

# Transition2Sub-acute project

## Snapshot of stroke and fractured neck of femur activity data

A partnership has been established between a group of allied health professionals from across the central and north-west belt of Queensland to improve the patient's sub-acute journey, particularly for those patients from rural and remote communities, and expedite care close to home as soon as possible.

As a component of this project we used the Queensland Hospital Admitted Patient Data Collection to explore patterns of sub-acute care across the state using two sub-acute tracer conditions: cerebrovascular accident (CVA) and fractured neck of femur (NOF).

The assumption was that these two conditions were highly representative of sub-acute care and therefore indicative of sub-acute services provided within Queensland public inpatient services.

Data was defined as:

### CVA patients:

- Acute hospitalisation: ICD-10-AM Principal diagnosis I63, I60, I61, I64
- Sub-acute hospitalisation: ICD-10-AM Principal or other diagnosis I63, I60, I61, I64

### Fractured Neck of Femur patients:

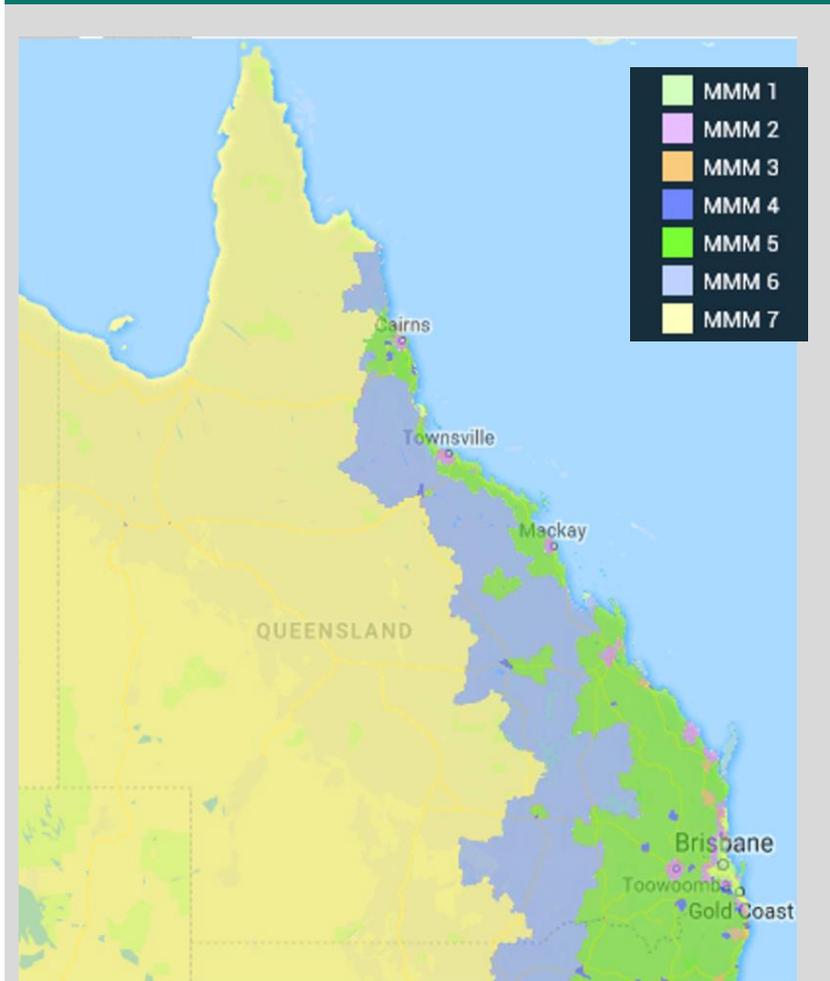
- Acute hospitalisation: ICD-10-AM Principal diagnosis S72.0, S72.1, S72.2
- Sub-acute hospitalisation: ICD-10-AM Principal or other diagnosis S72

This snapshot looks at the following relationships for these two tracer conditions, using the Modified Monash Model (MMM) and data from July 2014-June 2017:

- Length of stay and rurality of facilities
- Effect of rurality on access to services
- Receiving sub-acute care close to home

