

# **Movement from hospital to residential aged care**

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# **Movement from hospital to residential aged care**

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# Preface

Every year in Australia almost 10% of the 1 million or so hospital discharges for older people are for people who then go into or return to residential aged care. Prior to this report, not only was the extent of this flow unknown but also little was known about why these people enter hospital, what health conditions they have, nor what happens to them after they move. It was not possible to follow individuals from their hospital discharge into residential care because the national hospital data were not linked to the residential care data.

During 2001 and 2002, the Australian Health Ministers' Advisory Council (AHMAC) Care of Older Australians Working Group supported the Australian Institute of Health and Welfare (AIHW) in trialling the linking of data in the National Hospital Morbidity Database with data collected by the Australian Department of Health and Ageing from residential aged care facilities. The AIHW method did not use the names of individuals or person identifiers to make the linkage as these are not available on both national data sets.

Between 2003 and 2005, the method was further tested and developed. In 2004–05, the Statistical Information Management Committee (SIMC) of the National Health Information Group assisted in funding a comparison between the AIHW method with a name-based linkage method using Western Australian data. The comparison, jointly undertaken by AIHW and the Health Information Linkage Branch in the Western Australian Department of Health, tested the accuracy and utility of the AIHW method. The comparison showed that the AIHW's method could be used to accurately link hospital and residential aged care data. The results of the comparison were published in *Comparing name-based and event-based strategies for data linkage: a study linking hospital and residential aged care data for Western Australia* (AIHW: Karmel & Rosman 2007).

In 2006–07, SIMC and AIHW jointly funded an investigation to see whether the AIHW method could address key policy issues associated with the movement from hospital care to residential aged care. This report is the outcome. It shows how the linked data can describe the characteristics of people moving from hospital to residential aged care and examine the factors that influence outcomes for people moving from hospital to residential care.

The AIHW receives national hospital separation data from the states and territories and the residential aged care data from the Commonwealth for national reporting purposes. The AIHW has a critical role in ensuring compatibility between data collections and consults widely with the states and territories to ensure compatible collection methods and standards that are acceptable to all jurisdictions. As a national institution, the AIHW is committed to better use of existing data to inform national policy and improve service delivery. Linking national data under a strong privacy and ethics regime is critical to that role.

I congratulate the authors on their innovative work in this important area.

Penny Allbon

November 2008

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The authors thank the members of project steering committee which provided guidance during the development of the reporting template and resulting publication. This committee consisted of representatives of the Department of Health and Ageing (as the owner of the residential aged care data set), of the states and territories (as owners of the hospital morbidity data), and of the Director of the AIHW, and a nominee from the AHMAC Care of Older Australians Working Group.

The authors also thank the Department of Health and Ageing for permission to use their residential aged care data for this project, and Peter Braun (AIHW), who prepared the residential aged care data for use in the project. Thanks also go to the jurisdictional data custodians for permission to use their hospital data, and to Katrina Burgess and Christina Barry (AIHW), who prepared the hospital data for use in this project. Rachel Aalders (AIHW) provided valuable comment on the draft.

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# Abbreviations

ACAT	Aged Care Assessment Team
ACCMIS	Aged and Community Care Management Information System
ACT	Australian Capital Territory
AHMAC	Australian Health Ministers' Advisory Council
AIHW	Australian Institute of Health and Welfare
COPD	chronic pulmonary obstructive disease
DOB	date of birth
EP	English proficiency
ICD-10-AM	International Classification of Diseases 10th revision Australian Modification, based on the World Health Organization's internationally accepted classification of diseases and related health conditions. NHMD data for 2001-02 uses edition 2 of the classification.
NDI	National Death Index
NHMD	National Hospital Morbidity Database
NSW	New South Wales
NT	Northern Territory
p	probability of result occurring by chance ( p = 0.05 equates to a 5% probability)
PPV	positive predictive value
Qld	Queensland
RAC	residential aged care
RCS	Resident Classification Scale
SA	South Australia
Tas	Tasmania
Vic	Victoria
WA	Western Australia
YOB	year of birth

# Symbols used in tables

–	nil or rounded to zero
..	not applicable
N	number
n.p.	not published

# Summary

## Background

The movement of people between acute hospital care and residential aged care (RAC) has long been recognised as an important issue, but existing national data sets provide only limited information on such movement. Over recent years the Australian Institute of Health and Welfare has developed and tested an event-based data linkage method to link national hospital morbidity data and residential aged care data, with the aim of improving national reporting on the acute care/aged care interface.

