match score: the higher the score the more likely it is that the records match. Cut-off scores are used to distinguish between matches and non-matches. Often some clerical review of matches is undertaken for those comparisons with match scores around the cut-off. Variations in reported data, for example in names or dates of birth, can be allowed for in probabilistic matching.*

Three key programs which provide care services to older Australians are the Home and Community Care (HACC) program, Community Aged Care Packages (CACPs) and residential aged care (RAC) services. For many years administrative by-product data has been collected on the clients of the RAC and CACP programs and stored in the Department of Health and Ageing's Aged and Community Care Management Information System (ACCMIS). However, it was not until the implementation of the quarterly minimum data set (MDS) collection for the Home and Community Care program in 2001 that sufficient data became available that could support data linkage between the data sets for the three programs.

Different data are available for the three programs, and because, unlike the two other programs, the HACC data do not contain full name information, full name–based probabilistic linkage cannot be used. However, the HACC MDS contains data for a statistical linkage key which can also be derived for the other programs. Therefore, in this study, a statistical linkage key (based on parts of name, date of birth and sex) has been used to distinguish between clients. Deterministic matching was then used to link records across data sets. The derivation of linked data sets through use of this key makes it possible to identify the movement of clients between services, and to develop a picture of transitions between the main community and residential aged care programs.

In this report the extent of quarterly transitions between services is quantified, and basic descriptive statistics are provided for those making these transitions. Changes in program use are examined, concentrating on:

- use of residential respite care by people using community care services
- increases in the level of care being accessed
- decreases in the level of care being accessed.

To examine these movements, the September and December 2002 quarters of the HACC MDS were each linked to the RAC and CACP data. Links between RAC and CACP data were also established. Linkage procedures followed those described in the report *Data Linkage Protocols Using a Statistical Linkage Key* (AIHW: Karmel 2005). Before data linkage was carried out, ethics approval to undertake the linkage and subsequent analysis was obtained from the Australian Institute of Health and Welfare's Ethics Committee.

The aged care programs included in this study, the statistical linkage key used to link the data sets (SLK-581) and the two linkage options considered are briefly described below. A broad analysis of quarterly transitions between aged care programs is then given in Chapter 2. In Chapter 3, the quality of linkage key data is examined, and the overall validity of the linked data is discussed by comparing variables common to the data sets being linked. In addition, the apparent concurrent use of programs by clients where this is unlikely to occur is also investigated. Many approaches can be taken when examining movements between programs, and other possible approaches are briefly discussed in Chapter 4.

1.1 The aged care services

The aged care services included in this study are the Home and Community Care (HACC) program, Community Aged Care Packages (CACPs) and residential aged care (RAC) services.

The bulk of home- and community-based services for older people are provided under the auspices of the HACC program. The HACC target population is people of all ages requiring assistance because of disability and/or frailty (and their carers), and the aim of the program is to enhance the independence of people in these groups and avoid their premature or inappropriate admission to long-term residential care. The program includes home nursing services, delivered meals, home help and home maintenance services, transport and shopping assistance, allied health services, home- and centre-based respite care, and advice and assistance of various kinds. HACC also provides brokered or coordinated care for some clients, through community options or linkages projects. During 2002–03, at least 661,000 clients received services through Home and Community Care; of these, just over three-quarters were aged 65 or more (DoHA 2003). Because transitions between aged care programs are the focus of this study, in the analysis presented in Chapter 2 discussion of transitions by HACC clients concentrates on those for people aged 65 and over.

Community Aged Care Packages 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 (which may, however, be provided through HACC), with care being coordinated by the package provider. To receive a package, an Aged Care Assessment Team (ACAT) approval specifically for a CACP is required. On 30 June 2003, there were 26,573 people in receipt of a CACP, and during 2002–03 there were 14,719 admissions onto a package (AIHW 2004a).

Residential aged care services provide accommodation and support for older people who can no longer live at home. To enter residential care, people must have the appropriate approval from an ACAT. Two levels of care are available: low-level care and high-level care. Short-term respite care services are also available. During 2002–03 there were 51,200 admissions into permanent residential aged care and 45,445 into respite care (excluding transfers within care type), and on 30 June 2003, 142,846 people were in permanent residential aged care and 2,549 were in residential respite care (AIHW 2004c).

1.2 The statistical linkage key (SLK-581)

The linkage key used to link the aged care data collections in this study was first proposed during the development of the HACC MDS. The statistical linkage key collected in the HACC MDS for a person is the concatenation of the 2nd, 3rd and 5th letters of the family name, the 2nd and 3rd letters of the given name, date of birth as a character string of the form *ddmmyyyy*, followed by the character '1' for male and '2'

for female. Non-alphabetic letters in names are excluded (for example, hyphens and apostrophes), and where a name contains insufficient letters, the character '2' is used as a place marker for absent key letters. The character '9' is used for any other missing data so that the linkage key is always 14 characters long.

Because of its increasing use in other data collections, in this report the HACC statistical linkage key is referred to as SLK-581, where the '5' represents the five letters of the name, the '8' represents the eight digits of date of birth, and the '1' represents the single character for sex. The utility of the SLK-581 statistical linkage key for undertaking linkage between aged care programs was examined in an earlier report (AIHW: Karmel 2005).

1.3 Linkage options

Two options were considered when linking data from the three programs, depending on the additional data available to enhance the linkage:

- *Option 1 – Basic linking*: Under this option, all records with SLK-581 linkage keys incorporating missing or poor information are excluded from the data sets prior to linking. Links are then established by matching on SLK-581.
- *Option 2 – Enhanced linking*: As far as possible, all valid data in the linkage key are retained. If there is no missing information contributing to the linkage key, links are established by matching on SLK-581. If the linkage key contains some poor quality information but there is still sufficient data for linkage if postcode data are available, SLK-581 is used in conjunction with postcode to establish links with other data sets. Records with insufficient data for linkage are excluded from the data sets prior to linking; for SLK-581, this includes all cases with incomplete or inaccurate date of birth.

The choice of option when undertaking linking projects depends on a number of factors, including the time available to carry out the linkage, and the additional geographic data available for inclusion in any adjusted linkage keys. Where comparable client postcode (or equivalent) data are available, enhanced linkage which uses postcode to augment linkage keys with some missing data can be used. Among the aged care programs considered in this report, because of differences in the way that client postcode data had been collected (see AIHW: Karmel 2005: Section 5.3), enhanced linkage was possible only when linking between the HACC and CACP programs; consequently only basic linkage could be used when linking between HACC and RAC and between CACPs and RAC.

For both options, deterministic linking was used to establish links between records; that is, only records in different data sets with exactly the same linkage key (original or enhanced) were linked. In the rare case of non-unique links being identified (possible for CACP and RAC records only), the link to be retained was chosen randomly. Note that probabilistic, rather than deterministic, linking could also have been used, but was not in this study mainly because only linkage key data are available for HACC (and not complete name). The gains from using probabilistic

linking, in terms of establishing more linked records, would be less than if full name data were available for all data sets.

The data cleaning and linkage procedures used when linking data sets for the analysis in this report are described in detail in Chapter 5 of *Data Linkage Protocols Using a Statistical Linkage Key* (AIHW: Karmel 2005).

2 Base analysis: quarterly transitions

Client transitions between aged care programs are examined below, concentrating on:

- use of residential respite care by people using community care services
- increases in the level of care being accessed by clients
- decreases in the level of care being accessed by clients.

Quarterly transitions between services are quantified, and basic descriptive statistics are provided for those making these transitions.

Because the HACC MDS does not contain service start and end dates, it is not possible to examine rigorously movement into and out of this program. Consequently, the analyses presented below investigate only changes that occur between quarters. Although more detailed analysis could be undertaken when looking at interactions between Community Aged Care Packages and residential aged care, the analysis of movement between these programs has also been restricted to a quarterly timeframe to facilitate comparisons of movements between all three programs.

The study focuses on changes in service receipt occurring in the 12 months centred around the September and December quarters of 2002. Two quarterly HACC MDS collections—the September and December 2002 quarters—were each linked to the RAC and CACP databases for the period from 1 April 2002 to 31 March 2003 using the procedures described in *Data Linkage Protocols Using a Statistical Linkage Key* (AIHW: Karmel 2005). Similarly, links between CACP recipients and RAC clients were established. The movement of people between programs across quarters was then examined using these links.

In the investigations below, basic linkage was used to establish client movements. Enhanced linkage, which can be used when linking the HACC and CACP data sets, was not used because of the very small number of additional links it achieves (see Table 3.4). Consequently, when establishing links, all cases with incomplete linkage keys were excluded. In the HACC MDS, all SLKs using 1 January birth dates were assumed to be incomplete, and in the RAC and CACP data sets 1st-of-decade birth dates were assumed to be inaccurate (that is, birth dates in the form 1 January 19N0 where N = 0, 1, 2 …). Clients with missing name and/or sex data were also excluded (see Section 3.1 for discussion of quality of SLK-581 keys).

In general, the extent of movement between HACC and other aged care programs is likely to be understated, mainly because not all HACC agencies participate in the data collection: for the September and December 2002 quarterly collections 78% and 86% of HACC agencies submitted data, respectively (DoHA 2003). However, it is

generally accepted that the collections cover a greater percentage of HACC clients because—according to advice from the Department of Health and Ageing—larger agencies are more likely to participate than smaller ones. In addition to agency non-participation, poor linkage key data for a small proportion of clients also act to increase the extent of undercoverage (see Section 3.1). On the other hand, there is evidence that some clients of service providers who receive HACC funding are erroneously included in the HACC MDS (see Section 3.3). These clients will tend to inflate the HACC client numbers and may also lead to some inaccuracies in identified movements into and out of HACC. Inaccuracies in entry and exit dates, in particular for the community care programs, may also affect the identification of movements involving these programs (see Section 3.3).

2.1 Use of residential respite care

Residential respite care is important both for people who need a higher level of care just for the short term and as a component of the carer support system (AIHW 2003a:309). On 30 June 2002, there were 2,422 respite residents among the 138,929 people in residential aged care at that time, and over the previous 12 months there had been just over 43,300 admissions into residential respite care (AIHW 2003c).

The use of residential respite by people using HACC and CACP services is discussed below. Note, however, that there is some overlap between respite use by HACC clients and CACP recipients because people can access both programs simultaneously. In particular, people on a CACP may use nursing services provided under HACC (AIHW: Karmel 2004).

Use of residential respite by HACC clients

In the September quarter of 2002, over 291,200 people aged 65 and over were reported as receiving HACC services (370,000 all ages), and 12,300 used residential respite care (13,000 all ages). Among these people, it is estimated that 5,684 accessed both forms of care during the quarter (6,039 all ages) (Table 2.1, Table A2.1, Table A2.6). Reflecting the increasing participation by service providers in the HACC MDS, by the December quarter the number of older people reported using HACC services had increased to 305, 800. However, the number accessing respite services fell slightly to 12,100. Despite this fall, more people (5,801) were identified as using both HACC services and residential respite in the quarter. That this increase was most likely the result of greater participation in the HACC MDS rather than greater use of respite services by HACC clients is indicated by the stability of the usage rate of respite services by HACC clients over the two quarters (1.6% of all clients in both quarters) (Table 2.2).

Overall, in the two quarters examined, around 2% of older HACC clients (65+) used respite services (Table 2.2). Male clients were more likely than female clients to use residential respite: for the September quarter 2.3% of older male HACC clients had a period of residential respite compared with 1.8% of older female clients, with similar

results for the following quarter. However, this pattern was not consistent for all ages, with very old women (aged 85 and over) accessing residential respite care more than their male counterparts. For both sexes, use of respite by HACC clients increased with age, rising from around 1% of clients aged 65–69 to over 4% of clients aged 95 and over.

Whereas few HACC clients access residential respite in any one quarter, a large percentage of the people using respite services come via HACC. In both the September and December quarters of 2002, almost half of the people using residential respite had also used HACC services in the same quarter (Table 2.2). Because of the absence of HACC start and end service dates on the HACC MDS, it is not known whether people using HACC services are directed into respite care or whether the reverse is true; however, the former seems to be the more likely scenario given that this seems to be the case for CACP recipients who have used respite services (see note 3 to Table 2.3). Female respite residents were slightly more likely than male residents to have also used HACC services in the quarter, and this was true for nearly all age groups.

Table 2.1: People using both HACC services and residential respite in the same quarter, by age and sex, by quarter, 2002 (number)

	July–September			October–December		
	Male	**Female**	**All**	**Male**	**Female**	**All**
< 65	174	181	355	185	198	383
65–69	146	130	276	170	135	305
70–74	288	250	538	283	274	557
75–79	439	598	1,037	452	629	1,081
80–84	508	965	1,473	515	956	1,471
85–89	385	1,082	1,467	404	1063	1,467
90–94	170	555	725	172	557	729
95+	43	125	168	41	150	191
Total	**2,153**	**3,886**	**6,039**	**2,222**	**3,962**	**6,184**
Total HACC clients	**120,058**	**252,682**	**372,740**	**125,756**	**264,636**	**390,392**
Total respite clients	**4,773**	**8,163**	**12,936**	**4,792**	**8,025**	**12,817**

Notes

1. Age is as at the end of the quarter.

2. Table excludes cases with poor SLK-581 linkage key data, including all 1 January birth dates.

3. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Source: AIHW analysis of HACC MDS, DoHA ACCMIS database and AIHW linked database.

Table 2.2: People using both HACC services and residential respite in the same quarter, by age and sex, by quarter, 2002 (per 100 clients)

	Male	Female	All	Male	Female	All
July–September	**Per 100 HACC clients**			**Per 100 respite clients**		
< 65	0.5	0.4	0.4	49.6	58.2	53.6
65–69	1.6	0.7	1.0	50.2	50.0	50.1
70–74	1.9	0.8	1.1	52.7	47.1	49.9
75–79	2.1	1.3	1.5	46.5	47.2	46.9
80–84	2.5	1.9	2.0	44.3	48.0	46.6
85–89	2.6	2.8	2.8	41.3	47.9	46.0
90–94	3.1	3.7	3.6	37.3	45.7	43.4
95+	3.9	4.2	4.1	41.7	40.6	40.9
Total 65+	*2.3*	*1.8*	*2.0*	*44.8*	*47.2*	*46.3*
Total	**1.8**	**1.5**	**1.6**	**45.1**	**47.6**	**46.7**
October–December						
< 65	0.6	0.4	0.5	50.0	56.7	53.3
65–69	1.7	0.7	1.1	58.0	52.1	55.3
70–74	1.7	0.8	1.1	51.1	49.3	50.2
75–79	2.0	1.3	1.5	47.4	52.5	50.2
80–84	2.4	1.8	1.9	44.3	47.8	46.5
85–89	2.7	2.7	2.7	43.2	47.8	46.4
90–94	3.0	3.5	3.4	40.1	48.5	46.2
95+	3.5	4.7	4.4	43.2	51.7	49.6
Total 65+	*2.2*	*1.8*	*1.9*	*46.1*	*49.0*	*48.0*
Total	**1.8**	**1.5**	**1.6**	**46.4**	**49.4**	**48.2**

Notes

1. Age is as at the end of the quarter.
2. Table excludes cases with poor SLK-581 linkage key data, including all 1 January birth dates.
3. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Sources: Table 2.1, Table A2.1, Table A2.6.

Use of residential respite by CACP recipients

Nearly 28,600 people were recipients of a CACP at some time during the September quarter of 2002 (Table 2.3). Of the 13,000 people using residential respite care in the quarter, 1,573 were identified as accessing respite care while on a package. Figures were similar for the following quarter, although there were slightly more people using respite services while on a package even though there were fewer people using respite services overall in the December quarter compared with the September quarter.

In the two quarters examined, around 5.5% of CACP recipients used residential respite services while on a package (Table 2.3). Overall, usage rates for male and

female CACP recipients were similar, although there were some differences in some age groups. Use tended to increase with age.

Looking at all residential respite clients, in 2002 for both quarters about 12% of clients started a residential respite care episode while they were on a CACP. This percentage was higher for women than men in all age groups. Overall, 14% of female respite residents were on a CACP compared with 10% of male residents in the December 2002 quarter. Use of a CACP did not appear to either increase or decrease consistently with the age of the respite resident.

Combining the results on the use of respite care by HACC clients and CACP recipients suggests that up to 60% of respite residents in a quarter had used either CACP or HACC services before their admission into respite care. However, this is an overestimate due to the concurrent use of CACP and HACC services. Previous studies have shown that almost 40% of CACP recipients also used HACC services in the same quarter (AIHW: Karmel 2004:6). Comparing the linked HACC–respite and CACP–respite data sets showed that concurrent use of HACC and CACP services was even more common among those accessing respite, with around 47% of CACP recipients using respite also being HACC clients in the same quarter (749 and 750 people in the September and December quarters, respectively). Allowing for this overlap, almost 55% of respite residents in a quarter had either been on a CACP before their admission or used HACC services in the same quarter. (Given the data quality issues described in Section 3.1, this can be regarded as a likely underestimate, rather than an overestimate, of concurrent use of the two community care programs.)