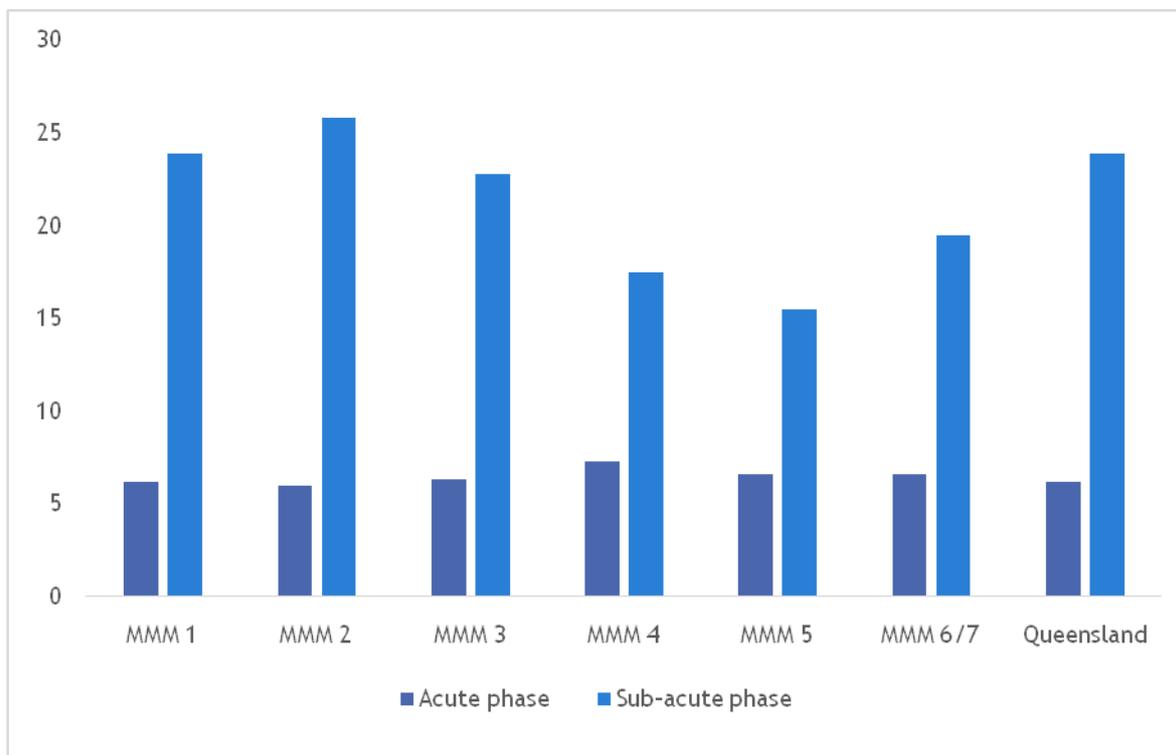
Overall, findings suggest that there is a relationship between access to sub-acute care for CVA patients and rurality, but not such a clear relationship for patients presenting with a fractured NOF. Stroke patients are less likely to access sub-acute care with increasing rurality. The data also shows that patients from remote communities who have sustained a fractured NOF or CVA are less likely to finish their sub-acute care close to home.

