
Transdisciplinary Stroke Service

Initiative Type

Model of Care

Status

Close

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<http://staging.clinicalexcellence.qld.gov.au/improvement-exchange/transdisciplinary-stroke-service>

Summary

The project reviewed the impact of implementing a transdisciplinary service in the Acute Stroke Unit (Toowoomba Hospital) on patient and service outcomes by comparing Short Stay Stroke Service (SSSS) with the standard multidisciplinary model of care.

Key dates

Jul 2017

Jun 2019

Implementation sites

Geriatric Adult Rehabilitation and Stroke Service (GARSS), Toowoomba Hospital

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Aim

- Introduction of an innovative transdisciplinary Short Stay Stroke Service (SSSS) model.
- Compare the patient and service outcomes of SSSS and the current standard (multidisciplinary) model of care, in the management of mild stroke patients with predicted admissions of seven days or less.

Benefits

- Reduced length of stay (LOS)
- Effective and comprehensive allied health assessment
- Improved patient journey
- Increased identification of ongoing needs and referral onwards
- Reduced wait time to access community rehabilitation services
- Fewer presentations to ED, less re-admissions to hospital and shorter LOS when re-admitted
- High levels of patient and staff satisfaction

Background

A review of Allied health services indicated that the introduction of a trans-disciplinary approach to patient care would be beneficial in the care of stroke patients. A literature review highlighted emerging evidence that patients who present with mild stroke deficits are assessed and discharged prematurely from allied health due to their high functioning acute presentation. This patient population develop deficits particularly with mood and cognition that become apparent in the months post stroke. There was a consistent trend of assessment duplication for stroke patients including overlap in many areas of physiotherapy (PT) and occupational therapy (OT).

Solutions Implemented

The [Calderdale Framework](#) was used to transform the traditional multidisciplinary service model operating in the Acute Stroke Unit into an innovative transdisciplinary SSSS model for patients with mild deficits post stroke and predicted short admission timeframes. As a result, several clinical tasks suitable for skill-sharing between disciplines were identified and online training modules were subsequently developed.

Evaluation and Results

An observational pre-post study using quantitative methods was used to compare effectiveness and efficiencies between the standard model and the innovative transdisciplinary service. [SSSS demonstrated the ability to reduce the length of inpatient stay, reduce inpatient allied health occasion of service and total allied health hours to achieve supported](#) discharges whilst increasing the breadth of assessment and post discharge support. Comparisons between the innovative transdisciplinary model implemented and standard care, highlighted service efficiencies across multiple areas

including:

- An average reduction in inpatient LOS of 33.9 hours (a 31.8 per cent reduction in mean LOS).
- Reduced occasions of service of summed PT and OT, on average, by 2.0 occasions and summed PT and OT inpatient time reduced, on average, by 36.5 minutes. – while still providing a more comprehensive and thorough targeted assessment.
- 70 per cent of patients in SSSS completed standardised outcome measures for balance, mobility, cognition, fine motor ability and functional performance level, compared with approximately 25-30 per cent in standard care.
- Significant reduction in assessment duplication between allied health disciplines (particularly in the areas of home environment, previous function, upper limb strength and sensation and visual field testing) with the implementation of SSSS.
- A transdisciplinary approach had significant positive effect on the patient journey along the continuum, reducing contact points both directly and non-directly with the patient.

The capacity for two-week follow-up enabled clinicians to thoroughly assess patients in their homes and to identify any ongoing issues. Home visits in the SSSS cohort were conducted 6.0 days post-discharge compared with an average 43.5 days post-discharge for the group receiving standard care. It is also pertinent to highlight that the same acute clinician continued to provide care for the patient for the two-week post-acute discharge period. Supported discharges also assisted in identifying patients who would benefit from ongoing allied health from the community rehabilitation team. The SSSS actioned 17 referrals for ongoing community-based rehabilitation whereas standard care only actioned 4. When compared with the standard model of care, it was also noted that the SSSS group, in the 6 months post CVA, had:

- Less ED presentations: (21 vs 15).
- Less hospital admissions (20 vs 13).
- If admitted, the SSSS had a mean reduced length of stay (189.2 hours vs 12.4 hours).

Lessons Learnt

- The Calderdale Framework served as an effective change management tool for sharing tasks between disciplines pertinent to the assessment and management of this patient population.
- Thorough planning, training and assessment were required for safe transdisciplinary practice.
- The transition of training and assessment materials to online learning modules enhanced the efficiency and transparency of competency training for both trainers and clinicians.

References

Information on the Calderdale Framework is available at:

<https://qheps.health.qld.gov.au/alliedhealth/html/calderdale-framework> Bell, C.M. and Redelmeier, D.A. Mortality among patients admitted to hospitals on weekends as compared with weekdays. *N Engl J Med*, 2001;345: 663-668. Bivard, A., Lillcrap, T., Marechal, B., Garcia-Esperon, C., Holliday, E., Krishnamurthy, V., Levi, C.R., & Parsons, M. Transient Ischemic Attack results in Delayed Brain Atrophy and Cognitive Decline. *Stroke*, 2018; 49: 384-390, doi:10.1161/STROKEAHA.117.019276 Bray, B., Cloud, G., James, M., Hemingway, H., Paley, L., Stewart, K., Tyrrell, P., Wolfe, C., & Rudd, A. Weekly Variation in health-care quality by day and time of admission: a nationwide, registry-based, prospective cohort study of acute stroke. *Lancet*, 2006; 288, 170-177. DOI: [https://doi.org/10.1016/S0140-6736\(16\)30443-3](https://doi.org/10.1016/S0140-6736(16)30443-3) Cram, P., Hillis, S.L., Barnett, M., & Rosenthal, G.E. Effects of weekend admission and hospital teaching status on in-hospital mortality. *Am J Med*, 2004;117: 151-157. Deplanque, D., Bastide, M., & Bordet, R. Transient Ischemic Attack and Minor Stroke: Definitely Not So Harmless for the Brain and Cognitive Functions. *Stroke*, 2018; 49(2), 277-278. doi: 10.1161/STROKEAHA.117.020013. Kaltner, M., Murtagh, D., Bennetts, M., Pighills, A., James, J., & Scott, A. Randomised controlled trial of a transprofessional healthcare role intervention in an acute medical setting. *Journal of Interprofessional care*, (2017); 31(2), 190-198. DOI:10.1080/1356182.2016.1248237 Palmer, W., Bottle, A., Davie, C., Vincent, C., & Aylin, P. (2012). Dying for the weekend: A retrospective cohort study on the association between day of hospital presentation and the quality and safety of stroke care. *Archives of Neurology*, 69 (10), 1296-1302. doi:10.1001/archneurol.2012.1030 Rudd, A.G. & Bray, B. Strokes happen round the clock, but why is stroke care worse on weekends and overnight? *J Neurol Neurosurg Psychiatry* 2016; 87 (2); p116. Saposnik, G., Baibergenova, A., Bayer, N., & Hachinski, V. Weekends: A Dangerous Time for Having a Stroke? *Stroke*, (2007); 1211-1215. DOI: 10.1161/01.STR.0000259622.78616.ea Turner, M., Barber, M. Dodds, H., Dennis, M., Langhorne, P., Macleod, M.J. (). Stroke Patients admitted within normal working hours are more likely to achieve process standards and to have better outcomes. *Neurol Neurosurg Psychiatry*, 2016; 87, 138-143. doi:10.1136/jnnp-2015-311273