Table 2.3: CACP recipients using residential respite while on a package, by age and sex, by quarter, 2002 (number)

	July–September			October–December		
	Male	**Female**	**All**	**Male**	**Female**	**All**
< 65	24	29	53	14	32	46
65–69	24	41	65	33	40	73
70–74	58	79	137	43	84	127
75–79	96	174	270	96	159	255
80–84	107	277	384	111	272	383
85–89	102	316	418	107	337	444
90–94	56	143	199	56	179	235
95+	11	36	47	10	35	45
Total	**478**	**1,095**	**1,573**	**470**	**1,138**	**1,608**
Total CACP recipients	**8,500**	**20,082**	**28,582**	**8,405**	**20,148**	**28,553**
Total respite clients	**4,799**	**8,212**	**13,011**	**4,813**	**8,061**	**12,874**

Notes

1. Age is as at the end of the quarter.

2. Table excludes cases with poor SLK-581 linkage key data, including all 1st-of-decade birth dates.

3. Table includes periods of respite overlapping but not contained within the CACP period of assistance. For the quarters included in the table, between 9% and 10% of CACP recipients had a respite period that extended beyond the CACP separation date. No cases were observed where the period of respite preceded and overlapped the CACP.

Source: AIHW analysis of DoHA ACCMIS database and AIHW linked database.

Table 2.4: CACP recipients using residential respite while on a package, by age and sex, by quarter, 2002 (per 100 clients)

	Male	Female	All	Male	Female	All
July–September	**Per 100 CACP recipients**			**Per 100 respite clients**		
< 65	2.7	2.6	2.6	6.8	9.1	7.9
65–69	4.5	4.5	4.5	8.2	15.6	11.7
70–74	5.7	4.2	4.8	10.5	14.8	12.6
75–79	6.6	4.9	5.4	10.1	13.6	12.1
80–84	5.9	5.6	5.7	9.3	13.7	12.1
85–89	5.8	6.5	6.3	10.9	13.9	13.0
90–94	6.2	6.2	6.2	12.3	11.7	11.9
95+	6.4	7.0	6.9	10.6	11.6	11.4
Total	**5.6**	**5.5**	**5.5**	**10.0**	**13.3**	**12.1**
October–December						
< 65	1.6	2.8	2.3	3.8	9.1	6.4
65–69	5.8	4.3	4.9	11.2	15.3	13.1
70–74	4.4	4.4	4.4	7.7	15.1	11.4
75–79	6.7	4.5	5.1	10.0	13.2	11.8
80–84	6.1	5.5	5.7	9.5	13.5	12.1
85–89	6.4	6.9	6.8	11.4	15.1	14.0
90–94	6.4	7.8	7.4	13.1	15.6	14.9
95+	5.6	6.9	6.6	10.5	12.1	11.7
Total	**5.6**	**5.6**	**5.6**	**9.8**	**14.1**	**12.5**

Notes

1. Age is as at the end of the quarter.

2. Table excludes cases with poor SLK-581 linkage key data, including all 1st-of-decade birth dates.

Sources: Table 2.3, Table A2.8, Table A2.7.

2.2 Increase in level of care

Given that people's care needs are likely to increase as they get older, it is expected that there is a substantial number of cases where people go from:

- using HACC services to being on a CACP
- using HACC services in their home to living permanently in residential aged care
- being on a CACP in their home to living permanently in residential aged care.

These transitions are discussed below.

New use of a CACP by HACC clients

Although many people stay at home with the assistance of HACC services, there may come a time when these services on their own are not sufficient, and more coordinated care is needed. In such circumstances, the client may either move into

permanent residential aged care or access a CACP to provide them with a coordinated package of care services.

Analysis of movement from HACC services to CACPs is complicated by both the lack of dates on the HACC MDS and by the concurrent use of HACC services by CACP recipients. To overcome these problems, links were identified between people who used HACC but not CACP services in a particular quarter and those starting on a CACP in the next quarter. In addition, HACC clients who die during the quarter should not be considered as potential CACP recipients for the following quarter, and so would ideally be removed from the analysis. However, a client may stop receiving HACC services for a number of reasons, including death, and reason for ceasing services is not well reported in the HACC MDS. In both the September and December quarters, reason for cessation was given as 'Not stated/inadequately described' for around 40% of clients reported as ceasing. For this reason, the 1% of HACC clients reported as ceasing HACC service use due to their death have not been excluded from the analysis.

Table 2.5: HACC clients in one quarter starting on a CACP in the following quarter, by age and sex, by quarter, 2002 (number)

	HACC quarter July–September			HACC quarter October–December		
	Male	Female	All	Male	Female	All
< 65	34	51	85	35	56	91
65–69	29	58	87	24	54	78
70–74	59	105	164	58	115	173
75–79	82	202	284	89	205	294
80–84	103	280	383	95	321	416
85–89	100	305	405	103	287	390
90–94	32	131	163	36	126	162
95+	4	23	27	10	20	30
Total	**443**	**1,155**	**1,598**	**450**	**1,184**	**1,634**
Total HACC clients not on a CACP	**116,982**	**245,002**	**361,984**	**122,625**	**256,571**	**379,196**
Total CACP recipients admitted in the following quarter	**1,051**	**2,412**	**3,463**	**1,099**	**2,337**	**3,436**

Notes

1. Age is as at the end of the following quarter. Admitted CACP recipients include previous recipients starting on a new package.
2. Table excludes cases with poor SLK-581 linkage key data, including all 1 January birth dates.
3. 4,238 HACC clients in the September quarter were reported as ceasing service use due to death; excluding these cases from the linkage reduces the number of clients moving between programs by 1. For the December quarter the corresponding figures were 4,102 and 1.
4. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Source: Table A2.2, Table A2.9; AIHW analysis of DoHA ACCMIS database and AIHW linked database.

A total of 282,100 people aged 65 and over were identified as using HACC but not CACP services in the September 2002 quarter, compared with just over 3,200 older people starting on a CACP in the following (December) quarter. On linking these two groups of people, 1,513 people were identified as changing their care arrangements

from using HACC services only to using the coordinated care provided under a CACP (Table 2.5, Table A2.2, Table A2.9). The corresponding figures for clients of all ages were 362,000 HACC clients and 3,463 new CACP clients, with 1,598 of the HACC clients identified as taking up a CACP in the following quarter. For the December 2002 quarter, 296,400 older people were identified as using HACC but not CACP services, and nearly 3,200 started on a CACP in the March 2003 quarter. Just over 1,500 of these CACP recipients had used HACC services in the previous quarter.

Table 2.6: HACC clients in one quarter starting on a CACP in the following quarter, by age and sex, by quarter, 2002 (per 100 clients)

	Male	Female	All	Male	Female	All
HACC quarter July–September	**Per 100 HACC clients not on a CACP in the quarter**			**Per 100 CACP clients admitted in the following quarter**		
< 65	0.1	0.1	0.1	33.7	43.2	38.8
65–69	0.3	0.3	0.3	40.8	45.0	43.5
70–74	0.4	0.4	0.4	54.1	41.7	45.4
75–79	0.4	0.4	0.4	38.9	47.0	44.3
80–84	0.5	0.6	0.5	40.9	45.2	43.9
85–89	0.7	0.8	0.8	48.5	54.5	52.9
90–94	0.6	0.9	0.8	35.6	51.8	47.5
95+	0.4	0.7	0.6	36.4	46.0	44.3
Total 65+	*0.5*	*0.6*	*0.5*	*43.1*	*48.1*	*46.6*
Total	**0.4**	**0.5**	**0.4**	**42.2**	**47.9**	**46.1**
HACC quarter October–December						
< 65	0.1	0.1	0.1	32.1	42.4	37.8
65–69	0.3	0.3	0.3	33.8	43.5	40.0
70–74	0.4	0.4	0.4	45.3	48.1	47.1
75–79	0.4	0.4	0.4	42.8	47.6	46.0
80–84	0.4	0.6	0.6	40.4	51.1	48.2
85–89	0.7	0.7	0.7	43.6	57.1	52.8
90–94	0.6	0.8	0.8	38.3	51.4	47.8
95+	0.8	0.6	0.7	55.6	57.1	56.6
Total 65+	*0.5*	*0.5*	*0.5*	*41.9*	*51.2*	*48.3*
Total	**0.4**	**0.5**	**0.4**	**40.9**	**50.7**	**47.6**

Notes

1. Age is as at the end of the following quarter. Admitted CACP recipients include previous recipients starting on a new package.
2. Table excludes cases with poor SLK-581 linkage key data, including all 1 January birth dates.
3. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Sources: Table 2.5, Table A2.2, Table A2.9.

Relatively speaking, very few HACC clients move onto a package in any one quarter, with around 0.5% of older clients not already on a package in one quarter accessing a CACP in the following quarter (Table 2.6). Transition rates were very similar for men

and women, although female HACC clients had a marginally higher rate than male. The likelihood of HACC clients taking up a CACP rose gradually with age.

Among people admitted to a CACP in a quarter, over 46% had used HACC services in the previous quarter (Table 2.6). This percentage was consistently higher across all age groups for women accessing CACPs than for men, and overall 48% of women starting on a package in the December quarter of 2003 had used HACC services in the September 2002 quarter, compared with 42% of men. The corresponding figures for the next quarter were 51% for women and 41% for men. For new CACP recipients, there did not appear to be a relationship between age and previous use of HACC services.

Movement to permanent residential care by HACC clients

Analysis of movement from HACC services into permanent RAC is again complicated by the lack of dates on the HACC MDS. In addition, the validation analysis suggested that some clients recorded on the HACC MDS were in permanent residential aged care and so should not have been included in the data collection (see Section 3.3). To overcome these problems, links were identified between people who used HACC in a particular quarter but who were not identified as being permanent RAC residents in that quarter and those who were admitted to permanent residential aged care in the next quarter. As when looking at movements between HACC and CACPs, the 1% of HACC clients reported as ceasing service use because of their death were not excluded from the analysis owing to the high rate of missing data for reason for cessation.

A total of 284,500 older people were identified as using HACC but not permanent RAC in the September 2002 quarter, compared with almost 15,100 with an admission into permanent RAC in the following quarter (364,600 and 15,742 people of all ages, respectively) (Table 2.7, Table A2.4, Table A2.13). Nearly 4,800 of those older people (4,937 people of all ages) admitted into a RAC service were identified as having used HACC services (but not permanent RAC) in the previous quarter. For the December 2002 quarter, 298,900 older people were identified as using HACC but not permanent RAC, and just over 14,000 older people started in permanent residential aged care in the March 2003 quarter. Slightly more than 4,600 of these residents had used HACC services in the previous quarter.

Among people aged 65 years and over who were HACC clients in the September quarter 2002, 1.7% were admitted into permanent RAC the following quarter. For the December 2002 quarter, the corresponding figure was 1.6%. Admission rates increased steadily with age, from 0.6% of HACC clients aged 65–69 to around 4% of clients aged 95 and over. In nearly all age groups, male HACC clients had higher admission rates than female clients, although this pattern was more pronounced for the September and December 2002 quarter.

Table 2.7: HACC clients in one quarter starting in permanent RAC in the following quarter, by age and sex, by quarter, 2002 (number)

	HACC quarter July–September			HACC quarter October–December		
	Male	Female	All	Male	Female	All
< 65	91	93	184	72	71	143
65–69	76	74	150	92	84	176
70–74	181	170	351	164	190	354
75–79	295	507	802	281	487	768
80–84	388	803	1,191	406	832	1,238
85–89	402	945	1,347	330	898	1,228
90–94	187	549	736	169	537	706
95+	49	127	176	45	127	172
Total	**1,669**	**3,268**	**4,937**	**1,559**	**3,226**	**4,785**
Total HACC clients not in permanent RAC in the quarter	**117,492**	**247,093**	**364,585**	**123,015**	**258,828**	**381,843**
Total people admitted to permanent RAC in the following quarter	**5,468**	**10,275**	**15,743**	**5,074**	**9,538**	**14,612**

Notes

1. Age is as at the end of the following quarter. Admitted permanent RAC clients include people moving between two RAC services; transfers between permanent care accounted for 22% of all admissions into permanent RAC in 2002–03.
2. Table excludes cases with poor SLK-581 linkage key data, including all 1 January birth dates.
3. 4,231 HACC clients in the September quarter were reported as ceasing service use owing to death; excluding these cases from the linkage reduces the number of clients moving between programs by 1. For the December quarter the corresponding figures were 4,059 and 9.
4. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Source: Table A2.4, Table A2.13; AIHW analysis of DoHA ACCMIS database and AIHW linked database.

Almost one-third of people with an admission into permanent RAC in a quarter had used HACC services in the previous quarter. This percentage varied between 22% and 40%, depending on the age and sex of the clients. For admissions between January and March 2003 a greater proportion of men admitted into permanent RAC had previously used HACC services than women in nearly all age groups, but this was not the case for the preceding quarter's admissions.

Table 2.8: HACC clients in one quarter starting in permanent RAC in the following quarter, by age and sex, by quarter, 2002 (per 100 clients)

	Male	Female	All	Male	Female	All
HACC quarter July–September	**Per 100 HACC clients not in permanent RAC in the quarter**			**Per 100 RAC clients admitted in the following quarter**		
< 65	0.3	0.2	0.2	24.4	33.8	28.4
65–69	0.8	0.4	0.6	29.0	33.6	31.1
70–74	1.2	0.6	0.8	32.1	30.4	31.2
75–79	1.5	1.1	1.2	30.1	35.5	33.3
80–84	1.9	1.6	1.7	30.0	31.1	30.7
85–89	2.8	2.5	2.6	33.2	33.1	33.1
90–94	3.4	3.7	3.6	30.3	29.7	29.8
95+	4.4	4.2	4.3	29.9	25.6	26.7
Total 65+	*1.8*	*1.6*	*1.7*	*31.0*	*31.8*	*31.5*
Total	**1.4**	**1.3**	**1.4**	**30.5**	**31.8**	**31.4**
HACC quarter October–December						
< 65	0.2	0.1	0.2	22.0	29.7	25.2
65–69	1.0	0.5	0.6	35.2	40.2	37.4
70–74	1.1	0.6	0.7	33.1	34.8	34.0
75–79	1.3	1.0	1.1	30.9	35.6	33.7
80–84	1.9	1.6	1.7	31.9	35.6	34.3
85–89	2.2	2.3	2.3	30.3	33.5	32.6
90–94	2.9	3.4	3.3	29.2	32.1	31.4
95+	3.7	3.9	3.9	31.3	26.3	27.5
Total 65+	*1.7*	*1.5*	*1.6*	*31.3*	*33.9*	*33.1*
Total	**1.3**	**1.2**	**1.3**	**30.7**	**33.8**	**32.7**

Notes

1. Age is as at the end of the second quarter. Admitted permanent RAC clients include people moving between two RAC services; transfers between permanent care accounted for 22% of all admissions into permanent RAC in 2002–03.
2. Table excludes cases with poor SLK-581 linkage key data, including all 1 January birth dates.
3. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Sources: Table 2.7, Table A2.4, Table A2.13.

Movement to permanent residential care by CACP recipients

As people's care needs increase, they may no longer be able to stay at home with a Community Aged Care Package. Such people may need to move into permanent residential aged care.

The presence of admission and separation dates on both the CACP and RAC data sets means that movements between these two programs can be measured more precisely than those between HACC and RAC, or HACC and CACPs. However, to keep the timeframes comparable with those used to investigate movements from HACC, the CACP–RAC transition was examined by looking at people who

separated from a CACP in a quarter. Those separating CACP clients who were admitted into permanent RAC within 90 days (inclusive) of their separation date were then identified as movers. Because this is not a strict quarter-to-quarter movement, the number of CACP recipients changing their care arrangements is compared with the number of people leaving a CACP in a quarter. In addition, it is known that some packages cease because the recipient has died. These records were excluded from the analysis so that the number of movers could be compared with the number of potential aged care residents among the CACP separating clients. Note, however, that figures derived excluding those reported as dying will understate the number of people moving between the two programs to the extent that separation mode is misreported for CACPs (see note 1 to Table 2.9).

In the September quarter 2002, 2,864 people left their CACP for reasons other than death. Of these, 1,485 were admitted into permanent residential aged care within 90 days of their CACP separation (Table 2.9). Consequently, 52% of people leaving a CACP in the quarter (not due to death) were admitted into permanent RAC within 90 days (Table 2.10). For the following quarter, the numbers were slightly lower, with 50% moving on to residential care. Overall, women were more likely to go on to residential aged care than men; however, this pattern was not consistent for all age groups. In general, the proportion of separating CACP recipients going into permanent RAC increased with age.

Table 2.9: CACP recipients separating in one quarter for reasons other than death and admitted into permanent RAC within 90 days, by age and sex, by quarter, 2002 (number)

	CACP quarter July–September			CACP quarter October–December		
	Male	Female	All	Male	Female	All
< 65	15	10	25	9	9	18
65–69	10	17	27	6	18	24
70–74	42	53	95	34	44	78
75–79	68	166	234	48	125	173
80–84	96	265	361	88	222	310
85–89	113	301	414	80	255	335
90–94	69	195	264	55	171	226
95+	14	51	65	12	31	43
Total	**427**	**1,058**	**1,485**	**332**	**875**	**1,207**
Total CACP recipients separating in the quarter	**877**	**1,987**	**2,864**	**693**	**1,721**	**2,414**

Notes

1. Reason for separation is sometimes recorded incorrectly. However, those CACPs identified as ceasing owing to the death of the recipient were excluded from the analysis to provide a better baseline for measuring movement into residential aged care. Overall, 3,601 people separated from a CACP during July–September 2002, and 2,999 people separated from a CACP during October–December 2002. Including separations identified as ending in death results in 21 and 22 additional clients being identified as moving between CACPs and permanent RAC following a separation in the September and December 2002 quarters, respectively.
2. Age is as at the end of the following quarter. Separating CACP recipients include people who may subsequently start on a new package.
3. Movement within 90 days includes cases with reported overlapping periods of care.
4. Table excludes cases with poor SLK-581 linkage key data, including all 1st-of-decade birth dates.