### Map of Queensland with classification using the Modified Monash Model

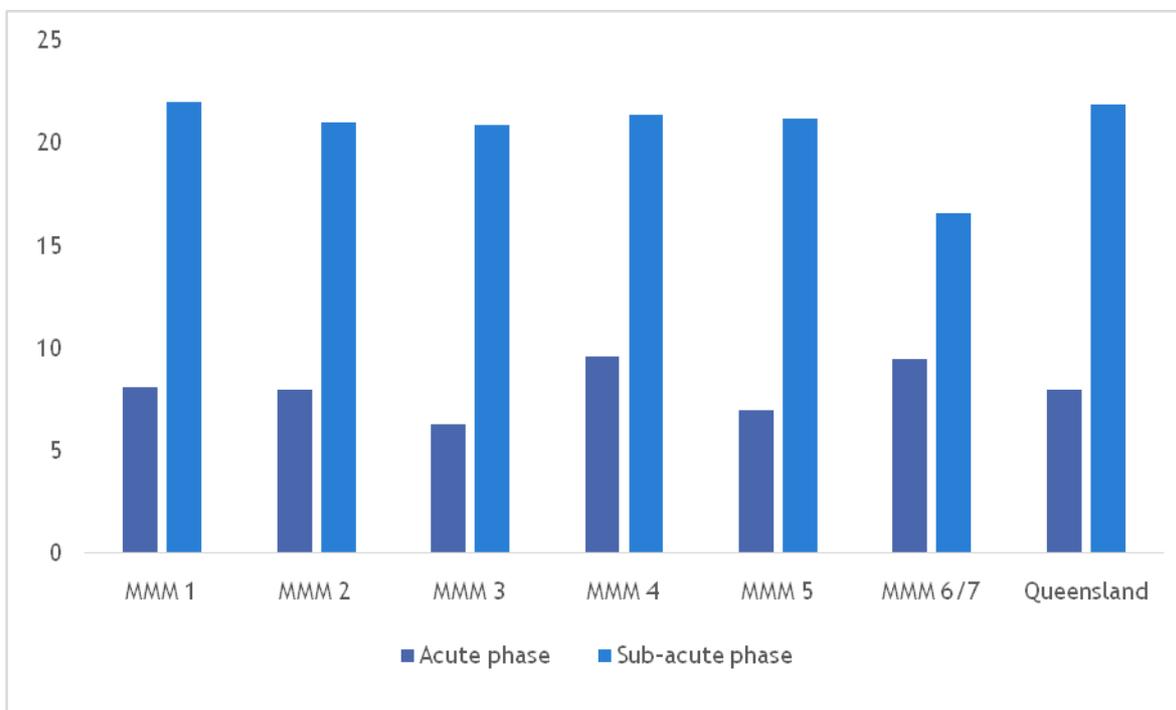


## 1. Length of stay and rurality of facility

### Median length of stay (days) for acute and sub-acute care for CVA by remoteness of facility



### Median length of stay (days) for acute and sub-acute care for fractured NOF by remoteness of facility



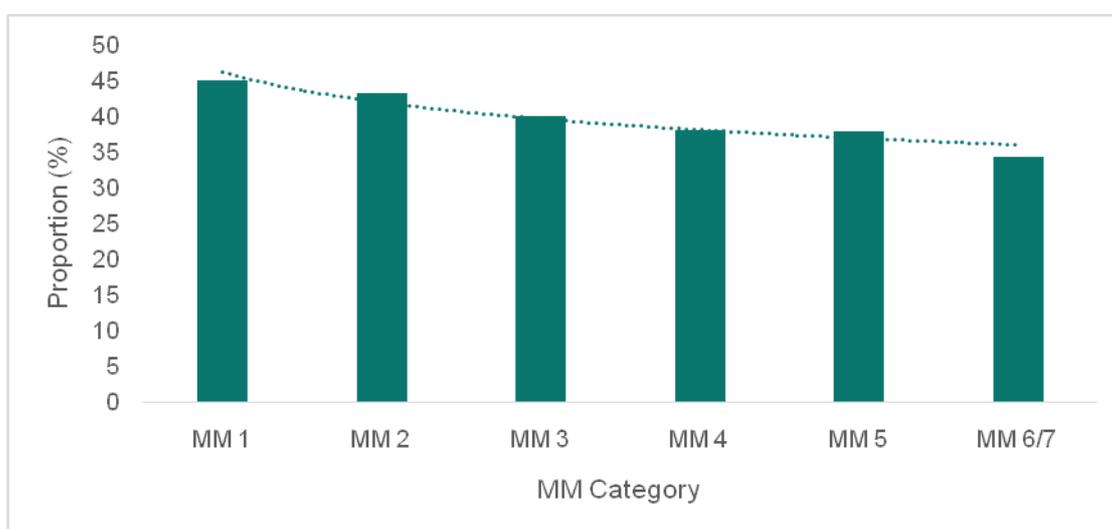
Source: QueenslandHospital Admitted Patient Data Collection, 2014-2017, residents aged 55 years and older

The data indicates a level of predictability for acute length of stay for CVA patients regardless of the rurality of the facility, which is likely due to adherence to the National Stroke Guidelines<sup>1</sup>. The acute length of stay for fractured NOF patients was more variable across all MM categories, which may be due to the reported variation in how hip fractures are managed across Australian and New Zealand health facilities<sup>2</sup>.

For patients presenting with CVA, the sub-acute length of stay decreased with increasing remoteness of the facility up to MM category 5, and then increased for remote and very remote areas (MM 6/7). This is likely to be due to small numbers of patients admitted over the 3-year period. In comparison the sub-acute length of stay for fractured NOF remained fairly constant, except for in remote and very remote locations where again this is likely to be due to a small number of patients.