National data were linked for 2001–02 using this linkage method. The linked database provides a useful resource for investigating key policy issues, including:

- What is the extent of movement between the two sectors?
- Are older people staying too long in hospital before admission into residential aged care?
- What influences admission into residential aged care on discharge from hospital?
- What happens to people after admission into residential aged care on discharge from hospital?

This report presents the first comprehensive statistical results from the linked database looking into these issues.

## Movement from hospital to residential aged care

Across Australia during 2001–02 there were 948,000 discharges from hospital after stays lasting at least 1 night for people aged 65 years and over. Of these, an estimated 9% (82,500) were separations into RAC, of which just over one-third (30,400) were for people who were newly admitted and two-thirds (52,000) were for people already living in RAC. The remaining 51,400 discharges were for people who died in hospital.

In 2001–02, there were 99,900 admissions into RAC, of which 20,900 (21%) were for transfers within residential care. Among the non-transfer admissions, more older people were admitted for permanent care via hospitals (21,800) than from the community (16,600). For respite care, admissions from the community accounted for almost four times as many respite admissions as those from hospital (32,000 compared with 8,600). Of the 20,900 people who changed their care arrangements, 8,000 admissions were for people changing from respite to permanent care and 11,700 admissions involved permanent residents transferring between aged care facilities.

## Length of stay in hospital

People who returned to their home – either in the community or in residential care – after hospitalisation were highly likely to have left following acute care in hospital (93%), and were unlikely to have had more than one hospital episode related to their stay in hospital (around 10% of their hospital episodes started with an admission from within the hospital

sector). These people also tended to have short hospital stays, with a median length of 4 days for the final hospital episode before discharge for those returning to the community and 6 days for those returning to RAC.

On the other hand, people who were admitted into RAC on discharge from hospital were less likely to have been discharged straight from acute care in hospital, were more likely to have received rehabilitation or maintenance care, and were more likely to have started their last hospital episode with an admission from within the hospital system. For example, for people admitted into permanent care, 51% of episodes just prior to discharge from hospital were for acute care, 22% were for maintenance care and 11% were for rehabilitation. Furthermore, just over half of hospital episodes followed by admission into permanent care started with an admission from within the hospital sector.

People entering RAC had relatively long hospital episodes – with a median of 24 days for the final hospital episode prior to admission to permanent care and 14 days for those going to respite care.

Whether hospital stays prior to admission to residential care were unnecessarily long is difficult to gauge from current data (see discussion on refining the methods below). The most common principal diagnosis for people moving into permanent RAC was ‘Awaiting admission elsewhere’ (21%). This group had a median length of stay below that for all such transitions (20 days versus 24 days), but many may have had a longer stay in total due to transfers between care type or hospitals. The wait implied by such a diagnosis could have been caused by a number of factors, including requiring time for the patient and their family to decide on the necessity for residential care, the identification of available residential care suitable for the patient – both in terms of care needs and familial needs – and the time required to make the final choice.

## **Propensity to enter residential aged care**

Overall, an estimated 30,400 hospital discharges were for people who were admitted into RAC straight after leaving hospital and 814,300 were for people who returned to live in the community. The most significant predictors of entry into RAC rather than a return to the community from hospital were:

- length of stay in hospital (longer stays increased the probability of entering RAC)
- principal and additional diagnoses – in particular, diagnoses of ‘Awaiting admission elsewhere’ and ‘Dementia and related disorders’ increased the probability of entering RAC
- age (older age increased the probability of entering RAC)
- mode of hospital admission for exiting episode (admission from within the hospital system increased the probability of entering RAC)
- care type prior to hospital discharge (acute and rehabilitative care were associated with lower probabilities)
- marital status (being widowed or single increased the probability of entering RAC)
- English proficiency group (high English proficiency was associated with higher probabilities).

The most significant factors associated with admission into permanent rather than respite RAC from hospital were: receiving palliative or maintenance care, or geriatric evaluation and

management prior to hospital discharge; longer stays in hospital, a principal diagnosis of stroke, 'Awaiting admission elsewhere' or dementia; living in a major city and the state or territory of hospital admission. These last two indicate that regional aged care service provision and/or practices influenced the outcome.