Source: Table A2.10; AIHW analysis of DoHA ACCMIS database and AIHW linked database.

Table 2.10: CACP recipients separating in one quarter for reasons other than death and admitted into permanent RAC within 90 days, by age and sex, by quarter, 2002 (per 100 CACP recipients separating in the quarter)

	Male	Female	All	Male	Female	All
	CACP quarter July–September			CACP quarter October–December		
< 65	23.4	16.4	20.0	19.6	17.0	18.2
65–69	31.3	30.4	30.7	17.6	31.6	26.4
70–74	41.6	41.4	41.5	44.2	34.9	38.4
75–79	45.6	49.3	48.1	45.3	45.0	45.1
80–84	52.7	54.5	54.0	51.8	52.0	51.9
85–89	53.1	57.4	56.2	56.7	55.1	55.5
90–94	61.1	62.3	62.0	56.1	65.5	63.0
95+	60.9	62.2	61.9	57.1	55.4	55.8
Total	**48.7**	**53.2**	**51.9**	**47.9**	**50.8**	**50.0**

Notes

1. Age is as at the end of the following quarter. Separating CACP recipients include people who may subsequently start on a new package.
2. Table excludes cases with poor SLK-581 linkage key data, including all 1st-of-decade birth dates.

Sources: Table 2.9, Table A2.10.

To examine the proportion of permanent residential aged care admissions coming from CACPs, the CACP–RAC move was also examined by looking at people who were admitted into permanent RAC in a particular quarter and who had separated from a package no more than 90 days before. These movers could then be compared with the number of people admitted as a permanent resident into RAC in the quarter. The reported mode of separation from the CACP was not considered in this analysis as comparisons were being made with known admissions into residential aged care. Permanent admissions in the December 2002 and March 2003 quarters were examined to allow comparisons to be made with the movements into permanent RAC in these quarters by HACC clients (see Table 2.7 and Table 2.8).

Overall, 15,804 people had admissions into permanent RAC between October and December 2002 (Table 2.11). Of these, 8% (1,264) had been on a CACP within 90 days of admission (Table 2.12). In the following quarter, fewer people were admitted into residential care (14,675); however, more of these (1,318, or 9%) had been admitted within 90 days of the client separating from a package. For both quarters examined, in all but the oldest age group, relatively more women than men admitted into permanent RAC had been on a CACP within the previous 3 months. Younger men were less likely to come from a package than older men, but such a pattern was not evident for women.

Table 2.11: People admitted into permanent RAC within 90 days of leaving a CACP, by age and sex, by quarter, 2002 and 2003 (number)

	RAC quarter October–December 2002			RAC quarter January–March 2003		
	Male	Female	All	Male	Female	All
< 65	10	8	18	9	9	18
65–69	10	19	29	16	20	36
70–74	35	43	78	26	54	80
75–79	46	132	178	64	140	204
80–84	93	247	340	100	224	324
85–89	79	265	344	93	269	362
90–94	56	176	232	62	183	245
95+	12	33	45	17	32	49
Total	**341**	**923**	**1,264**	**387**	**931**	**1,318**
Total people admitted to permanent RAC in the quarter	**5,488**	**10,316**	**15,804**	**5,098**	**9,577**	**14,675**

Notes

1. Age is as at the end of the quarter. Admitted permanent RAC clients include people moving between two RAC services; transfers between permanent care accounted for 22% of all admissions into permanent RAC in 2002–03.
2. Movement within 90 days includes cases with reported overlapping periods of care.
3. Table excludes cases with poor SLK-581 linkage key data, including all 1st-of-decade birth dates.

Source: Table A2.14; AIHW analysis of DoHA ACCMIS database and AIHW linked database.

Combining the results on the movement of HACC clients and CACP recipients into permanent RAC suggests that around 40% of people admitted into permanent residential care in a quarter either had used HACC services in the previous quarter or were on a CACP less than 90 days before their admission. As when looking at the use of respite services, this is an overestimate because of the concurrent use of CACP and HACC services. Again, around 47% of CACP recipients moving into permanent RAC were also HACC clients identified as moving into permanent residential care between quarters (576 and 631 people for the December 2002 and March 2003 quarters, respectively). Allowing for this overlap, it is estimated that almost 37% of people with an admission into permanent RAC in a quarter had used either CACP or HACC services prior to their admission. (Once more, given the data quality issues described in Section 3.1, this can be regarded as a likely underestimate rather than overestimate of concurrent use of the two community care programs.)

Table 2.12: People admitted into permanent RAC within 90 days of leaving a CACP, by age and sex, by quarter, 2002 and 2003 (per 100 permanent RAC clients admitted in the quarter)

	Male	Female	All	Male	Female	All
	RAC quarter October–December 2002			RAC quarter January–March 2003		
< 65	2.7	2.9	2.8	2.7	3.8	3.1
65–69	3.8	8.6	6.0	6.0	9.6	7.6
70–74	6.2	7.7	6.9	5.3	9.9	7.7
75–79	4.7	9.2	7.4	7.0	10.2	8.9
80–84	7.1	9.5	8.7	7.8	9.5	8.9
85–89	6.5	9.3	8.4	8.5	10.0	9.6
90–94	9.0	9.5	9.4	10.7	10.9	10.9
95+	7.3	6.6	6.8	11.5	6.6	7.8
Total	**6.2**	**8.9**	**8.0**	**7.6**	**9.7**	**9.0**

Notes

1. Age is as at the end of the quarter. Admitted permanent RAC clients include people moving between two RAC services; transfers between permanent care accounted for 22% of all admissions into permanent RAC in 2002–03.

2. Table excludes cases with poor SLK-581 linkage key data, including all 1st-of-decade birth dates.

Sources: Table 2.11, Table A2.14.

2.3 Decrease in level of care

Although many people need an increasing level of care over time, there are cases when people reduce the amount of formal care services they are using. This reduction in level of care is examined below. In particular, three transition types are considered:

- recipients of a CACP giving up the package and subsequently using only HACC services[1]
- permanent residents of residential aged care leaving the facility and subsequently using HACC services
- permanent residents of residential aged care leaving the facility and moving onto a CACP within 90 days.

Use of HACC services by people leaving a CACP

In the June quarter 2002, nearly 2,500 people left a CACP for reasons other than death (as recorded on ACCMIS); 386 of these people were identified as using HACC services (and were not on another package) in the following quarter (Table 2.13).

1. Given some of the services that are available through HACC but not from a CACP (such as nursing and allied health services), moving from a CACP to using just HACC services may not necessarily result in a decrease in level of care. However, for many people this will be the case, and so all such movements are included in the discussion on decreasing levels of care.

Between July and September 2002, over 2,800 people gave up a package, with nearly 500 of them being identified as HACC-only clients in the December quarter 2002.

Table 2.13: CACP clients separating for reasons other than death in one quarter and using HACC in the following quarter, by age and sex, by quarter, 2002 (number)

	CACP quarter April–June			CACP quarter July–September		
	Male	Female	All	Male	Female	All
< 65	10	18	28	8	15	23
65–69	13	10	23	8	8	16
70–74	10	26	36	14	26	40
75–79	26	46	72	37	53	90
80–84	13	67	80	28	93	121
85–89	16	67	83	32	91	123
90–94	15	37	52	14	51	65
95+	2	10	12	3	13	16
Total	**105**	**281**	**386**	**144**	**350**	**494**
Total CACP recipients separating in the quarter	**767**	**1,716**	**2,483**	**871**	**1,976**	**2,847**
Total HACC clients not on a CACP the following quarter	**116,982**	**245,002**	**361,984**	**122,625**	**256,571**	**379,196**

Notes

1. Reason for separation is sometimes recorded incorrectly. However, those CACPs identified as ceasing owing to the death of the recipient were excluded from the analysis to provide a better baseline for measuring movement into residential aged care. Overall, 3,123 people separated from a CACP during April–June 2002, and 3,577 people separated from a CACP during July–September 2002. Including separations identified as ending in death results in 40 and 68 additional clients (among the 640 and 730 clients reported as dying) being identified as moving between CACPs and HACC following a separation in the June and September 2002 quarters, respectively.
2. Age is as at the end of the HACC quarter. Separating CACP recipients include people who may subsequently start on a new package.
3. Table excludes cases with poor SLK-581 linkage key data, including all 1 January birth dates.
4. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Source: Table A2.3, Table A2.11; AIHW analysis of DoHA ACCMIS database and AIHW linked database.

Overall, in the two quarters examined, around 16% of CACP recipients who separated for reasons other than death and were identified as only using HACC services in the following quarter. Among HACC-only clients, very few had been on a package in the previous quarter—under 0.2%. Because of the small numbers involved, it is not possible to examine differences in the movement patterns for men and women or for people in different age groups.

The above estimates were derived by excluding people reported as leaving a CACP owing to death. This exclusion allows the number of people moving onto HACC to be compared with the potential number of movers from CACP. However, reason for discharge from a package is not always well reported to ACCMIS. Because of this reporting problem, including all people leaving a package in the analysis results in more people being identified as moving from a package to HACC. Among the 640 and 730 CACP recipients reported as dying in the two quarters examined, between 6% and 10% were identified (via data linkage) as using HACC services the following

quarter. Including these people increases the numbers of people identified as moving from CACP to HACC services by 40 and 68 people for the June and September 2002 quarters, respectively.

Table 2.14: CACP clients separating for reasons other than death in one quarter and using HACC in the following quarter, by sex, by quarter, 2002 (per 100 clients)

	Male	Female	All	Male	Female	All
	Per 100 CACP clients separating in the quarter			Per 100 HACC recipients clients not on a CACP in the following quarter		
CACP quarter April–June	13.7	16.4	15.5	0.09	0.11	0.11
CACP quarter July–September	16.5	17.7	17.4	0.12	0.14	0.13

Notes

1. Separating CACP recipients include people who may subsequently start on a new package.
2. Table excludes cases with poor SLK-581 linkage key data, including all 1 January birth dates.
3. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Sources: Table 2.13, Table A2.3, Table A2.11.

Use of HACC services by people leaving permanent residential aged care

Compared with CACPs, even fewer people leave permanent residential aged care and subsequently access HACC services. Overall, between April and June 2002, 5,100 people left permanent care in a RAC service for reasons other than death (reason as recorded on ACCMIS). Among these people, just 161 (3.2%) were identified as HACC clients (but not permanent RAC clients) in the following quarter (Table 2.15, Table 2.16). Similar results were observed for the following quarter. When compared with the total number of HACC clients, these movers make up under 0.1% of HACC clients. Again, small numbers prevent analysis by age and sex.

As for movement from CACPs to HACC, to allow the comparison of the number of people moving onto HACC with the potential number of movers from RAC, the above estimates were derived excluding people reported as leaving permanent residential aged care owing to death. Again, however, errors in the reported reason for leaving residential care can lead to underestimation of the number of people moving from permanent RAC to HACC. Among the 9,200 and 11,500 permanent residents reported as being discharged due to death in the two quarters examined, a proportion (under 2%) were identified via data linkage as using HACC services the following quarter. Although corresponding to only 99 and 181 people for the two quarters, respectively, these additional links substantially increase the number of people identified as moving from RAC to HACC services.

Table 2.15: Permanent RAC clients separating for reasons other than death in one quarter and using HACC in the following quarter, by age and sex, by quarter, 2002 (number)

	RAC quarter April–June			RAC quarter July–September		
	Male	Female	All	Male	Female	All
< 65	12	9	21	7	11	18
65–69	2	7	9	5	3	8
70–74	10	6	16	12	12	24
75–79	15	18	33	18	21	39
80–84	15	22	37	14	28	42
85–89	4	14	18	10	27	37
90–94	7	13	20	4	19	23
95+	2	5	7	1	3	4
Total	**67**	**94**	**161**	**71**	**124**	**195**
Total people separating from permanent RAC in the quarter	**1,659**	**3,429**	**5,088**	**1,783**	**3,909**	**5,692**
Total HACC clients not in permanent RAC the following quarter	**117,492**	**247,093**	**364,585**	**123,015**	**258,828**	**381,843**

Notes

1. Reason for separation is sometimes recorded incorrectly. However, those RAC periods of residence identified as ceasing owing to the death of the resident were excluded from the analysis to provide a better baseline for measuring movement into residential aged care. Overall, 14,245 people separated from a period of permanent residency during April–June 2002, and similarly 17,276 people separated during July–September 2002. If separations identified as ending in death results are included, then linking results in 99 and 181 additional clients (among those residents 9,157 and 11,548 reported as dying) being identified as moving between RAC and HACC following a separation in the June and September 2002 quarters, respectively.

2. Age is as at the end of the HACC quarter. Separating permanent RAC clients include people moving between two RAC services; transfers between permanent care accounted for 22% of all separations from permanent RAC in 2002–03.

3. Table excludes cases with poor SLK-581 linkage key data, including all 1 January birth dates.

4. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Source: Table A2.5, Table A2.15; AIHW analysis of DoHA ACCMIS database and AIHW linked database.

Table 2.16: Permanent RAC clients separating for reasons other than death in one quarter and using HACC in the following quarter, by sex, 2002 (per 100 clients)

	Male	Female	All	Male	Female	All
	Per 100 permanent RAC clients separating in the quarter			Per 100 HACC recipients clients not in permanent RAC in the following quarter		
RAC quarter April–June	4.0	2.7	3.2	0.06	0.04	0.04
RAC quarter July–September	4.0	3.2	3.4	0.06	0.05	0.05

Notes

1. Separating permanent RAC clients include people moving between two RAC services; transfers between permanent care accounted for 22% of all separations permanent RAC in 2002–03.

2. Table excludes cases with poor SLK-581 linkage key data, including all 1 January birth dates.

3. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Sources: Table 2.15, Table A2.5, Table A2.15.

Use of a CACP by people leaving permanent residential aged care

Movement between permanent residential aged care and CACPs was examined from two perspectives: by seeing how many people leaving permanent residential aged care in a quarter had started on a package within 90 days of separation, and by seeing how many people starting on a CACP in a quarter had left permanent residential care no more than 90 days previously. In all the possible movements examined, very few people were identified as moving, with 30 people or less identified as leaving permanent residential aged care and commencing a package within 90 days (Table 2.17, Table 2.18). This equates to less than 1% of people separating from permanent RAC for reasons other than death in a quarter, and under 1% of people starting a CACP in a quarter. Including separations reported as the result of the death of the resident does not affect these numbers.

Table 2.17: Permanent RAC clients separating in one quarter for reasons other than death and admitted onto a CACP within 90 days, by sex, by quarter, 2002 (number)

	RAC quarter April–June			RAC quarter July–September		
	Male	Female	All	Male	Female	All
Total movement	11	19	30	7	14	21
Total people separating from permanent RAC	1,670	3,447	5,117	1,790	3,929	5,719
Per 100 people separating from permanent RAC	0.7	0.6	0.6	0.4	0.4	0.4

Notes

1. Reason for separation is sometimes recorded incorrectly, or missing. However, those residents identified as ceasing owing to the death of the recipient were excluded from the analysis to provide a better baseline for measuring movement into residential aged care. Overall, 14,321 and17,350 people separated from permanent residential care during the June and September 2002 quarters. Including separations identified as ending in death results in no additional clients being identified as moving from permanent RAC to CACPs for either quarter.
2. Separating permanent RAC clients include people moving between two RAC services; transfers between permanent care accounted for 22% of all separations from permanent RAC in 2002–03.
3. Movement within 90 days includes cases with reported overlapping periods of care.
4. Table excludes cases with poor SLK-581 linkage key data, including all 1st-of-decade birth dates.

Source: Table A2.16; AIHW analysis of DoHA ACCMIS database and AIHW linked database.

Table 2.18: People starting a CACP in the quarter and within 90 days of leaving permanent RAC, by sex, by quarter, 2002 (number)

	CACP quarter July–September			CACP quarter October–December 2002		
	Male	Female	All	Male	Female	All
Total movement	11	13	24	9	14	23
Total people admitted to CACPs	1,356	2,900	4,256	1,062	2,438	3,500
Per 100 people admitted to CACPs	0.8	0.4	0.6	0.8	0.6	0.7

Notes

1. Admitted CACP recipients include previous recipients starting on a new package.
2. Table excludes cases with poor SLK-581 linkage key data, including all 1st-of-decade birth dates.

Source: Table A2.12; AIHW analysis of DoHA ACCMIS database and AIHW linked database.

On comparing the RAC–CACP links with those obtained for people moving from RAC to HACC, fewer than five people identified as starting on a package in a particular quarter (having moved from permanent RAC) also received HACC services in that quarter.

