AROC Information Series

2019 2

THE IMPACT OF DEMENTIA ON INPATIENT REHABILITATION OUTCOMES

QUESTION

For those rehabilitation inpatients with a recorded comorbidity of dementia:

1. Has the proportion of patients changed over time?
2. Does rehabilitation improve the patient's level of functioning?
3. Do patients return to their pre-impairment place of accommodation after rehabilitation?

DATA USED: patients aged 65 years or older, discharged 1 January 2014 to 31 December 2018 and reported in the AROC adult inpatient rehabilitation dataset.

ANSWER

- **The proportion of patients with a recorded comorbidity of dementia participating in inpatient rehabilitation programs has not changed over the last 5 years and is higher than the national rates in Australia and New Zealand.**
- **Patients with a comorbidity of dementia recorded start with a lower FIM motor admission score and make similar, although slightly lower, functional motor gains when compared to patients without dementia recorded.**
- **Most patients with a comorbidity of dementia recorded return to their pre-impairment place of accommodation after completing their rehabilitation program.**

Suggested acknowledgement:

The impact of dementia on inpatient rehabilitation outcomes. AROC Information Series No. 2 (2019). Australasian Rehabilitation Outcomes Centre.

Background

Dementia is an umbrella term for a group of cognitive, life-limiting symptoms that progressively damage the brain, often leading to a gradual decline in a person's memory, function and behaviour. There are many different forms of dementia and each has its own causes. The most common type of dementia is Alzheimer's disease, affecting up to 70% of all people with dementia[1]. Dementia is a global issue.

In 2019, an estimated 447,115 Australians[2] and approximately 70,000 [3] New Zealanders were living with dementia. While dementia is not caused by age it does primarily affect older people, with up to 10 percent of people over 65 and up to 30 percent over the age of 85 years of age having a diagnosis of dementia.

A number of recent studies have shown that the presence of dementia does not preclude the ability to make functional gains during rehabilitation [5-8], for example, older individuals (aged 65 years and older) with dementia can benefit from rehabilitation activities following a hip fracture. Those patients participating in rehabilitation have been shown to achieve significant motor functional gain at discharge compared to admission, although the gain is less than individuals without dementia.

The AROC dataset includes comorbidities, defined as pre-existing illness/impairments, not part of the principal presenting condition, which impact on the rehabilitation process. Dementia is one such comorbidity. AROC uses the Functional Independence Measure (FIM) as a tool to measure functional change which is a key outcome in rehabilitation.