## 2. The effect of rurality on access to sub-acute care

### Proportion (%) of acute to sub-acute CVA events by remoteness of residence



### Proportion (%) of acute to sub-acute fractured NOF events by remoteness of residence



Source: Queensland Hospital Admitted Patient Data Collection, 2014-2017, residents aged 55 years and older

<sup>1</sup> Stroke Foundation. Clinical Guidelines for Stroke management 2017

<sup>2</sup> Australian and New Zealand Hip Fracture Registry (ANZHFR) Steering Group. Australian and New Zealand Guideline for Hip Fracture Care: Improving Outcomes in Hip Fracture Management of Adults. Sydney: Australian and New Zealand Hip Fracture Registry Steering Group; 2014.

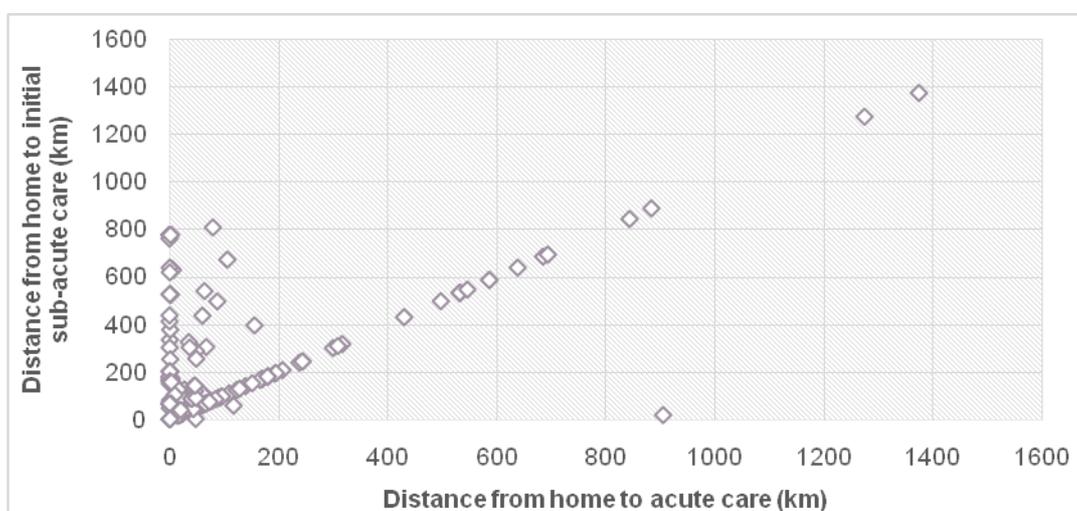
Overall, less than half (43 per cent) of the patients who were admitted for an acute CVA event and 44 per cent of patients with an acute fractured NOF event received sub-acute care. The mortality rates for both CVA and fractured NOF patients post event, will account for some of the variation between the proportion of acute patients who then go on to have sub-acute care.<sup>3,4</sup>

The proportion of fractured NOF patients who received sub-acute care remained fairly constant with increasing remoteness of residence whereas patients who received sub-acute care following an acute CVA event decreased with increasing remoteness of residence.

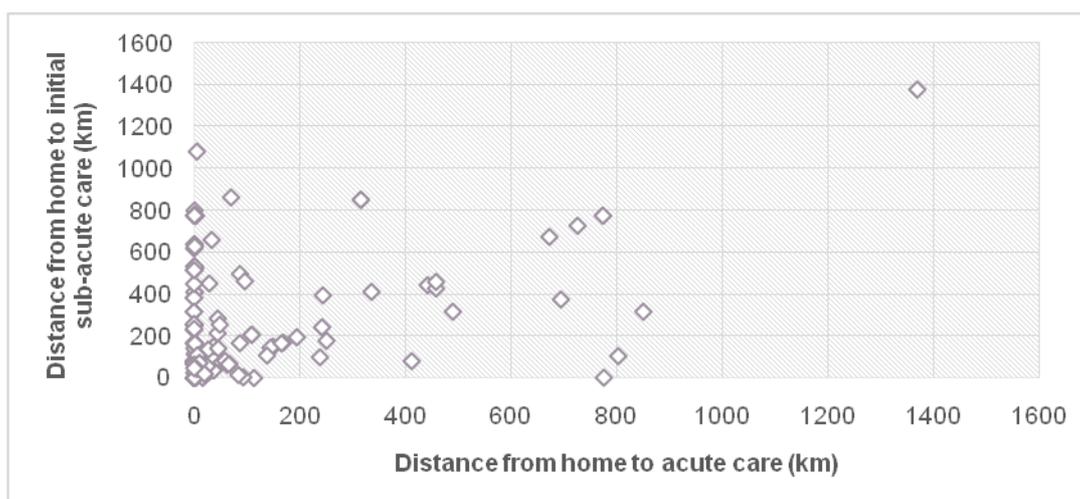
The data suggests that there is an effect of rurality on patients with CVA accessing sub-acute but not on patients with fractured NOF.