2.4 Summary of results

The results of the analysis of transitions presented above are summarised in Table 2.19 and Table 2.20. In absolute terms, the largest numbers of transitions were observed between HACC and residential respite, with over 5,500 people aged 65 and over using both these services in a quarter. Over 4,600 older people also moved from HACC to permanent residential aged care between quarters. Movements of between 1,000 and 2,000 people occurred quarterly between CACPs and residential respite, HACC and CACPs, and CACPs and permanent RAC, with the last two movements generally involving increasing levels of care. Few people left a CACP in favour of HACC-only services or moved from permanent residential aged care back to the community with the support of community care services. The largest of these movements occurred between CACPs and HACC (under 500 people). Changing from permanent RAC to a CACP was rare, involving less than 30 people in a quarter.

In relative terms, an estimated 55% of respite residents in a quarter were CACP recipients and/or HACC clients. In addition, nearly half of all people starting on a CACP in a quarter had been HACC clients in the previous quarter, and 37% of people with an admission into permanent RAC had been either CACP recipients less than 90 days before and/or HACC clients in the preceding quarter. Half of CACP recipients leaving a package for reasons other than death (or around 40% of all CACP separating recipients) were admitted into permanent RAC within 90 days of their separation. In any one quarter only a small proportion of HACC clients were involved in moving between care programs: at most 4% of older HACC clients were affected by one or more transitions, including the use of residential respite care, with 2% or fewer being involved in a particular change in care arrangements (either short term or long term). This compares with HACC services being reported as ceasing for just over 1% of older HACC clients in a quarter because of death.

Table 2.19: Summary of concurrent use of residential respite

Care type		Respite		Concurrent users		
	Number (A)		Number (B)	Number (C)	As % (C/A×100)	As % (C/B×100)
HACC July–September 2002 (65+)	291,178	Used RAC respite July–September 2002 (65+)	12,274	5,684	2.0	46.3
HACC October–December 2002 (65+)	305,837	Used RAC respite October–December 2002 (65+)	12,098	5,801	1.9	48.0
CACP July–September 2002	28,582	Used RAC respite July–September 2002	13,011	1,573	5.5	12.1
CACP October–December 2002	28,553	Used RAC respite October–December 2002	12,874	1,608	5.6	12.5

Note: Almost half of the CACP recipients using respite also received HACC services in the quarter, and so are counted both as HACC and CACP clients using respite care.

Sources: Table 2.1 to Table 2.4.

Table 2.20: Summary of movements between care types[a]

Initial care type	Number	Other care type	Number	Movers		
Increase in level of care	**(A)**		**(B)**	**Number (C)**	**As % (C/A×100)**	**As % (C/B×100)**
HACC, but not CACP Q2[b]	[c]282,065	CACP recipients admitted Q3	[c]3,244	[c]1,513	0.5	46.6
HACC, but not CACP Q3[b]	[c]296,394	CACP recipients admitted Q4	[c]3,195	[c]1,543	0.5	48.3
HACC, but not permanent RAC Q2[b]	[c]284,477	Permanent RAC clients admitted Q3	[c]15,095	[c]4,753	1.7	31.5
HACC (65+), but not permanent RAC Q3[b]	[c]298,863	Permanent RAC clients admitted Q4	[c]14,045	[c]4,642	1.6	33.1
CACP recipients separating for reasons other than death Q2	2,864	Recipients admitted to permanent RAC within 90 days of separation	. .	[d]1,485	51.9	n.a.
CACP recipients separating for reasons other than death Q3	2,414	Recipients admitted to permanent RAC within 90 days of separation	. .	[d]1,207	50.0	n.a.
CACP recipients admitted into permanent RAC in Q3 and within 90 days of separation from CACP	. .	Recipients admitted to permanent RAC Q3	15,804	1,264	. .	8.0
CACP recipients admitted into permanent RAC in Q4 and within 90 days of separation from CACP	. .	Recipients admitted to permanent RAC Q4	14,675	1,318	. .	9.0
Decrease in level of care						
CACP recipients separating for reason other than death Q1	2,483	HACC, but not CACP Q2	361,984	[d]386	15.5	0.1
CACP recipients separating for reason other than death Q2	2,847	HACC, but not CACP Q3	379,196	[d]494	17.4	0.1
Permanent RAC clients separating for reason other than death Q1	5,088	HACC, but not permanent RAC Q2	364,585	[d]161	3.2	—
Permanent RAC clients separating for reason other than death Q2	5,692	HACC, but not permanent RAC Q3	381,843	[d]195	3.4	0.1
Permanent RAC clients separating for reason other than death Q1	5,117	Clients admitted to CACP within 90 days of separation	. .	30	0.6	. .
Permanent RAC clients separating for reason other than death Q2	5,719	Clients admitted to CACP within 90 days of separation	. .	21	0.4	. .
Permanent RAC clients admitted to CACPs in July–September 2002 and within 90 days of separation from RAC	. .	Clients admitted to CACP Q2	4,256	24	. .	0.6
Permanent RAC clients admitted to CACPs in October–December 2002 and within 90 days of separation from RAC	. .	Clients admitted to CACP Q3	3,500	23	. .	0.7

(a) Q1 = April–June 2002 Q2 = July–September 2002 Q3 = October–December 2002 Q4 = January–March 2003.

(b) Includes around 1% of HACC clients reported to have ceased using HACC services during the quarter because of their death.

(c) Figures are for people aged 65+ (mainly affects HACC numbers).

(d) Underestimate due to errors in reported reason for separation.

Sources: Table 2.5 to Table 2.18.

3 Data quality and link validation

The quality of the links between the data for the various aged care programs is examined below by looking at the quality of the linkage key data in the data sets, the concordance (for linked records) between similar demographic variables from the different data sources, and the extent to which there is apparent concurrent use of programs when this is unlikely to happen.

3.1 Quality of SLK-581

High-quality information in the linkage key components is important when linking using a statistical linkage key. The procedures described in Chapter 5 of *Data Linkage Protocols Using a Statistical Linkage Key* (AIHW: Karmel 2005) were followed when preparing data and identifying poor-quality SLK-581 linkage key information in the various data sets.

HACC MDS data

As stated earlier, the HACC data used in this study were the July–September 2002 and October–December 2002 quarter HACC MDS collections. For these quarters, 96.5% and 96.3% of SLK-581 linkage keys, respectively, were based on complete information if it is assumed that all 1 January birth dates are unreliable (Table 3.1). Of the remaining keys (that is, incomplete keys), just under 10% (or 0.4% of all records) were either likely or highly likely to relate to a client who also had a complete SLK. A further 6% (or 0.2% of the total) could be included in the linkage using available linkage key data in conjunction with the postcode of the client's residence. Overall, for the September 2002 quarter, 372,740 HACC client records had complete SLK-581 linkage keys and were available for basic linking, with an additional 797 available for linkage using a postcode-adjusted key. Of the remaining incomplete SLK-581s, 1,312 were likely to be associated with another record with a complete linkage key. For the December quarter, the corresponding figures were 390,392 complete SLK-581 keys, 885 keys usable in enhanced linkage, and 1,511 incomplete keys likely to be associated with a complete SLK-581. Combining these results, around 3% of all records in each quarter—or approximately 11,500 in the September 2002 collection and 12,600 in the December 2002 collection—could not be covered by the linkage process at all.

Table 3.1: SLK-581 status in the HACC MDS, September and December quarters, 2002

	July–September 2002		October–December 2002	
SLK-581 status	**Number**	**Per cent**	**Number**	**Per cent**
Complete key	**372,740**	**96.5**	**390,392**	**96.3**
Incomplete key				
Sufficient key data for linking				
– Associated with a complete SLK[(a)]	356	0.1	364	0.1
– Not a associated with a complete SLK[(a)]				
• Linkable with postcode	797	0.2	885	0.2
• Not linkable (no postcode data available)	27	—	27	—
Insufficient key data for linking				
– Likely to be associated with a complete SLK[(b)]	956	0.2	1,137	0.3
– No association with a complete SLK identified[(b)]	10,738	2.8	11,824	2.9
– Insufficient information	685	0.2	775	0.2
Total	*13,559*	*3.5*	*15,012*	*3.7*
Total for linking using complete or adjusted keys[(c)]	*373,537*	*96.7*	*391,277*	*96.5*
Total	***386,299***	**100.0**	***405,404***	**100.0**

(a) The keys used to identify incomplete SLKs associated with complete SLKs depend on the components of the SLK-581 available for a particular record. Dates of birth prior to 1892 and those including a 1 January date were assumed to be erroneous. Adjusted linkage keys used to identify incomplete keys that are highly likely to be associated with complete SLK-581 linkage keys were:

- S3G2/dob
- G2/dob/ sex/client postcode
- G2/dob/client postcode (no cases)
- S3/dob/sex/client postcode
- S3/dob/client postcode

where S3 = three letters of family name as in the SLK-581; G2 = two letters of given name as in the SLK-581; dob = date of birth.

(b) Adjusted linkage keys used to identify incomplete keys that are likely to be associated with complete SLK-581 linkage keys were:

- S3G2/yob/sex/client postcode
- S3G2/yob/client postcode
- S3G2/decade/sex/client postcode
- S3G2/decade/client postcode
- S3G2/sex/client postcode.

where yob = year of birth; decade = decade of birth.

(c) Includes complete SLK-581 linkage keys and incomplete keys not associated with a complete SLK but with data to construct an effective adjusted key (as listed in (a) above).

Source: AIHW analysis of HACC MDS.

ACCMIS data

Data for the period 1 April 2002 – 31 March 2003 were extracted from ACCMIS for this study. This period was chosen as it enabled movements into HACC in the September 2002 quarter (from CACP or RAC) and movements out of HACC in the December quarter 2002 (into CACP or RAC) to be examined.

Very few records for RAC clients and CACP recipients have incomplete or inaccurate SLK-581 linkage key data (Table 3.2). Under 0.2% of records for both these programs

had either birth date given as the first of a decade, or had missing name or sex. A further 0.5% (1,031) of RAC records had 1 January birth dates which could not be used when linking to HACC data as these dates are considered unreliable in that data set, with 0.9% of CACP records (349) being similarly affected. A small number of clients had the same linkage key as another client: 130 RAC clients and 10 CACP recipients. It is also estimated that some clients had multiple Client IDs on ACCMIS: 55 RAC clients had 111 Client IDs between them, and 7 CACP recipients had a total of 14 Client IDs. Admissions for clients identified as having multiple Client IDs were attributed to one client when linking. A further 13 clients were tagged on ACCMIS as having multiple representation in the RAC data, but it was not possible to identify their partner Client ID.

Overall, excluding cases with poor name or sex data and any 1 January birth dates, for people receiving some care between 1 April 2002 and 31 March 2003 records for 201,253 RAC clients and 37, 642 CACP recipients—99% of clients—were available for basic linking with HACC data; under 0.1% of these clients had non-unique linkage keys. These records were also available for postcode-adjusted linkage, depending on the availability of comparable postcode data. An additional 1,031 RAC and 349 CACP records with 1 January birth dates (but not 1st of decade) were available for basic linking between RAC and CACPs, so that at most 156 RAC clients and 79 CACP recipients were excluded from linkage analysis between these two programs.

Table 3.2: SLK-581 status among RAC and CACP Client IDs, clients receiving services some time during April 2002 – March 2003

	RAC		CACP	
Complete SLK-581	**Number**	**Per cent**	**Number**	**Per cent**
Unique SLK-581	201,068	99.3	37,625	98.8
Replicated clients [(a)]	111	0.1	14	—
Coincident SLK-581[(b)]	130	0.1	10	—
Total	*201,309*	*99.4*	*37,651*	*98.9*
Possibly incomplete SLK-581				
Possibly poor birth date only: 1 January with year of birth (not decade)	1,031	0.5	349	0.9
1st-of-decade birth date and/or missing name and/or sex[(c)]	156	0.1	79	0.2
Total	*1,187*	*0.6*	*428*	*1.1*
Total ACCMIS Client IDs	**202,496**	**100.0**	**38,079**	**100.0**
Tagged Client IDs with unidentified partner Client ID(s)	**13**	**—**	**—**	**—**

(a) Two (or more) Client IDs relate to the same person, based on common SLK-581 with same postcode and/or same C3C2-SLK. The total number of representations is included in the table.

(b) Two (or more) Client IDs have the same SLK-581 key and but different postcodes and C3C2-SLKs, and so are considered to belong to different people.

(c) Very few (less than 5 in total) clients had missing name, and none had missing sex data.

Source: AIHW analysis of ACCMIS database.

Data on the quality of ACCMIS linkage information for each quarter in the year starting 1 April 2002 is given in Table 3.3. These provide baseline information on the quality underlying the linkage when matching between quarterly data. As is to be expected, the quality of the quarterly information reflects the findings for the annual data. The table also shows that, among clients with linkage keys suitable for either basic or adjusted linking with HACC data, valid postcode data was not available for around 1% of RAC clients and 2% of CACP recipients, with availability improving slightly over the year.

Table 3.3: SLK-581 status for RAC clients and CACP recipients receiving services some time during a quarter, by quarter, April 2002 – March 2003 (number)

SLK-581 status	June quarter	September quarter	December quarter	March quarter
RAC				
Complete SLK-581				
Unique SLK-581 linkage key	155,577	158,955	157,718	157,753
Replicated clients [(a)]	46	46	47	45
Coincident SLK-581[(a)]	92	98	97	100
Total	*155,715*	*159,099*	*157,862*	*157,898*
Missing postcode data	2,001	1,881	1,743	1,655
Possibly incomplete SLK-581				
Possibly poor birth date only: 1 January with year of birth (not decade)	840	837	817	823
Other poor data, including 1st decade birth dates	113	114	104	118
Total	*953*	*951*	*921*	*941*
Total clients	156,668	160,050	158,783	158,839
CACP				
Complete SLK-581				
Unique SLK-581	27,301	28,303	28,258	28,773
Replicated clients [(a)]	5	7	6	6
Coincident SLK-581[(a)]	3	6	9	7
Total	*27,309*	*28,316*	*28,273*	*28,786*
Missing postcode data	662	622	587	550
Possibly incomplete SLK-581				
Possibly poor birth date only: 1 January with year of birth (not decade)	258	266	280	288
Other poor data, including 1st decade birth dates	69	60	62	63
Total	*327*	*326*	*342*	*351*
Total clients	**27,636**	**28,642**	**28,615**	**29,137**

(a) See notes to Table 3.2. Client IDs were identified as replicated (i.e. two or more IDs for the one person) or having coincident SLKs using the full year's data; not all coincident SLKs need occur within a quarter. Note that only one replicate is counted in the table as only one is used when linking.

Source: AIHW analysis of ACCMIS database.

3.2 Concordance of client characteristics

A small number of similar variables relating to client characteristics are available on both the HACC MDS and ACCMIS. Although the low prevalence of non-unique linkage keys in quite large data sets already indicates strong linkage validity, high concordance between the values of these variables for linked records adds to the evidence that the linkage process is matching appropriate records across programs. Three variables in particular are suitable for such comparisons: client's state of usual residence, country of birth and language spoken. Indigenous status has not been included in the analysis because almost all the population belongs to a single category and because of data quality problems (see AIHW 2004b).

For validation purposes, all links between programs have been used, rather than examining all combinations of program movements across quarters. That is, we have examined links identified between records for people receiving HACC services in either of the two quarters in the study, records for people in residential care some time between 1 April 2002 and 31 March 2003, and records for people on a CACP some time between 1 April 2002 and 31 March 2003. This approach simplifies the validation process.

Overall, using the basic linkage strategy, 31,389 people who used either respite or permanent residential aged care services at some time between 1 April 2002 and 31 March 2003 were identified as also receiving HACC services in the September and/or December 2002 quarters (Table 3.4). In addition, nearly 9,000 people were identified as accessing both RAC and CACPs at some time between 1 April 2002 and 31 March 2003. Finally, 16,921 CACP recipients were identified as receiving HACC services between July and December 2002. Using postcode-enhanced linkage increased this number by about 30.

In the following analyses of variable concordance from different data sources, only links established using basic linkage were used. The information lost through this restriction is marginal because of the very small number of links added by using enhanced linkage.

Table 3.4: Links identified between people receiving HACC services July–December 2002, CACP services during April 2002 – March 2003 or who were in RAC during April 2002 – March 2003 (number)

		Adjusted linking	
Linked data	Basic linking	[(a)]Additional links using 2002–03 postcode	[(b)]Additional links using 2001–02 postcode
HACC and RAC clients	31,389	. .	. .
RAC and CACP clients	8,996	. .	. .
HACC and CACP clients	16,921	30	27

(a) Use when linking CACP admissions for 2002–03.

(b) Use when linking CACP admissions for 2001–02.

Notes

1. All clients receiving any services in the relevant periods are included in the table.
2. Over the year, there were 201,253 aged care residents with complete SLK-581 linkage keys which could be linked to HACC data. An additional 1,031 had 1 January birth dates (but not 1st of decade) and were included in the linkage between RAC and CACP.
3. Over the year, there were 37,668 CACP recipients with complete SLK-581 linkage keys which could be linked to HACC data. An additional 349 had 1 January birth dates (but not 1st of decade) and were included in the linkage between RAC and CACP.
4. For the two HACC MDS quarters combined there were 474,176 distinct complete SLK-581 linkage keys. An additional 1,306 incomplete keys were tested for linking using adjusted linking (for link keys used see footnote (a) to Table 3.1).

Source: AIHW analysis of linked data sets.