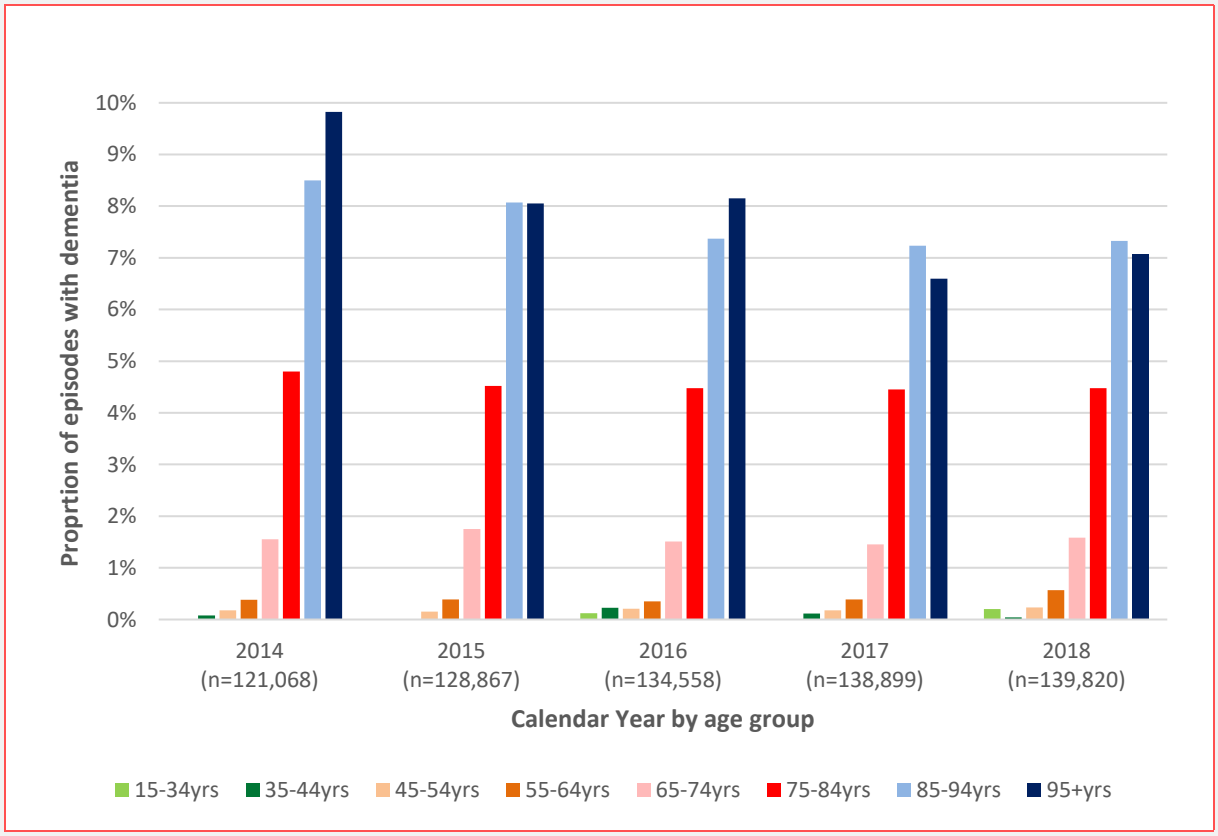
Has the proportion of patients changed over time?

The number of people in the general population being diagnosed with dementia is increasing every year and the number of episodes reported to AROC has increased every year. In 2016, the national prevalence rate of dementia was 1.7% in Australia and 1.3% in New Zealand. Overall in the AROC data, the proportion of rehabilitation inpatients with a comorbidity of dementia recorded as impacting their rehabilitation program, has been consistent at around 4% over the past 5 years. The majority of inpatient episodes in the AROC dataset are for people aged 65 years and older and this may explain the higher reported proportion in the AROC data compared to the general population.

The rates of dementia reported in the data varies by the reason for rehabilitation. The highest proportions were reported for orthopaedic fractures (7%), soft tissue injuries (7%) and reconditioning episodes (6%). The lowest rates were found for those receiving inpatient rehabilitation as a result of a spinal cord injury or major multi-trauma (1% each). The higher rates of dementia recorded in orthopaedic fractures, soft tissue injuries and reconditioning episodes correspond with a higher average age of the patients with these impairments; 77, 79 and 78 years respectively, whilst the average age for spinal cord injuries was 55 years and major multi-trauma was 49 years.

As shown in **Figure 1**, the age groups from 75-84 years onwards have the largest proportion of episodes reporting a comorbidity of dementia. In the general population it is these age groups that have the highest rates of dementia [4].

Figure 1 Proportion of patients reporting a comorbidity of dementia by age group and year.