### 3. Receiving sub-acute care close to home

#### Distance from home to starting acute care vs distance from home to starting sub-acute care for CVA patients



#### Distance from home to starting acute care vs distance from home to starting sub-acute care for fractured NOF patients



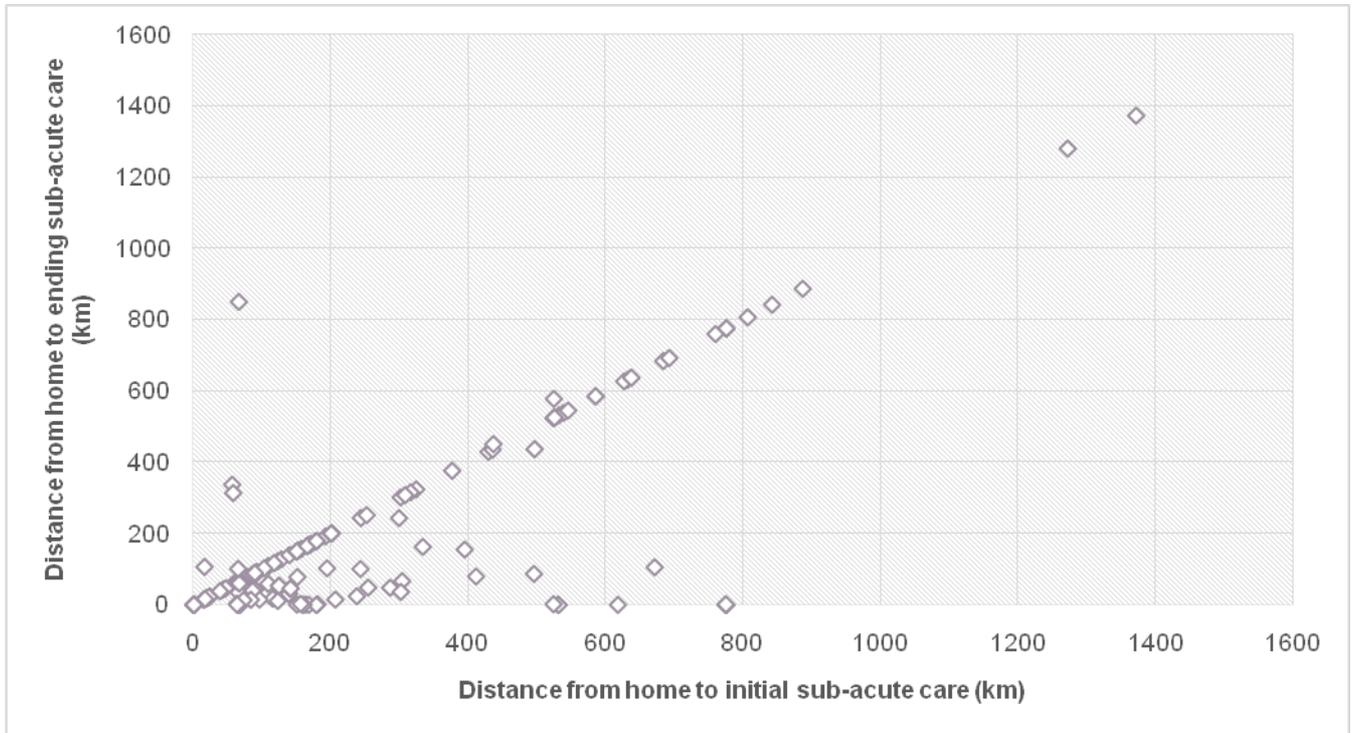
Source: Queensland Hospital Admitted Patient Data Collection, 2014-2017, remote residents aged 55 years and older

<sup>3</sup>Grigoryan, K. V., Javedan, H., & Rudolph, J. L. (2014). Orthogeriatric care models and outcomes in hip fracture patients: a systematic review and meta-analysis. *Journal of orthopaedic trauma*, 28(3), e49-55.