State or territory of residence

Over the period of interest the client's state or territory is recorded slightly differently on the HACC MDS and ACCMIS databases (see AIHW: Karmel 2005:Chapter 5). For HACC, a client's region of residence is based on where they usually live, whereas for ACCMIS (for assessments undertaken before 2003) the client's region relates to where they could be contacted by an ACAT following an assessment. Although the ACCMIS contact address may be different from the client's usual address, it is highly likely to be in the same state as where they live. Therefore, information on a client's state or territory provides a useful comparison for the purpose of general linkage validation.

Although it is likely that a small percentage of people may move jurisdictions between accessing the different aged care programs, and that some RAC clients and CACP recipients have ACAT contact addresses outside their jurisdiction of usual residence, it would be reasonable to expect a high degree of concordance between a client's region in the linked data from the various programs. This was indeed found to be the case for all comparisons made. The highest degree of correspondence was 99% for linked HACC and CACP records; the links between HACC and RAC records showed the lowest concordance, but this was still 97% (Table 3.5).

Table 3.5: Summary comparison of state/territory of client residence recorded in source data sets for linked records

Linked data	Total linked	Linked with valid data[a]	Total corresponding	Total corresponding
HACC clients in September 2002 quarter		**Number**		**Per cent**
HACC and RAC[b] clients	26,666	26,364	25,623	97.2
HACC and CACP[c] clients	14,097	13,945	13,809	99.0
HACC clients in December 2002 quarter				
HACC and RAC clients	23,114	22,818	22,165	97.1
HACC and CACP clients	13,705	13,548	13,394	98.9
RAC and CACP clients	8,996	8,996	8,820	98.0

(a) Number of records with valid state of residence in both relevant data sets. Data on state/territory of usual residence for one or both of the programs were missing in 1.3% or less of linked records.

(b) People in RAC at some time between 1 April 2002 and 31 March 2003.

(c) People on a CACP at some time between 1 April 2002 and 31 March 2003

Note: Table is based on links established using basic linking.

Source: Table A1.1 to Table A1.5.

Country of birth

Information on country of birth is useful for cross-validation because a person's place of birth does not change over time. However, it is subject to reporting and coding error, especially as international borders and names of countries change over the years, and as coding systems change. Changes in countries' borders and names have a particular impact among older migrants as the world map has changed considerably since World War II. In addition, the coding system used to record country of birth on ACCMIS changed in 2002–03, moving from the Australian Standard Classification of Countries for Social Statistics (ASCCSS) to the Standard Australian Classification of Countries (SACC). Countries of birth entered onto ACCMIS before this time were recoded automatically from ASCCSS to SACC using the concordance between the two classifications provided by the Australian Bureau of Statistics. To limit the effect of coding errors, country of birth comparisons were made using 10 broad regions, including Australia (see Table A1.6 to Table A1.10). In addition, cases with missing data in either of the source data sets were excluded from the analysis; the large number of cases excluded for this reason indicates that the quality of the reported data may not be high (see note (a) to Table 3.6).

Overall, when comparing the country of birth recorded on two data sets, the region of birth agreed in between 94% and 97% of cases (Table 3.6). Greatest correspondence (97%) was found between linked CACP and RAC records, most likely reflecting that both programs collect the information using the ACAT process and forms. Concordance between country of birth on HACC–RAC and HACC–CACP linked records was around 94% in all four comparisons made.

Table 3.6: Summary comparison of country of birth recorded in source data sets for linked records

Linked data	Total linked	Linked with valid data[a]	Total corresponding	Total corresponding
HACC clients in July–September 2002		**Number**		**Per cent**
HACC and RAC[b] clients	26,666	25,246	23,679	93.8
HACC and CACP[c] clients	14,097	11,749	11,050	94.1
HACC clients in October–December 2002				
HACC and RAC clients	23,114	21,879	20,465	93.5
HACC and CACP clients	13,705	11,446	10,772	94.1
RAC and CACP clients	8,996	7,935	7,711	97.2

(a) Number of records with valid country of birth in both relevant data sets. Data for country of birth for one or both of the programs were missing for between 5% and 17% of linked records, depending on the programs being linked.

(b) People in RAC at some time between 1 April 2002 and 31 March 2003.

(c) People on a CACP at some time between 1 April 2002 and 31 March 2003

Note: Table is based on links established using basic linking.

Source: Table A1.6 to Table A1.10.

Agreement between the codes varies with birthplace (Table A1.6 to Table A1.10), and some of the high level of correlation between the codes is due to the predominance of Australian-born people among those using aged care services, with over 70% of linked clients being born in Australia. However, there is also a high degree of concordance for other birthplaces. For example, for linked September 2002 HACC–CACP records, 93% of people reported as overseas-born on the September HACC data were also recorded as overseas-born in the CACP data set and 89% of those reported as not Australian-born on the CACP data were similarly reported on the September HACC data. In summary, between 84% and 98% of those reported as overseas-born on one data set were similarly reported on the second data set.

Language spoken

The last variable used to examine the face-validity of the linked data was language spoken. Unlike birthplace, a person's preferred language or main language spoken can change over time and with circumstance. In addition, the main language spoken by a person may not be the one they prefer. During the period of interest for this study—and until the end of 2002—ACATs recorded a client's preferred language which was then transferred to ACCMIS. For the HACC MDS, the client's main language spoken at home is reported. Comparisons of the language variables on the HACC and the other two data sets are affected by this difference in collection procedures.

As with country of birth, reporting and coding errors can also affect the accuracy of the data. When making comparisons, languages were combined into 11 groups, including English (see Table A1.11 to Table A1.15). As for country of birth, cases with missing data in either of the source data sets were excluded from the analysis; again the large number of cases excluded in some comparisons suggests that the quality of the reported data may not be high (see note (a) to Table 3.7).

Table 3.7: Summary comparisons of language spoken in source data sets for linked records

Linked data	Total linked	Linked with valid data[a]	Total corresponding	Total corresponding
HACC clients in July–September 2002		**Number**		**Per cent**
HACC and RAC[b] clients	26,666	25,507	24,329	95.4
HACC and CACP[c] clients	14,097	11,862	11,102	93.6
HACC clients in October–December 2002				
HACC and RAC clients	23,114	22,045	21,096	95.7
HACC and CACP clients	13,705	11,529	10,787	93.6
RAC and CACP clients	8,996	7,934	7,716	97.3

(a) Number of records with valid language spoken in both relevant data sets. Data on language spoken for one or both of the programs were missing for between 4% and 16% of linked records, depending on the programs being linked.

(b) People in RAC at some time between 1 April 2002 and 31 March 2003.

(c) People on a CACP at some time between 1 April 2002 and 31 March 2003.

Note: Table is based on links established using basic linking.

Source: Table A1.11 to Table A1.15.

Despite differences in the data items recorded on ACCMIS and the HACC MDS, for links between HACC and the RAC and CACP data sets, the reported language spoken by the client agreed for between 94% and 96% of linked records (Table 3.7). For links between RAC and CACP the concordance was higher at 97%. This greater degree of agreement is to be expected as both programs use the same instrument to record client characteristics, and so both recorded preferred language for the year under study. As with country of birth, some of this high degree of correlation between codes is due to the predominance of English among those using aged care services, with over 90% of linked records reporting English as the language spoken/preferred.

That preferred language may not be the same as main language spoken at home for many older people is reflected in the more detailed data shown in Tables A1.11–A1.15. Looking at linked September 2002 HACC–CACP data, 97% of those reporting English as the main language spoken at home in the HACC data also reported English as their preferred language in CACP the data; however, 26% of those reporting in the CACP data that they preferred a language other than English also reported English as the main language spoken at home in the HACC MDS.

3.3 Unlikely concurrent use of programs

Usually people do not access either HACC or CACP services while living permanently in residential aged care. Therefore, the validity of the linked data can be further investigated by examining concurrent use of permanent RAC and CACP and HACC services. However, high levels of overlapping periods of care could suggest either inaccurate linking or reporting errors in the data collections; both these problems affect the accuracy of linkage analyses—the former by incorrectly linking different people and the latter through inaccurate identification of use of particular programs.

Because service date information is not available on the HACC MDS, in order to compare concurrent use of HACC and permanent residential aged care we examined linked records showing both use of HACC in a particular quarter and permanent residence in RAC throughout the same quarter. For RAC and CACP data, dates showing the period(s) of use are available and so these were compared directly. Both comparisons are affected by uncertainty when recording exit dates from community care programs: although community care commonly involves regular contact with clients, a care provider may not find out about a change in a client's care arrangements (for example, admission to hospital or residential aged care) until some time after the event as the client involved may either not think to, or not be able to, inform the care provider.

Concurrent use of CACP and permanent RAC

Although people on CACPs may access residential respite care, concurrent use of permanent residential aged care and a CACP should not occur. Analysis of linked data shows that just over 1,700 people apparently used these services at the same time (Table 3.8). This equates to just under 1% of permanent RAC clients over the year of interest, 4.5% of CACP recipients and 19% of all records linked between the two programs. These links are not the result of either coincident linkage keys for different people on individual data sets or incorrect amalgamation of different client's records as only three of the overlapping periods related to linkage keys previously identified as either coincident or replicated keys on one of the source data sets (see notes (a) and (b) to Table 3.2). Also, the SLK-581 distinguishes well between individuals in large data sets, with only a very small number of duplicate keys seen in the ACCMIS-based data sets of up to 200,000 clients that are the focus of this study (see Table 3.2 and Table 3.3). Consequently, the high degree of overlap observed is unlikely to be due to people being incorrectly linked because of coincident linkage keys; rather some overlap is actually occurring, at least in terms of the dates of care being reported.

Further examination of the linked records showed that of the 1,733 overlapping periods of care identified for 1,727 people, only 41 were for people moving from RAC on to a CACP. If a large number of the links were inaccurate, we would expect to have seen more apparent movement in this direction. In addition, the reason for discharge from a CACP with a period of care that overlapped a RAC episode was nearly always recorded as going to a nursing home or hostel—for 1,471 periods out of 1,665 with known reason for discharge (or 88%). Death was given as the reason for discharge in only 60 cases, with a further 49 indicating that the client was going to hospital. These figures can be compared with around 20% of all packages ending with death, 7% with a recipient going to hospital and 46% when a client enters residential aged care (AIHW 2003b:44). In addition, among links showing movement from a CACP to respite residential aged care, as would be expected a high percentage (over 92% compared with 19% of all CACP–RAC linked records) involved periods of respite taken while the care recipient was still on the package.

Rather than showing problems with the linked data, the above findings suggest that separation dates recorded by the CACP service provider may be a little later than the date reported for admission into permanent residential aged care, reflecting the difficulty that community care providers may have in assigning an accurate exit date. The length of the overlap between CACP and permanent RAC periods of care also indicates such differences: in 75% of cases the overlap period was under 3 weeks, with half of overlapping periods being 1 week or less (Table 3.8). Comparing these statistics with the general length of packages—80% last at least 3 months—implies a small overlap period when a person moves between programs (AIHW 2003b:46). Excluding cases with overlap of 3 weeks or less would result in considering at most 364 of the identified 1,727 'concurrent use' links between clients as possible mismatches between people. This equates to 4% of the 8,996 matches between all RAC clients and CACP recipients, or 6% of matched clients with periods of care on both a CACP and in permanent residential aged care.

Concurrent use of HACC and permanent RAC

A HACC agency can supply services to residents of residential care provided that the services are not actually part of the residential contracts of service, that the HACC agency has the capacity to provide the services, and that the services are provided on a cost-recovery basis (personal communication with DoHA, 15 December 2004). However, such services should not be reported on the HACC MDS, as the objective of the HACC MDS is to identify the outputs of funding.

For the July–September 2002 quarter, linked data indicated that nearly 3,000 HACC clients who had received HACC services in that quarter were in permanent residential aged care at the same time (Table 3.8). This represented 0.8% of the HACC reported client population for that quarter, and 2.5% of clients living permanently in residential aged care throughout the quarter. For the following quarter, just over 3,600 reported HACC clients were linked to residents who were in permanent RAC throughout the quarter, or equivalently 0.9% of HACC clients and 2.9% of permanent RAC clients. In comparison, a total 31,389 of links were identified between HACC clients over the two quarters and RAC clients throughout the year from 1 April 2002 (Table 3.4).

That the links indicating concurrent use are unlikely to be the result of coincident SLKs for different people can again be seen in the specificity of the linkage key. Earlier analysis showed that client postcode adds considerable discriminating power to incomplete linkage keys (AIHW: Karmel 2005:Table 2.4). With this in mind, and noting that it is highly unlikely that two people with the same SLK-581 would live in the same small area (such as postcode), the occurrence of coincident keys in the HACC data can be examined. When deriving person-level data for the HACC MDS, all records with the same SLK-581 are considered to relate to the same person; however, there will be a small proportion of records where this is not the case. Combining the postcode of client usual residence with the SLK-581 key allows us to identify possible cases of coincident keys by comparing the number of distinct SLK-581 keys in a quarter with the number of distinct SLK-581 and postcode

combinations in the original data (with SLK-581 based on complete information, and postcode not missing). Such comparisons suggest that up to 1.4% of nearly 400,000 keys in a quarterly HACC MDS collection could relate to more than one person. (The actual percentage will be less than this as some clients change residence in a quarter, with around 0.4% of clients reported as stopping HACC services because of moving out of the area.) Coincident keys for different people are therefore likely to account for only a very small proportion of the cases of apparent concurrent use of HACC and permanent residential aged care as it is unlikely that a large proportion of those moving between HACC and RAC are also people with the same linkage key as another person.

One cause of the apparent overlapping periods of HACC and RAC use is difficulty in recording reliable exit dates for community care services: for the two quarters under study, between 25% and 30% of apparent cases of concurrent use related to people who were recorded as stopping HACC services in the quarter. The main reasons given for these clients leaving HACC were 'Client no longer needs assistance—problem resolved' (24% of overlapping leavers in both quarters), 'Moved to residential institutional care setting' (32% and 40% in the September and December quarters, respectively) and 'Not stated/inadequately described' (31% and 26%).

Another possible cause for the apparent overlap of service use is HACC providers reporting services not funded by HACC on the data set, or reporting services in the wrong quarterly collection. Looking at the cases with apparent concurrent use in more detail, over 90% involved only one or two HACC service types (Table 3.9). Also, even though such service use should not be reported on the HACC MDS if they were provided on a cost-recovery basis, some of the more common services used by these clients included a number that could legitimately be accessed by RAC clients. These included services such as transport, social support and centre-based day care. However, other services, especially services received at home (including assessment, nursing care, allied health, meals and domestic assistance) seem highly unlikely to be used by permanent residential aged care residents (personal communication with DoHA, 17 January 2005). Overall, in the September 2002 quarter 1,373 'concurrent' clients used at least one unlikely HACC service type such as any 'at home' service or personal or respite care; 1,796 'concurrent' clients used at least one of these service types in the following quarter. If these cases are considered to identify inappropriate linking (that is, incorrect linking between different people)—and noting that around 75% of people who were HACC clients in the December 2002 quarter were also clients in the previous quarter—these figures suggest that at most around 1,800 out of the 31,389 links (6%) identified between HACC and RAC clients could be the result of mismatches between different people with the same linkage key. Alternatively, this apparent concurrent use of inappropriate service types could point to some reporting of HACC-funded services on the wrong quarterly MDS, or could indicate inaccuracies in admission dates on ACCMIS.

Table 3.8: Unlikely concurrent use of programs

	Number of clients
Concurrent use of HACC and RAC	
July–September 2002	
In permanent RAC throughout the quarter	120,472
In HACC	372,740
In both concurrently	2,996
As per cent RAC clients	2.5
As per cent HACC clients	0.8
October–December 2002	
In permanent RAC throughout the quarter	123,169
In HACC	390,392
In both concurrently	3,619
As per cent RAC clients	2.9
As per cent HACC clients	0.9
Concurrent use of CACP and RAC, 1 April 2002–31 March 2003	
In permanent RAC some time during the year	183,152
In CACP some time during the year	37,991
In both CACP and permanent RAC concurrently	1,727
As per cent RAC clients	0.9
As per cent CACP recipients	4.5
25th percentile number of days of overlap	2
Median number of days of overlap	7
75th percentile number of days of overlap	18
90th percentile number of days of overlap	40

Notes

1. Table is based on links established using basic linking. Records with insufficient data for linking have been excluded.
2. HACC clients with no service types recorded for the quarter are not considered when counting clients with concurrent use (167 and 186 clients in the September and December quarters, respectively).
3. Among the 201,280 permanent RAC periods of care for 'linkable' clients within the year of analysis, 28 periods concurrent with another period of care for the same client were amalgamated before checking for concurrent use between RAC and CACP (6 for 6 clients with a unique SLK-581 and 22 for 18 clients identified as having multiple representation on ACCMIS). Similarly, among the 39,042 CACP periods of care for 'linkable' clients within the year of analysis, 4 periods concurrent with another period of care for the same client were amalgamated before checking for concurrent use between RAC and CACP (all relate to 3 clients identified as having multiple representation on ACCMIS).
4. Periods of permanent RAC or CACP care that started and ended on the same day have been excluded from the comparison of RAC and CACP usage.

Source: AIHW analysis of linked data.