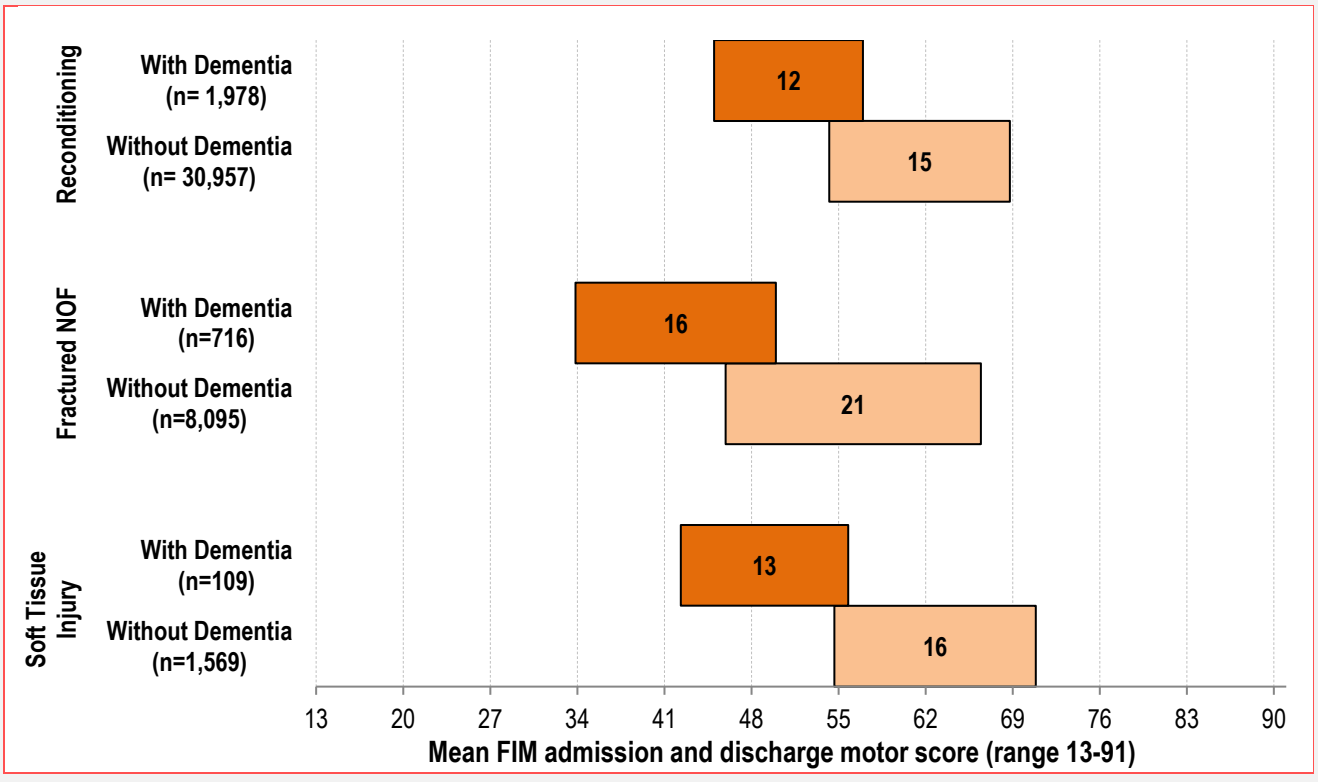


Does rehabilitation improve the patient's level of functioning?

The greatest functional improvement in patients with a recorded comorbidity of dementia, aged 65 years and older, is in motor function. There was no difference in cognition function achieved between those patients with dementia recorded and those without dementia recorded. Figure 2 shows the three impairments with the highest proportions of patients aged 65 years and over with a reported comorbidity of dementia in 2018.

Overall patients with a comorbidity of dementia recorded start with a lower FIM motor admission score and make similar, although slightly lower, functional motor gains when compared to patients without dementia recorded. Patients with a reported comorbidity of dementia receiving rehabilitation for a fractured NOF make the least functional motor gain compared to patients without a reported comorbidity of dementia. FIM motor discharge scores for patients with dementia recorded are only a few points higher than the FIM motor admission score of the patients without dementia recorded. It should be noted that patients with dementia as a comorbidity recorded achieved these motor functional gains despite a length of stay two days less than expected for their casemix.

Figure 2 Comparison of FIM Motor change for patients aged 65+ years 2018.