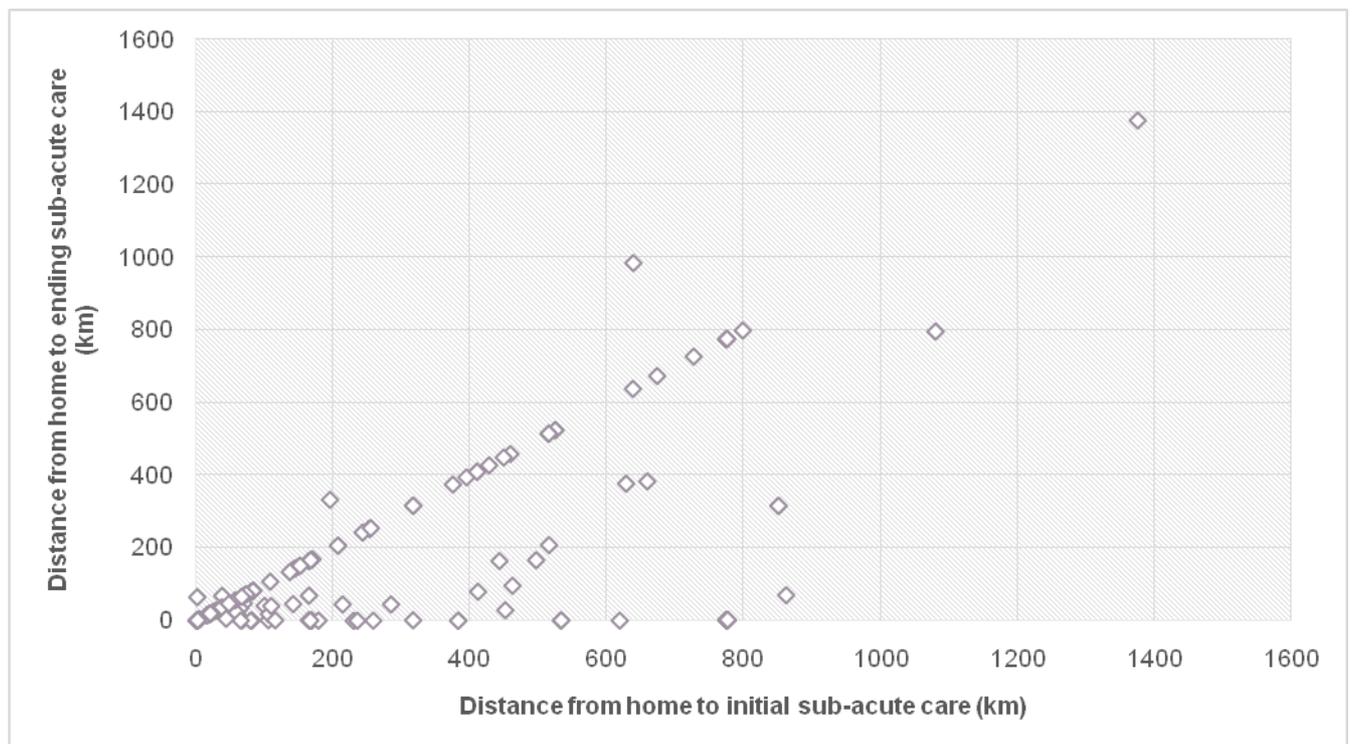
<sup>4</sup>Australian Institute of Health and Welfare 2013. *Stroke and its management in Australia: an update*. Cardiovascular disease series no. 37. Cat. no. CVD 61. Canberra: AIHW.

More than half (55 per cent CVA and 60 per cent fractured NOF) patients who live remotely started their sub-acute care further from home when compared to where they started their acute care.

**Distance from home to starting sub-acute care vs distance from home to ending sub-acute care for CVA patients**



**Distance from home to starting sub-acute care vs distance from home to ending sub-acute care for fractured NOF patients**



Source: Queensland Hospital Admitted Patient Data Collection, 2014-2017, remote residents aged 55 years and older

More than half (60 per cent CVA and 59 per cent fractured NOF) of patients who live remotely started and finished sub-acute care in the same location. Just over 30 per cent of CVA and 40 per cent of fractured NOF patients living remotely finished their sub-acute care closer to home. Given that a key aim of the project is to expedite a person's sub-acute care closer to home, as well documented in the literature particularly for patients post stroke, we anticipate that these findings will change over the course of the project. <sup>56</sup>

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<sup>5</sup>Tistad M, von Koch L (2015) Usual Clinical Practice for Early Supported Discharge after Stroke with Continued Rehabilitation at Home: An Observational Comparative Study. PLoS ONE 10(7): e0133536.

<sup>6</sup>Langhorne P, Baylan S. Early supported discharge services for people with acute stroke. Cochrane Database of Systematic Reviews 2017, Issue 7. Art. No.: CD000443.