Table 3.9: HACC services received by cases identified with concurrent use of HACC and permanent RAC, by quarter, 2002

	July–September 2002		October–December 2002	
Service type	**Number**	**Per cent**	**Number**	**Per cent**
Aids: reading	—	—	2	0.1
Aids: communication	5	0.2	7	0.2
Aids: medical care	7	0.2	9	0.2
Aids: self-care aids	11	0.4	24	0.7
Aids: support and mobility	17	0.6	46	1.3
Aids: other goods/equipment	14	0.5	22	0.6
Allied health–at home[(a)]	235	7.8	262	7.2
Allied health–in a centre	108	3.6	121	3.3
Assessment[(a)]	399	13.3	480	13.3
Car modifications	—	—	—	—
Case management	42	1.4	56	1.5
Case planning/review	401	13.4	453	12.5
Centre-based day care	572	19.1	676	18.7
Counselling	86	2.9	91	2.5
Domestic assistance[(a)]	248	8.3	310	8.6
Formal linen service[(a)]	—	—	2	0.1
Home maintenance [(a)]	85	2.8	102	2.8
Home modification[(a)]	16	0.5	18	0.5
Meals received at a centre	193	6.4	229	6.3
Meals received at home[(a)]	107	3.6	162	4.5
Nursing care received at a centre	50	1.7	83	2.3
Nursing care received at home[(a)]	343	11.4	568	15.7
Other food services	9	0.3	7	0.2
Personal care[(a)]	66	2.2	96	2.7
Respite care[(a)]	11	0.4	11	0.3
Social support	363	12.1	444	12.3
Transport	767	25.6	737	20.4
All cases with identified concurrent use	**2,996**	**100.0**	**3,619**	**100.0**
Mean number of services	1.4	. .	1.4	. .
Median number of services	1	. .	1	. .
90th percentile number of services	2	. .	2	. .
Number with unlikely concurrent services[(a)]	*1,373*	. .	*1,796*	. .

(a) HACC service types considered highly unlikely to be used concurrently with permanent RAC.

Note: Table is based on links established using basic linking. HACC clients receiving no HACC service types in the quarter have been excluded.

Source: AIHW analysis of linked data.

3.4 Summary

The above validation analyses show that overall the links established by SLK-581 are reliable. However, even allowing for some overlap between community care programs and permanent residential aged care, the apparent prevalence of unlikely concurrent use of programs is larger than expected. Some of this overlap could be explained by the occurrence of identical keys for different people, but overlap is most likely the result of the record-keeping practices of service providers, both in reporting unfunded services provided by HACC agencies on the HACC MDS, and in inaccurate reporting of care dates for the three programs.

4 Other approaches

In the above discussion, movement between HACC services, CACPs and residential aged care was looked at by considering changes in care over 3-month periods. There are many other ways of analysing movements, and several examples are discussed below. In general, the type of analysis undertaken will depend on the issue being investigated and the data available, and the examples given below are in no way meant to be exhaustive.

4.1 Different time periods

Point in time analysis

Movements can be examined by seeing who among people receiving a particular type of care on a particular day received in the past (or in the future) another type of care. For example, we may be interested in whether people in receipt of a CACP or in residential care on 31 December 2001 had received HACC services in the preceding 3 or 6 months. Note that such an approach is not very useful for examining movement to and from residential respite care because relatively few people are in residential respite care on any one day.

Extended period analysis

Another way of looking at movements is to examine changes over an extended period. For example, we could investigate how many people who started on a CACP between July and September 2000 subsequently entered permanent residential aged care. Note, however, that because of the death of many care recipients, some patterns may be masked when extended periods are used in analysis of movements.

4.2 Different perspectives

In the analysis in Chapter 3, quarter to quarter movements between three aged care programs were examined. Another approach could involve taking all the people in a particular care setting (either at a particular time, or over a period) and seeing how their care arrangements have changed after a fixed period, or by a particular time. For example, we could look at all people who were using HACC services in the September quarter of 2002. We could then see what had changed by the June quarter of 2003; that is:

- how many people were still using HACC services
- how many people had moved to permanent residential aged care

- how many people had become recipients of a CACP
- how many people had used respite residential care in the intervening period
- how many people had ceased using HACC but were not using residential care or CACPs.

Note that identifying movements such as these will be somewhat less comprehensive when they involve HACC because of agency non-participation in HACC MDS (and a degree of inconsistent participation).

Although establishing the extent of movement between the various programs is important, identifying why some people change their care arrangements and others do not is perhaps of even more interest from a policy perspective. There are many statistical methods (for example, survival analysis) that can help identify factors affecting change in care arrangements, and having established links between programs, such analyses are limited only by the data available for each of the programs.

Appendix 1 Detailed validation tables

Table A1.1: Comparison of state of client residence recorded in source data sets for linked records: July–September 2002 HACC linked with CACPs April 2002 – March 2003

HACC client state of residence	CACP: state of client's contact address for ACAT								
	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Total
ACT	220	0	0	1	0	0	0	0	221
NSW	0	3,263	0	42	0	0	16	0	3,321
NT	1	0	107	1	0	0	2	0	111
QLD	0	15	1	2,725	2	1	16	0	2,760
SA	0	1	3	0	1,451	0	4	1	1,460
TAS	0	3	0	1	0	432	3	0	439
VIC	0	9	0	3	1	1	4,133	3	4,150
WA	1	2	0	0	0	0	2	1,478	1,483
Total	**222**	**3,293**	**111**	**2,773**	**1,454**	**434**	**4,176**	**1,482**	**13,945**

Notes

1. Table is based on links established using basic linking.
2. 152 linked records (1.1%) had missing data on at least one of the source data sets.

Source: AIHW analysis of linked data sets.

Table A1.2: Comparison of state of client residence recorded in source data sets for linked records: October–December 2002 HACC linked with CACPs April 2002 – March 2003

HACC client state of residence	CACP: state of client's contact address for ACAT								
	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Total
ACT	226	0	0	1	1	0	0	0	228
NSW	0	3,483	0	35	0	0	18	0	3,536
NT	0	0	94	0	1	0	0	0	95
QLD	0	23	0	2,591	3	0	10	3	2,630
SA	0	1	4	0	1,287	0	6	1	1,299
TAS	0	1	0	1	0	394	3	0	399
VIC	0	24	0	4	2	1	3,956	4	3,991
WA	1	3	0	0	0	0	3	1,363	1,370
Total	**227**	**3,535**	**98**	**2,632**	**1,294**	**395**	**3,996**	**1,371**	**13,548**

Notes

1. Table is based on links established using basic linking.
2. 157 linked records (1.1%) had missing data on at least one of the source data sets.

Source: AIHW analysis of linked data sets.

Table A1.3: Comparison of state of client residence recorded in source data sets for linked records: July–September 2002 HACC linked with RAC April 2002 – March 2003

HACC client state of residence	RAC: state of client's contact address for ACAT								
	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Total
ACT	301	16	0	1	0	1	1	1	321
NSW	23	6,582	0	229	12	3	73	5	6,927
NT	1	4	113	3	2	0	2	0	125
QLD	2	99	1	5,042	6	4	32	4	5,190
SA	1	16	3	8	3,114	0	20	1	3,163
TAS	0	4	0	2	2	1,016	7	1	1,032
VIC	2	69	0	26	11	7	7,097	10	7,222
WA	2	9	0	6	5	0	4	2,358	2,384
Total	**332**	**6,799**	**117**	**5,317**	**3,152**	**1,031**	**7,236**	**2,380**	**26,364**

Notes

1. Table is based on links established using basic linking.
2. 302 linked records (1.1%) had missing data on at least one of the source data sets.

Source: AIHW analysis of linked data sets.

Table A1.4: Comparison of state of client residence recorded in source data sets for linked records: October–December 2002 HACC linked with RAC April 2002 – March 2003

HACC client state of residence	RAC: state of client's contact address for ACAT								
	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Total
ACT	306	11	0	2	1	0	2	1	323
NSW	16	6,049	0	172	8	3	56	7	6,311
NT	1	3	80	1	1	0	0	0	86
QLD	2	89	1	4,330	5	2	33	8	4,470
SA	0	12	1	7	2,474	2	11	1	2,508
TAS	0	1	0	1	2	797	6	1	808
VIC	3	94	0	26	13	8	6,223	9	6,376
WA	2	8	0	5	6	2	7	1,906	1,936
Total	**330**	**6,267**	**82**	**4,544**	**2,510**	**814**	**6,338**	**1,933**	**22,818**

Notes

1. Table is based on links established using basic linking.
2. 296 linked records (1.3%) had missing data on at least one of the source data sets.

Source: AIHW analysis of linked data sets.

Table A1.5: Comparison of state of client residence recorded in source data sets for linked records: CACP linked with RAC, April 2002 – March 2003

CACP: state of client's contact address for ACAT	RAC: state of client's contact address for ACAT								
	ACT	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**	**Total**
ACT	133	5	0	0	0	0	1	0	139
NSW	17	3,154	0	35	2	4	14	1	3,227
NT	0	0	66	2	0	0	0	0	68
QLD	0	27	0	1,461	1	1	4	2	1,496
SA	1	2	0	3	758	0	5	0	769
TAS	0	0	0	0	0	197	1	0	198
VIC	2	26	0	8	2	1	2,272	5	2,316
WA	1	1	0	0	0	0	2	779	783
Total	**154**	**3,215**	**66**	**1,509**	**763**	**203**	**2,299**	**787**	**8,996**

Note: Table is based on links established using basic linking.

Source: AIHW analysis of linked data sets.

Table A1.6: Comparison of country of birth recorded in source data sets for linked records: July–September 2002 HACC linked with CACPs April 2002 – March 2003

	CACP country of birth										
HACC country of birth	**Oceania and Antarctica**	**NW Europe**	**S & W Europe**	**N Africa and ME**	**SE Asia**	**NE Asia**	**S and Central Asia**	**Americas**	**Sub-Saharan Africa**	**Australia**	**Total**
Oceania and Antarctica	91	0	1	0	0	0	0	0	0	16	108
NW Europe	2	1,444	12	2	3	0	8	3	3	144	1,621
S & W Europe	0	11	998	11	0	6	1	4	2	38	1,071
N Africa and ME	0	2	17	61	0	1	0	0	0	3	84
SE Asia	0	1	0	3	61	2	0	0	0	4	71
NE Asia	0	0	0	0	5	64	0	0	0	2	71
S and Central Asia	1	0	0	0	1	3	85	0	1	6	97
Americas	0	2	1	1	0	1	0	39	2	5	51
Sub-Saharan Africa	0	0	0	0	0	0	0	0	5	1	6
Australia	29	270	38	1	5	5	10	5	4	8,202	8,569
Total	**123**	**1,730**	**1,067**	**79**	**75**	**82**	**104**	**51**	**17**	**8,421**	**11,749**

Notes

1. Table is based on links established using basic linking.
2. 2,348 linked records (16.7%) had missing data on at least one of the source data sets.

Source: AIHW analysis of linked data sets.

Table A1.7: Comparison of country of birth recorded in source data sets for linked records: October–December 2002 HACC linked with CACPs April 2002 – March 2003

	CACP country of birth										
HACC country of birth	**Oceania and Antarctica**	**NW Europe**	**S & W Europe**	**N Africa and ME**	**SE Asia**	**NE Asia**	**S and Central Asia**	**Americas**	**Sub-Saharan Africa**	**Australia**	**Total**
Oceania and Antarctica	99	0	1	0	0	0	0	0	0	18	118
NW Europe	1	1,337	8	1	3	0	6	4	1	139	1,500
S & W Europe	0	12	1,000	14	0	5	1	2	1	39	1,074
N Africa and ME	0	3	10	60	0	1	0	0	0	5	79
SE Asia	0	1	0	3	63	2	0	0	0	4	73
NE Asia	0	1	0	0	5	63	0	0	0	3	72
S and Central Asia	1	1	0	1	1	2	89	0	2	4	101
Americas	1	2	1	1	0	0	0	48	0	7	60
Sub-Saharan Africa	0	0	0	0	0	0	0	0	6	1	7
Australia	29	268	33	6	3	3	5	5	3	8,007	8362
Total	**131**	**1,625**	**1,053**	**86**	**75**	**76**	**101**	**59**	**13**	**8,227**	**11,446**

Notes

1. Table is based on links established using basic linking.
2. 2,259 linked records (16.5%) had missing data on at least one of the source data sets.

Source: AIHW analysis of linked data sets.

Table A1.8: Comparison of country of birth recorded in source data sets for linked records: July–September 2002 HACC linked with RAC April 2002 – March 2003

	RAC country of birth										
HACC country of birth	**Oceania and Antarctica**	**NW Europe**	**S & W Europe**	**N Africa and ME**	**SE Asia**	**NE Asia**	**S and Central Asia**	**Americas**	**Sub-Saharan Africa**	**Australia**	**Total**
Oceania and Antarctica	168	4	1	0	0	0	0	1	0	30	204
NW Europe	9	3,091	32	7	10	0	7	4	1	218	3,379
S & W Europe	0	37	1,454	22	1	2	2	4	1	31	1,554
N Africa and ME	0	3	78	92	1	1	0	0	0	8	183
SE Asia	0	3	0	10	91	2	0	0	0	5	111
NE Asia	0	1	0	0	6	65	0	0	0	3	75
S and Central Asia	0	2	2	1	4	3	137	0	0	4	153
Americas	0	7	0	0	1	0	7	85	0	14	114
Sub-Saharan Africa	0	0	2	0	0	0	0	0	10	1	13
Australia	75	769	69	5	8	7	17	8	16	18,486	19,460
Total	**252**	**3,917**	**1,638**	**137**	**122**	**80**	**170**	**102**	**28**	**18,800**	**25,246**

Notes

1. Table is based on links established using basic linking.
2. 1,420 linked records (5.3%) had missing data on at least one of the source data sets.

Source: AIHW analysis of linked data sets.

Table A1.9: Comparison of country of birth recorded in source data sets for linked records: October–December 2002 HACC linked with RAC April 2002 – March 2003

	RAC country of birth										
HACC country of birth	**Oceania and Antarctica**	**NW Europe**	**S & W Europe**	**N Africa and ME**	**SE Asia**	**NE Asia**	**S and Central Asia**	**Americas**	**Sub-Saharan Africa**	**Australia**	**Total**
Oceania and Antarctica	148	3	1	0	0	0	0	1	0	20	173
NW Europe	8	2,632	18	7	5	0	5	7	2	205	2,889
S & W Europe	0	29	1,275	15	1	1	2	2	1	22	1,348
N Africa and ME	0	3	64	84	2	1	1	1	0	8	164
SE Asia	0	2	0	7	100	2	1	0	0	3	115
NE Asia	1	0	0	0	4	57	0	1	0	2	65
S and Central Asia	0	2	1	1	1	2	118	1	0	3	129
Americas	0	6	0	0	0	0	6	74	0	13	99
Sub-Saharan Africa	0	0	2	0	0	0	0	0	6	1	9
Australia	65	736	55	7	11	2	13	11	17	15,971	16,888
Total	**222**	**3,413**	**1,416**	**121**	**124**	**65**	**146**	**98**	**26**	**16,248**	**21,879**

Notes

1. Table is based on links established using basic linking.
2. 1,235 linked records (5.3%) had missing data on at least one of the source data sets.

Source: AIHW analysis of linked data sets.

Table A1.10: Comparison of country of birth recorded in source data sets for linked records: CACPs linked with RAC, April 2002 – March 2003

	RAC country of birth										
CACP country of birth	**Oceania and Antarctica**	**NW Europe**	**S & W Europe**	**N Africa and ME**	**SE Asia**	**NE Asia**	**S and Central Asia**	**Americas**	**Sub-Saharan Africa**	**Australia**	**Total**
Oceania and Antarctica	78	1	0	0	0	0	0	0	0	3	82
NW Europe	1	1,178	6	1	0	0	0	0	0	41	1,227
S & W Europe	0	10	565	1	1	1	1	1	0	3	583
N Africa and ME	0	0	3	35	0	0	0	0	0	0	38
SE Asia	0	0	1	0	49	1	0	0	0	1	52
NE Asia	0	0	3	0	0	56	0	0	0	0	59
S and Central Asia	0	0	0	0	4	0	71	0	0	0	75
Americas	0	0	0	0	0	0	0	30	0	1	31
Sub-Saharan Africa	0	0	0	0	0	0	0	0	27	0	27
Australia	8	91	24	0	1	1	8	4	2	5,622	5,761
Total	**87**	**1,280**	**602**	**37**	**55**	**59**	**80**	**35**	**29**	**5,671**	**7,935**

Notes

1. Table is based on links established using basic linking.
2. 1,061 linked records (11.8%) had missing data on at least one of the source data sets.

Source: AIHW analysis of linked data sets.

Table A1.11: Comparison of language spoken recorded in source data sets for linked records: July–September 2002 HACC linked with CACPs April 2002 – March 2003

HACC main language spoken at home	CACP preferred language										
	English	N European	S European	E European	SW Asian and N African	S Asian	S/E Asian	E Asian	Australian Indigenous	Other	Total
English	10,455	64	103	88	3	4	4	8	8	5	10,742
N European	81	18	1	5	0	0	0	0	0	0	105
S European	78	0	396	2	0	0	1	1	0	1	479
E European	92	3	24	171	5	0	0	0	0	1	296
SW Asian and N African	10	0	0	21	9	0	0	1	0	0	41
S Asian	3	0	1	1	4	2	0	1	0	2	14
S/E Asian	5	0	1	0	0	4	1	1	0	1	13
E Asian	4	0	0	1	0	0	2	2	0	0	9
Australian Indigenous	26	0	7	0	1	0	7	46	48	4	139
Other	1	0	0	3	0	0	0	0	0	0	4
Non-verbal	15	1	1	0	0	1	0	2	0	0	20
Total	**10,770**	**86**	**534**	**292**	**22**	**11**	**15**	**62**	**56**	**14**	**11,862**

Notes

1. Table is based on links established using basic linking.

2. 2,235 linked records (15.9%) had missing data on at least one of the source data sets.