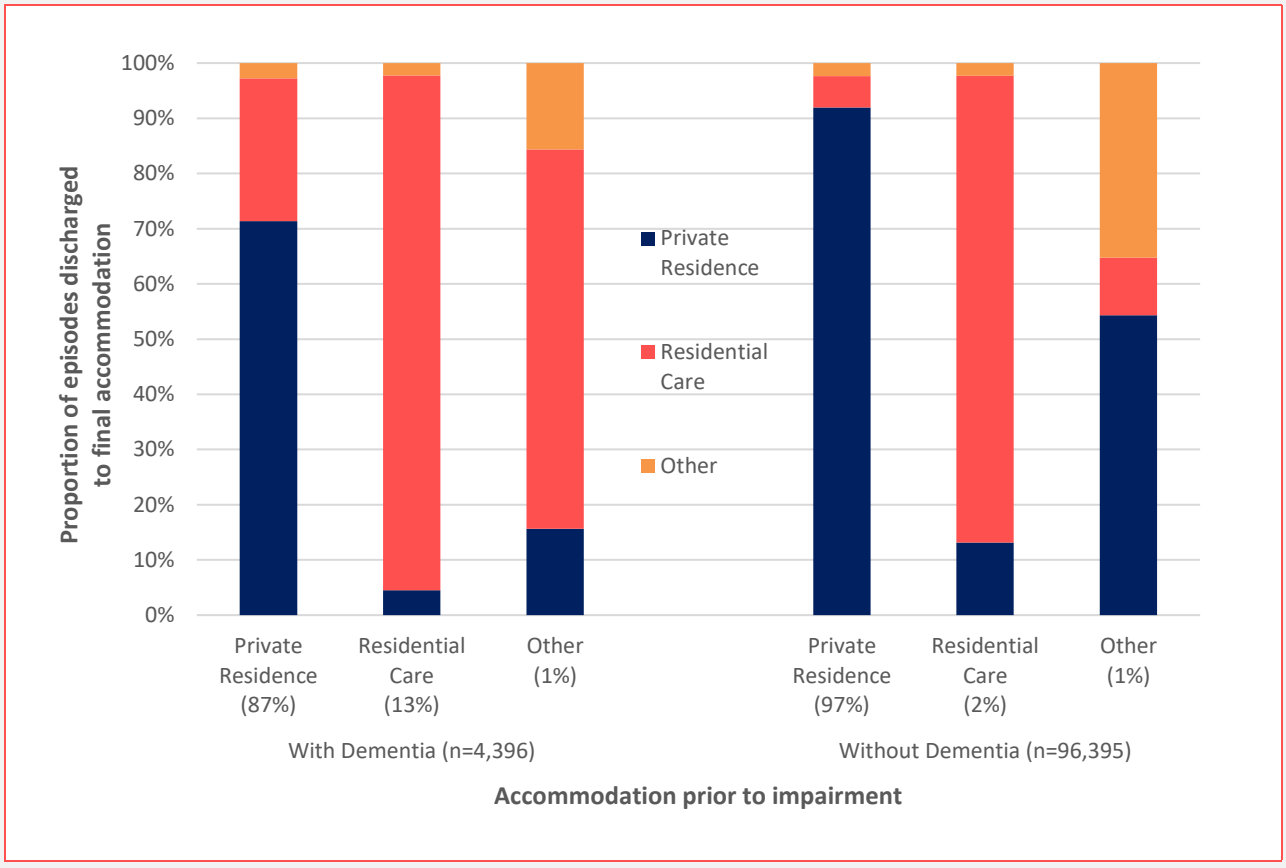
Do patients return to their pre-impairment place of accommodation after rehabilitation?

Most patients aged 65 years and over admitted to inpatient rehabilitation in 2018, came from a private residence - 87% of patients with a recorded comorbidity of dementia and 97% of patients without dementia recorded. Patients with dementia recorded were more likely to have been admitted from residential aged care (13% versus 2% of patients without dementia recorded). 74% of patients with dementia recorded and 91% of patients without dementia recorded returned to their prior accommodation.

Figure 3 shows final accommodation on discharge from inpatient rehabilitation based on pre-impairment accommodation. Patients with a recorded comorbidity of dementia are on the left and patients without dementia recorded are on the right side of the figure.

Most patients coming from a private residence returned to a private residence, however those with dementia recorded were more likely to be discharged to residential aged care (26% versus 6% of patients without dementia recorded). Overall, patients with comorbidity of dementia recorded were more likely to be discharged to residential aged care (35%) than those without dementia recorded (8%).

Figure 3 Accommodation after rehabilitation for patients aged 65+ years in 2018



Further reading:

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