## **Use of respite care**

Overall, admission to residential care from hospital was about two and one half times as likely to be for permanent care as for respite care (a ratio of permanent to respite admissions from hospital of 2.6 to 1). However, this varied with region. Admissions in Tasmania and Victoria were more likely to be for permanent care than in other jurisdictions (ratios of permanent to respite admissions of 7.5 to 1 and 4.5 to 1, respectively) while the ratio of permanent to respite admissions was lowest in the two territories (under 1.5 to 1). Across all regions examined, transitions from hospital for people from remote and very remote regions had the lowest permanent to respite admission ratio, with a fairly even split between permanent and respite admissions.

Examination of outcomes for people who were admitted into respite care from hospital showed that, in 2001–02, residential respite care was being used as transition care by people leaving hospital. Over one-half of people who moved from hospital to respite care had returned to live in the community within 12 weeks, while just 1% had transferred to permanent care, 6% had died in care, 11% had been discharged to hospital and 23% remained in respite care. For people admitted into respite care, the likelihood of a successful return to the community was greater for those admitted to low-level care than for those admitted to high-level care.

## **Survival following admission to permanent residential aged care**

Once admitted into permanent RAC, few people leave to return to living in the community. Consequently, it is of interest to examine how long people survive once admitted to permanent care. Using survival analysis it is estimated that, for 2001–02, one-quarter of people admitted into permanent RAC died within just over 7 months of entering RAC and one-half died within 14 months. Two-fifths of people were still alive after 3 years. The most significant variable for predicting survival time after RAC admission was level of care needs on admission to RAC, followed by age, sex and whether the person was admitted into RAC from hospital. In particular, people admitted to RAC from hospital had lower expected survival times than others: one-quarter of people admitted from hospital were expected to die within 4 months of admission compared to within just over 7 months for all people admitted into permanent RAC.

The influence of health conditions on survival was examined by considering the survival of people admitted to permanent RAC from hospital. As for all people entering permanent RAC, the most significant variable for predicting survival time for people admitted from hospital was level of care needs on admission to RAC. However, health conditions were also influential, with both principal and additional hospital diagnoses affecting survival times.

## People with selected health conditions

Outcomes for people following hospital discharge were looked at for people who had a diagnosis of dementia or stroke reported while in hospital, or who were in hospital as the result of injury due to a fall. The first of these conditions provides an example of a chronic and increasingly debilitating disease, while the second and third illustrate conditions which begin with an acute event that can affect functioning.

The three selected conditions were individually reported in 2–3% of hospital episodes which ended with the patient returning to the community. In contrast, dementia was reported for 36% of hospital episodes that ended with admission to permanent care and stroke was reported for 13%. The prevalence of these conditions was less among discharges to respite care (22% for dementia and 5% for stroke). On the other hand, hospitalisation due to injury and a fall was more common among people who entered respite rather than permanent care after hospital (in 9% and 7% of such moves, respectively).

The prevalence of stroke among people returning to permanent care after hospital was similar to that among those who returned to the community. However, the prevalence of dementia was much higher, with 26% of hospital episodes for those returning to care reporting a diagnosis of dementia (compared with 3% for those returning to the community). Hospitalisation due to injury and a fall was most common among people who were returning to residential care (10%).

The relative use of permanent and respite care among people who were admitted to residential care after hospital was different for the three conditions. A diagnosis of either dementia or stroke was associated with greater use of permanent care, with permanent to respite admission ratios of 4.2 to 1 and 6.4 to 1, respectively. People who had been in hospital because of a fall were more likely than others to be admitted into respite care, with one third of their admissions being for respite care (admission ratio of 2 permanent to 1 respite).

## Refining the methods

The analyses in this report provide considerable insight into the hospital/aged care interface. With data developments in several areas, the flexibility and accuracy of analyses from linked hospital and residential aged care data could be further improved:

- Linking contiguous hospital episodes for people to obtain whole-of-stay hospital data. This would allow better analysis of both hospital care and length of stay and would enhance the modelling of propensity to enter residential care. Methods similar to those used to link the hospital and RAC data for this study could be suitable and should be investigated.
- Including mortality data. Linking residential care data with national mortality data would both allow better identification of death among this cohort and result in availability of cause of death data for analyses. Inclusion of this data would improve the accuracy of survival analyses. Linking national hospital and mortality data is not generally feasible due to data limitations.
- Linking hospital and RAC data to identify moves from residential care into hospital. Methods very like those used to identify moves from hospital into RAC for this study could be used. This would allow bi-directional analyses, and would lead to a fuller picture of the interactions between hospitals and RAC.