Source: AIHW analysis of linked data sets.

Table A1.12: Comparison of language spoken recorded in source data sets for linked records: October–December 2002 HACC linked with CACPs April 2002 – March 2003

HACC main language spoken at home	CACP preferred language										
	English	N European	S European	En European	SW Asian and N African	S Asian	S/E Asian	E Asian	Australian Indigenous	Other	Total
English	10,149	54	125	86	6	3	2	6	8	3	10,442
N European	63	17	1	4	0	0	0	0	0	0	85
S European	82	0	388	3	1	0	1	1	0	0	476
E European	91	0	32	159	2	0	0	0	0	1	285
SW Asian and N African	9	0	0	17	12	0	0	1	0	0	39
S Asian	2	0	0	1	2	2	0	0	0	2	9
S/E Asian	4	0	1	0	0	2	1	1	0	1	10
E Asian	4	0	0	1	0	0	2	5	0	0	12
Australian Indigenous	24	0	5	1	1	0	9	44	54	6	144
Other	1	0	0	3	0	0	0	0	0	0	4
Non-verbal	19	0	1	0	0	1	1	0	0	1	23
Total	**10,448**	**71**	**553**	**275**	**24**	**8**	**16**	**58**	**62**	**14**	**11,529**

Notes

1. Table is based on links established using basic linking.
2. 2,176 linked records (15.9%) had missing data on at least one of the source data sets.

Source: AIHW analysis of linked data sets.

Table A1.13: Comparison of language spoken recorded in source data sets for linked records: July–September 2002 HACC linked with RAC April 2002 – March 2003

HACC main language spoken at home	RAC preferred language											
	English	N European	S European	E European	SW Asian and N African	S Asian	S/E Asian	E Asian	Australian Indigenous	Other	Non-verbal	Total
English	23,482	105	173	151	3	2	7	10	4	12	3	23,952
N European	185	70	3	13	1	0	0	1	0	1	0	274
S European	86	0	522	1	0	0	1	0	0	3	0	613
E European	141	6	34	211	3	0	0	0	0	5	0	400
SW Asian and N African	10	1	0	16	10	0	0	0	0	2	0	39
S Asian	4	0	1	0	2	2	0	2	0	0	0	11
S/E Asian	7	0	0	0	0	5	0	1	0	0	0	13
E Asian	7	1	2	2	0	0	6	8	0	1	0	27
Australian Indigenous	30	0	36	2	0	0	11	33	24	2	0	138
Other	1	0	0	7	0	0	0	0	0	0	0	8
Non-verbal	23	2	4	2	0	0	0	0	0	1	0	32
Total	**23,976**	**185**	**775**	**405**	**19**	**9**	**25**	**55**	**28**	**27**	**3**	**25,507**

Notes

1. Table is based on links established using basic linking.

2. 1,159 linked records (4.3%) had missing data on at least one of the source data sets.

Source: AIHW analysis of linked data sets.

Table A1.14: Comparison of language spoken recorded in source data sets for linked records: October–December 2002 HACC linked with RAC April 2002 – March 2003

HACC main language spoken at home	RAC preferred language											
	English	N European	S European	E European	SW Asian and N African	S Asian	S/E Asian	E Asian	Australian Indigenous	Other	Non-verbal	Total
English	20,365	106	143	147	3	1	6	6	7	9	2	20,795
N European	75	54	2	4	0	0	0	1	0	1	0	137
S European	74	0	453	0	0	0	0	0	0	4	0	531
E European	113	5	30	183	4	0	0	0	0	7	0	342
SW Asian and N African	9	1	0	14	10	0	0	0	0	1	0	35
S Asian	3	0	0	0	1	3	0	1	0	0	0	8
S/E Asian	7	0	0	0	0	2	1	1	0	0	0	11
E Asian	5	0	2	2	0	0	6	7	0	0	0	22
Australian Indigenous	26	0	29	2	0	1	12	32	20	3	0	125
Other	1	0	0	5	0	0	0	0	0	0	0	6
Non-verbal	24	2	2	3	0	0	1	1	0	0	0	33
Total	**20,702**	**168**	**661**	**360**	**18**	**7**	**26**	**49**	**27**	**25**	**2**	**22,045**

Notes

1. Table is based on links established using basic linking.

2. 1,069 linked records (4.6%) had missing data on at least one of the source data sets.

Source: AIHW analysis of linked data sets.

Table A1.15:Comparison of language spoken recorded in source data sets for linked records: CACPs linked with RAC, April 2002 – March 2003

	RAC preferred language											
CACP preferred language	**English**	**N European**	**S European**	**E European**	**SW Asian and N African**	**S Asian**	**S/E Asian**	**E Asian**	**Australian Indigenous**	**Other**	**Non-verbal**	**Total**
English	7,203	25	27	38	2	0	2	4	4	1	1	7,307
N European	23	45	0	2	0	0	0	0	0	0	0	70
S European	22	0	238	1	0	0	0	0	0	2	0	263
E European	30	3	2	134	0	0	0	0	0	0	0	169
SW Asian and N African	2	0	0	0	7	0	0	0	0	1	0	10
S Asian	1	0	0	0	0	3	0	0	0	0	0	4
S/E Asian	0	0	0	0	0	1	9	1	0	0	0	11
E Asian	2	0	0	0	0	0	1	35	0	1	0	39
Australian Indigenous	5	0	0	0	0	0	0	0	41	2	0	48
Other	4	1	1	0	0	1	1	2	1	1	0	12
Non-verbal	1	0	0	0	0	0	0	0	0	0	0	1
Total	**7,293**	**74**	**268**	**175**	**9**	**5**	**13**	**42**	**46**	**8**	**1**	**7,934**

Notes

1. Table is based on links established using basic linking.

2. 1,062 linked records (11.8%) had missing data on at least one of the source data sets.

Source: AIHW analysis of linked data sets.

Appendix 2 Linkage populations

HACC linkage populations

Table A2.1: HACC clients by age and sex, by quarter, 2002 (linkable records)

	Male	Female	All	Male	Female	All
July–September		**Number**			**Per cent**	
< 65	32,514	49,048	81,562	27.1	19.4	21.9
65–69	9,350	18,034	27,384	7.8	7.1	7.3
70–74	15,536	31,253	46,789	12.9	12.4	12.6
75–79	20,880	47,012	67,892	17.4	18.6	18.2
80–84	20,520	51,369	71,889	17.1	20.3	19.3
85–89	14,703	38,112	52,815	12.2	15.1	14.2
90–94	5,466	14,855	20,321	4.6	5.9	5.5
95+	1,089	2,999	4,088	0.9	1.2	1.1
Total	**120,058**	**252,682**	**372,740**	**100.0**	**100.0**	**100.0**
October–December		**Number**			**Per cent**	
< 65	33,571	50,984	84,555	26.7	19.3	21.7
65–69	9,899	19,101	29,000	7.9	7.2	7.4
70–74	16,341	32,878	49,219	13.0	12.4	12.6
75–79	22,072	48,918	70,990	17.6	18.5	18.2
80–84	21,837	54,212	76,049	17.4	20.5	19.5
85–89	15,189	39,673	54,862	12.1	15.0	14.1
90–94	5,673	15,711	21,384	4.5	5.9	5.5
95+	1,174	3,159	4,333	0.9	1.2	1.1
Total	**125,756**	**264,636**	**390,392**	**100.0**	**100.0**	**100.0**

Notes

1. Age is as at the end of the quarter.
2. Table excludes cases with poor SLK-581 linkage key data, including all 1 January birth dates.
3. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Source: AIHW analysis of HACC MDS.

Table A2.2: HACC clients not also receiving CACP services within the quarter by age and sex, by quarter, 2002 (linkable records for linking movement to CACPs)

	Male	Female	All	Male	Female	All
July–September		**Number**			**Per cent**	
< 65	31,950	47,969	79,919	27.3	19.6	22.1
65–69	8,908	17,279	26,187	7.6	7.1	7.2
70–74	14,787	29,781	44,568	12.6	12.2	12.3
75–79	20,230	44,935	65,165	17.3	18.3	18.0
80–84	20,124	50,068	70,192	17.2	20.4	19.4
85–89	14,331	36,937	51,268	12.3	15.1	14.2
90–94	5,527	14,948	20,475	4.7	6.1	5.7
95+	1,125	3,085	4,210	1.0	1.3	1.2
Total	**116,982**	**245,002**	**361,984**	**100.0**	**100.0**	**100.0**
October–December		**Number**			**Per cent**	
< 65	32,925	49,877	82,802	26.9	19.4	21.8
65–69	9,494	18,283	27,777	7.7	7.1	7.3
70–74	15,481	31,308	46,789	12.6	12.2	12.3
75–79	21,498	46,781	68,279	17.5	18.2	18.0
80–84	21,343	52,781	74,124	17.4	20.6	19.5
85–89	14,946	38,489	53,435	12.2	15.0	14.1
90–94	5,718	15,738	21,456	4.7	6.1	5.7
95+	1,220	3,314	4,534	1.0	1.3	1.2
Total	**122,625**	**256,571**	**379,196**	**100.0**	**100.0**	**100.0**

Notes

1. Age is as at the end of the following quarter.

2. Table excludes cases with poor SLK-581 linkage key data and all 1 January birth dates.

3. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Source: AIHW analysis of DoHA ACCMIS database.

Table A2.3: HACC clients not also receiving CACP services within the quarter by age and sex, by quarter, 2002 (linkable records for linking movement from CACPs)

	Male	Female	All	Male	Female	All
July–September		**Number**			**Per cent**	
< 65	32,281	48,689	80,970	27.6	19.9	22.4
65–69	9,143	17,696	26,839	7.8	7.2	7.4
70–74	15,145	30,524	45,669	12.9	12.5	12.6
75–79	20,337	45,643	65,980	17.4	18.6	18.2
80–84	19,845	49,490	69,335	17.0	20.2	19.2
85–89	14,090	36,197	50,287	12.0	14.8	13.9
90–94	5,117	13,952	19,069	4.4	5.7	5.3
95+	1,024	2,811	3,835	0.9	1.1	1.1
Total	**116,982**	**245,002**	**361,984**	**100.0**	**100.0**	**100.0**
October–December		**Number**			**Per cent**	
< 65	33,314	50,603	83,917	27.2	19.7	22.1
65–69	9,677	18,737	28,414	7.9	7.3	7.5
70–74	15,951	32,123	48,074	13.0	12.5	12.7
75–79	21,547	47,487	69,034	17.6	18.5	18.2
80–84	21,132	52,244	73,376	17.2	20.4	19.4
85–89	14,556	37,667	52,223	11.9	14.7	13.8
90–94	5,343	14,739	20,082	4.4	5.7	5.3
95+	1,105	2,971	4,076	0.9	1.2	1.1
Total	**122,625**	**256,571**	**379,196**	**100.0**	**100.0**	**100.0**

Notes

1. Age is as at the end of the quarter.

2. Table excludes cases with poor SLK-581 linkage key data and all 1 January birth dates.

3. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Source: AIHW analysis of DoHA ACCMIS database.

Table A2.4: HACC clients not in permanent RAC within the quarter by age and sex, by quarter, 2002 (linkable records for linking to RAC)

	Male	Female	All	Male	Female	All
July–September		**Number**			**Per cent**	
< 65	31,972	48,136	80,108	27.2	19.5	22.0
65–69	8,994	17,458	26,452	7.7	7.1	7.3
70–74	14,910	30,120	45,030	12.7	12.2	12.4
75–79	20,315	45,555	65,870	17.3	18.4	18.1
80–84	20,233	50,573	70,806	17.2	20.5	19.4
85–89	14,379	37,318	51,697	12.2	15.1	14.2
90–94	5,567	14,914	20,481	4.7	6.0	5.6
95+	1,122	3,019	4,141	1.0	1.2	1.1
Total	**117,492**	**247,093**	**364,585**	**100.0**	**100.0**	**100.0**
October–December		**Number**			**Per cent**	
< 65	32,940	50,040	82,980	26.8	19.3	21.7
65–69	9,583	18,478	28,061	7.8	7.1	7.3
70–74	15,570	31,693	47,263	12.7	12.2	12.4
75–79	21,563	47,381	68,944	17.5	18.3	18.1
80–84	21,439	53,378	74,817	17.4	20.6	19.6
85–89	14,953	38,865	53,818	12.2	15.0	14.1
90–94	5,760	15,757	21,517	4.7	6.1	5.6
95+	1,207	3,236	4,443	1.0	1.3	1.2
Total	**123,015**	**258,828**	**381,843**	**100.0**	**100.0**	**100.0**

Notes

1. Age is as at the end of the following quarter.

2. Table excludes cases with poor SLK-581 linkage key data and all 1 January birth dates.

3. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Source: AIHW analysis of DoHA ACCMIS database.

Table A2.5: HACC clients not in permanent RAC within the quarter by age and sex, by quarter, 2002 (linkable records for linking from RAC)

	Male	Female	All	Male	Female	All
July–September		**Number**			**Per cent**	
< 65	32,303	48,858	81,161	27.5	19.8	22.3
65–69	9,229	17,886	27,115	7.9	7.2	7.4
70–74	15,270	30,887	46,157	13.0	12.5	12.7
75–79	20,439	46,241	66,680	17.4	18.7	18.3
80–84	19,936	49,991	69,927	17.0	20.2	19.2
85–89	14,129	36,570	50,699	12.0	14.8	13.9
90–94	5,162	13,913	19,075	4.4	5.6	5.2
95+	1,024	2,747	3,771	0.9	1.1	1.0
Total	**117,492**	**247,093**	**364,585**	**100.0**	**100.0**	**100.0**
October–December		**Number**			**Per cent**	
< 65	33,330	50,773	84,103	27.1	19.6	22.0
65–69	9,760	18,939	28,699	7.9	7.3	7.5
70–74	16,055	32,520	48,575	13.1	12.6	12.7
75–79	21,601	48,095	69,696	17.6	18.6	18.3
80–84	21,235	52,821	74,056	17.3	20.4	19.4
85–89	14,558	38,037	52,595	11.8	14.7	13.8
90–94	5,384	14,738	20,122	4.4	5.7	5.3
95+	1,092	2,905	3,997	0.9	1.1	1.0
Total	**123,015**	**258,828**	**381,843**	**100.0**	**100.0**	**100.0**

Notes

1. Age is as at the end of the quarter.

2. Table excludes cases with poor SLK-581 linkage key data and all 1 January birth dates.

3. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Source: AIHW analysis of DoHA ACCMIS database.

Residential respite linkage populations

Table A2.6: People using residential respite by age and sex, by quarter, 2002 (linkable records for linking to HACC)

	Male	Female	All	Male	Female	All
July–September		**Number**			**Per cent**	
< 65	351	311	662	7.4	3.8	5.1
65–69	291	260	551	6.1	3.2	4.3
70–74	547	531	1,078	11.5	6.5	8.3
75–79	945	1,268	2,213	19.8	15.5	17.1
80–84	1,148	2,012	3,160	24.1	24.6	24.4
85–89	932	2,259	3,191	19.5	27.7	24.7
90–94	456	1,214	1,670	9.6	14.9	12.9
95+	103	308	411	2.2	3.8	3.2
Total	**4,773**	**8,163**	**12,936**	**100.0**	**100.0**	**100.0**
October–December		**Number**			**Per cent**	
< 65	370	349	719	7.7	4.3	5.6
65–69	293	259	552	6.1	3.2	4.3
70–74	554	556	1,110	11.6	6.9	8.7
75–79	954	1,198	2,152	19.9	14.9	16.8
80–84	1,162	2,001	3,163	24.2	24.9	24.7
85–89	935	2,224	3,159	19.5	27.7	24.6
90–94	429	1,148	1,577	9.0	14.3	12.3
95+	95	290	385	2.0	3.6	3.0
Total	**4,792**	**8,025**	**12,817**	**100.0**	**100.0**	**100.0**

Notes

1. Age is as at the end of the quarter.

2. Table excludes cases with poor SLK-581 linkage key data and all 1 January birth dates as these cannot be matched to HACC records.

3. Not all HACC providers submitted data for the HACC MDS; for the September and December HACC 2002 quarterly collections, 78% and 86% of HACC agencies submitted data, respectively.

Source: AIHW analysis of DoHA ACCMIS database.

Table A2.7: People using residential respite by age and sex, by quarter, 2002 (linkable records for linking to CACPs)

	Male	Female	All	Male	Female	All
July–September		**Number**			**Per cent**	
< 65	352	319	671	7.3	3.9	5.2
65–69	291	263	554	6.1	3.2	4.3
70–74	551	534	1,085	11.5	6.5	8.3
75–79	955	1,278	2,233	19.9	15.6	17.2
80–84	1,153	2,021	3,174	24.0	24.6	24.4
85–89	937	2,268	3,205	19.5	27.6	24.6
90–94	456	1,219	1,675	9.5	14.8	12.9
95+	104	310	414	2.2	3.8	3.2
Total	**4,799**	**8,212**	**13,011**	**100.0**	**100.0**	**100.0**
October–December		**Number**			**Per cent**	
< 65	370	352	722	7.7	4.4	5.6
65–69	295	261	556	6.1	3.2	4.3
70–74	560	558	1,118	11.6	6.9	8.7
75–79	958	1,207	2,165	19.9	15.0	16.8
80–84	1,168	2,008	3,176	24.3	24.9	24.7
85–89	938	2,235	3,173	19.5	27.7	24.6
90–94	429	1,150	1,579	8.9	14.3	12.3
95+	95	290	385	2.0	3.6	3.0
Total	**4,813**	**8,061**	**12,874**	**100.0**	**100.0**	**100.0**

Notes

1. Age is as at the end of the quarter.

2. Table excludes cases with poor SLK-581 linkage key data, including cases with 1st-of-decade birth dates.

Source: AIHW analysis of DoHA ACCMIS database.

CACP linkage populations

Table A2.8: CACP recipients by age and sex, by quarter, 2002 (linkable records for linking to RAC)

	Male	Female	All	Male	Female	All
July–September		**Number**			**Per cent**	
< 65	884	1,120	2,004	10.4	5.6	7.0
65–69	536	904	1,440	6.3	4.5	5.0
70–74	1,009	1,863	2,872	11.9	9.3	10.0
75–79	1,446	3,566	5,012	17.0	17.8	17.5
80–84	1,804	4,923	6,727	21.2	24.5	23.5
85–89	1,748	4,888	6,636	20.6	24.3	23.2
90–94	900	2,307	3,207	10.6	11.5	11.2
95+	173	511	684	2.0	2.5	2.4
Total	**8,500**	**20,082**	**28,582**	**100.0**	**100.0**	**100.0**
October–December		**Number**			**Per cent**	
< 65	881	1,127	2,008	10.5	5.6	7.0
65–69	569	936	1,505	6.8	4.6	5.3
70–74	978	1,906	2,884	11.6	9.5	10.1
75–79	1,437	3,543	4,980	17.1	17.6	17.4
80–84	1,815	4,946	6,761	21.6	24.5	23.7
85–89	1,676	4,873	6,549	19.9	24.2	22.9
90–94	871	2,308	3,179	10.4	11.5	11.1
95+	178	509	687	2.1	2.5	2.4
Total	**8,405**	**20,148**	**28,553**	**100.0**	**100.0**	**100.0**

Notes

1. Age is as at the end of the quarter.

2. Table excludes cases with poor SLK-581 linkage key data, including cases with 1st-of-decade birth dates.

Source: AIHW analysis of DoHA ACCMIS database.

Table A2.9: People starting on a CACP by age and sex, by quarter (linkable records for linking to HACC)

	Male	Female	All	Male	Female	All
October–December 2002		**Number**			**Per cent**	
< 65	101	118	219	9.6	4.9	6.3
65–69	71	129	200	6.8	5.3	5.8
70–74	109	252	361	10.4	10.4	10.4
75–79	211	430	641	20.1	17.8	18.5
80–84	252	620	872	24.0	25.7	25.2
85–89	206	560	766	19.6	23.2	22.1
90–94	90	253	343	8.6	10.5	9.9
95+	11	50	61	1.0	2.1	1.8
Total	**1,051**	**2,412**	**3,463**	**100.0**	**100.0**	**100.0**
January–March 2003		**Number**			**Per cent**	
< 65	109	132	241	9.9	5.6	7.0
65–69	71	124	195	6.5	5.3	5.7
70–74	128	239	367	11.6	10.2	10.7
75–79	208	431	639	18.9	18.4	18.6
80–84	235	628	863	21.4	26.9	25.1
85–89	236	503	739	21.5	21.5	21.5
90–94	94	245	339	8.6	10.5	9.9
95+	18	35	53	1.6	1.5	1.5
Total	**1,099**	**2,337**	**3,436**	**100.0**	**100.0**	**100.0**

Notes

1. Admitted CACP recipients include previous recipients starting on a new package.
2. Age is as at the end of the quarter.
3. Table excludes cases with poor SLK-581 linkage key data and all 1 January birth dates as these cannot be matched to HACC records.

Source: AIHW analysis of DoHA ACCMIS database.

Table A2.10: CACP recipients who separated in the quarter for reasons other than death, by quarter, 2002 (linkable records for linking to RAC)

	Male	Female	All	Male	Female	All
July–September		**Number**			**Per cent**	
< 65	64	61	125	7.3	3.1	4.4
65–69	32	56	88	3.6	2.8	3.1
70–74	101	128	229	11.5	6.4	8.0
75–79	149	337	486	17.0	17.0	17.0
80–84	182	486	668	20.8	24.5	23.3
85–89	213	524	737	24.3	26.4	25.7
90–94	113	313	426	12.9	15.8	14.9
95+	23	82	105	2.6	4.1	3.7
Total	**877**	**1,987**	**2,864**	**100.0**	**100.0**	**100.0**
October–December		**Number**			**Per cent**	
< 65	46	53	99	6.6	3.1	4.1
65–69	34	57	91	4.9	3.3	3.8
70–74	77	126	203	11.1	7.3	8.4
75–79	106	278	384	15.3	16.2	15.9
80–84	170	427	597	24.5	24.8	24.7
85–89	141	463	604	20.3	26.9	25.0
90–94	98	261	359	14.1	15.2	14.9
95+	21	56	77	3.0	3.3	3.2
Total	**693**	**1,721**	**2,414**	**100.0**	**100.0**	**100.0**

Notes

1. Reason for separation is sometimes recorded incorrectly. However, those CACPs identified as ceasing because of the death of the recipient were excluded from the analysis to provide a better baseline for measuring movement into residential aged care. Overall, 3,601 people separated from a CACP during July–September 2002, and 2,999 people separated from a CACP during October–December 2002.

2. Separating CACP recipients include people who may subsequently start on a new package.

3. Age is as at the end of the following quarter.

4. Table excludes cases with poor SLK-581 linkage key data, including cases with 1st-of-decade birth dates.

Source: AIHW analysis of DoHA ACCMIS database.

Table A2.11: CACP recipients who separated in the quarter for reasons other than death, by quarter, 2002 (linkable records for linking to HACC)

	Male	Female	All	Male	Female	All
April–June		**Number**			**Per cent**	
< 65	43	51	94	5.6	3.0	3.8
65–69	48	47	95	6.3	2.7	3.8
70–74	73	128	201	9.5	7.5	8.1
75–79	146	275	421	19.0	16.0	17.0
80–84	154	416	570	20.1	24.2	23.0
85–89	174	459	633	22.7	26.7	25.5
90–94	104	265	369	13.6	15.4	14.9
95+	25	75	100	3.3	4.4	4.0
Total	**767**	**1,716**	**2,483**	**100.0**	**100.0**	**100.0**
July–September		**Number**			**Per cent**	
< 65	63	61	124	7.2	3.1	4.4
65–69	32	53	85	3.7	2.7	3.0
70–74	100	126	226	11.5	6.4	7.9
75–79	147	336	483	16.9	17.0	17.0
80–84	181	485	666	20.8	24.5	23.4
85–89	212	522	734	24.3	26.4	25.8
90–94	113	311	424	13.0	15.7	14.9
95+	23	82	105	2.6	4.1	3.7
Total	**871**	**1,976**	**2,847**	**100.0**	**100.0**	**100.0**

Notes

1. Reason for separation is sometimes recorded incorrectly. However, those CACPs identified as ceasing because of the death of the recipient were excluded from the analysis to provide a better baseline for measuring movement into residential aged care. Overall, 3,123 people separated from a CACP during April–June 2002, and 3,577 people separated from a CACP during July–September 2002.

2. Separating CACP recipients include people who may subsequently start on a new package.

3. Age is as at the end of the following quarter.

4. Table excludes cases with poor SLK-581 linkage key data, including cases with 1 January birth dates.

Source: AIHW analysis of DoHA ACCMIS database.

Table A2.12: CACP recipients admitted in the quarter, by quarter, 2002 (linkable records for linking to RAC)

	Male	Female	All	Male	Female	All
July–September		**Number**			**Per cent**	
< 65	127	165	292	9.4	5.7	6.9
65–69	99	125	224	7.3	4.3	5.3
70–74	166	315	481	12.2	10.9	11.3
75–79	252	543	795	18.6	18.7	18.7
80–84	280	716	996	20.6	24.7	23.4
85–89	273	707	980	20.1	24.4	23.0
90–94	133	276	409	9.8	9.5	9.6
95+	26	53	79	1.9	1.8	1.9
Total	**1,356**	**2,900**	**4,256**	**100.0**	**100.0**	**100.0**
October–December		**Number**			**Per cent**	
< 65	102	120	222	9.6	4.9	6.3
65–69	74	132	206	7.0	5.4	5.9
70–74	110	256	366	10.4	10.5	10.5
75–79	213	438	651	20.1	18.0	18.6
80–84	252	625	877	23.7	25.6	25.1
85–89	208	562	770	19.6	23.1	22.0
90–94	92	253	345	8.7	10.4	9.9
95+	11	52	63	1.0	2.1	1.8
Total	**1,062**	**2,438**	**3,500**	**100.0**	**100.0**	**100.0**

Notes

1. Admitted CACP recipients include previous recipients starting on a new package.
2. Age is as at the end of the quarter.
3. Table excludes cases with poor SLK-581 linkage key data, including cases with 1st-of-decade birth dates.

Source: AIHW analysis of DoHA ACCMIS database.

Permanent residential aged care linkage populations

Table A2.13: People admitted into permanent RAC by age and sex, by quarter (linkable records for linking to HACC)

	Male	Female	All	Male	Female	All
October–December 2002		**Number**			**Per cent**	
< 65	373	275	648	6.8	2.7	4.1
65–69	262	220	482	4.8	2.1	3.1
70–74	564	560	1,124	10.3	5.5	7.1
75–79	981	1,430	2,411	17.9	13.9	15.3
80–84	1,294	2,586	3,880	23.7	25.2	24.6
85–89	1,212	2,857	4,069	22.2	27.8	25.8
90–94	618	1,851	2,469	11.3	18.0	15.7
95+	164	496	660	3.0	4.8	4.2
Total	**5,468**	**10,275**	**15,743**	**100.0**	**100.0**	**100.0**
January–March 2003		**Number**			**Per cent**	
< 65	328	239	567	6.5	2.5	3.9
65–69	261	209	470	5.1	2.2	3.2
70–74	495	546	1,041	9.8	5.7	7.1
75–79	908	1,368	2,276	17.9	14.3	15.6
80–84	1,271	2,340	3,611	25.0	24.5	24.7
85–89	1,089	2,683	3,772	21.5	28.1	25.8
90–94	578	1,671	2,249	11.4	17.5	15.4
95+	144	482	626	2.8	5.1	4.3
Total	**5,074**	**9,538**	**14,612**	**100.0**	**100.0**	**100.0**

Notes

1. Admitted permanent RAC clients include people moving between two RAC services. In 2002–03, 22% of all admissions into permanent RAC were the result of same-day or next-day transfers between permanent RAC.

2. Age is as at the end of the quarter.

3. Table excludes cases with poor SLK-581 linkage key data and all 1 January birth dates as these cannot be matched to HACC records.

Source: AIHW analysis of DoHA ACCMIS database.

Table A2.14: People admitted into permanent residential aged care during the quarter (linkable records for linking to CACPs)

	Male	Female	All	Male	Female	All
October–December 2002		**Number**			**Per cent**	
< 65	373	277	650	6.8	2.7	4.1
65–69	262	221	483	4.8	2.1	3.1
70–74	566	561	1,127	10.3	5.4	7.1
75–79	985	1,433	2,418	17.9	13.9	15.3
80–84	1,303	2,600	3,903	23.7	25.2	24.7
85–89	1,215	2,864	4,079	22.1	27.8	25.8
90–94	620	1,861	2,481	11.3	18.0	15.7
95+	164	499	663	3.0	4.8	4.2
Total	**5,488**	**10,316**	**15,804**	**100.0**	**100.0**	**100.0**
January–March 2003		**Number**			**Per cent**	
< 65	332	240	572	6.5	2.5	3.9
65–69	265	209	474	5.2	2.2	3.2
70–74	495	548	1,043	9.7	5.7	7.1
75–79	909	1,377	2,286	17.8	14.4	15.6
80–84	1,275	2,347	3,622	25.0	24.5	24.7
85–89	1,095	2,695	3,790	21.5	28.1	25.8
90–94	579	1,677	2,256	11.4	17.5	15.4
95+	148	484	632	2.9	5.1	4.3
Total	**5,098**	**9,577**	**14,675**	**100.0**	**100.0**	**100.0**

Notes

1. Admitted permanent RAC clients include people moving between two RAC services. In 2002–03, 22% of all admissions into permanent RAC were the result of same-day or next-day transfers between permanent RAC.

2. Age is as at the end of the quarter.

3. Table excludes cases with poor SLK-581 linkage key data, including cases with 1st-of-decade birth dates.

Source: AIHW analysis of DoHA ACCMIS database.

Table A2.15: Permanent RAC residents who separated in the quarter for reasons other than death, by quarter, 2002 (linkable records for linking to HACC)

	Male	Female	All	Male	Female	All
April–June		**Number**			**Per cent**	
< 65	132	86	218	8.0	2.5	4.3
65–69	70	73	143	4.2	2.1	2.8
70–74	168	180	348	10.1	5.2	6.8
75–79	269	405	674	16.2	11.8	13.2
80–84	390	727	1,117	23.5	21.2	22.0
85–89	335	977	1,312	20.2	28.5	25.8
90–94	219	691	910	13.2	20.2	17.9
95+	76	290	366	4.6	8.5	7.2
Total	**1,659**	**3,429**	**5,088**	**100.0**	**100.0**	**100.0**
July–September		**Number**			**Per cent**	
< 65	121	95	216	6.8	2.4	3.8
65–69	70	66	136	3.9	1.7	2.4
70–74	179	182	361	10.0	4.7	6.3
75–79	307	431	738	17.2	11.0	13.0
80–84	401	851	1,252	22.5	21.8	22.0
85–89	359	1,111	1,470	20.1	28.4	25.8
90–94	264	831	1,095	14.8	21.3	19.2
95+	82	342	424	4.6	8.7	7.4
Total	**1,783**	**3,909**	**5,692**	**100.0**	**100.0**	**100.0**

Notes

1. Reason for separation is sometimes recorded incorrectly. However, those RAC periods of residence identified as ceasing because of the death of the resident were excluded from the analysis to provide a better baseline for measuring movement into residential aged care. Overall, 14,245 people separated from a period of permanent residency during April–June 2002, and similarly 17,276 people separated during July–September 2002.

2. Separating permanent RAC clients include people moving between two RAC services. In 2002–03, 22% of all separations from permanent RAC were the result of same-day or next-day transfers between permanent RAC.

3. Age is as at the end of the following quarter.

4. Table excludes cases with poor SLK-581 linkage key data, including cases with 1 January birth dates.

Source: AIHW analysis of DoHA ACCMIS database.

Table A2.16: Permanent RAC residents who separated in the quarter for reasons other than death, 2002 (linkable records for linking to CACPs)

	Male	Female	All	Male	Female	All
April–June		**Number**			**Percent**	
< 65	132	86	218	7.9	2.5	4.3
65–69	70	73	143	4.2	2.1	2.8
70–74	168	181	349	10.1	5.3	6.8
75–79	271	409	680	16.2	11.9	13.3
80–84	392	729	1,121	23.5	21.1	21.9
85–89	340	981	1,321	20.4	28.5	25.8
90–94	221	697	918	13.2	20.2	17.9
95+	76	291	367	4.6	8.4	7.2
Total	**1,670**	**3,447**	**5,117**	**100.0**	**100.0**	**100.0**
July–September		**Number**			**Percent**	
< 65	121	96	217	6.8	2.4	3.8
65–69	70	66	136	3.9	1.7	2.4
70–74	181	182	363	10.1	4.6	6.3
75–79	309	435	744	17.3	11.1	13.0
80–84	403	856	1,259	22.5	21.8	22.0
85–89	360	1,115	1,475	20.1	28.4	25.8
90–94	264	835	1,099	14.7	21.3	19.2
95+	82	344	426	4.6	8.8	7.4
Total	**1,790**	**3,929**	**5,719**	**100.0**	**100.0**	**100.0**

Notes

1. Reason for separation is sometimes recorded incorrectly. However, those RAC periods of residence identified as ceasing because of the death of the resident were excluded from the analysis to provide a better baseline for measuring movement into residential aged care. Overall, 14,245 people separated from a period of permanent residency during April–June 2002, and similarly 17,276 people separated during July–September 2002.

2. Separating permanent RAC clients include people moving between two RAC services. In 2002–03, 22% of all separations from permanent RAC were the result of same-day or next-day transfers between permanent RAC.

3. Age is as at the end of the following quarter.

4. Table excludes cases with poor SLK-581 linkage key data, including cases with 1st of decade birth dates.

Source: AIHW analysis of DoHA ACCMIS database.

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