

## Support My Spine ASAP. A Rural Tele-health care model for patients being managed with a Thoracic Lumbar Sacral Orthotic (TLSO).

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### Abstract

**Question:** Does a Telehealth model of care facilitating treatment in rural hospitals for patients requiring a TLSO eliminate the need for transfer to a tertiary referral hospital?

**Design:** Quantitative pre and post intervention design.

**Participants:** Physiotherapists, nursing and medical staff at rural hospital pilot sites.

**Intervention:** Pre and post intervention data collection provided patient demographics, and length of stay data around model of care implementation. Pre intervention staff surveys identified knowledge gaps informing educational packages which were provided with a mobile Telehealth link.

**Outcome measures:** Primary: Number of patients managed under the new model of care.

**Secondary:** Length of stay, travel distance eliminated and complications.

**Results:** 30 patients fitted with TLSO's and managed under this model of care to date. Length of stay has reduced from 9.14 days pre intervention to 3.8 days post intervention. Approximate savings of \$6840 per patient have been identified, with over 6000kms of patient travel eliminated. No complications have occurred. Rural Physiotherapists have been successfully up skilled in managing patients requiring TLSO fitting.

**Conclusion:** This intervention successfully created a model of care to facilitate local management of patients requiring TLSO fitting with Telehealth support from a tertiary referral hospital. Considerable savings have occurred from this model of care for patients and the health district. This model is currently being implemented district wide.

**Key Practice Points:**

- Telehealth model of care can be successfully implemented to TLSO management
- Multidisciplinary team role is critical role in redesigning models of care
- Telehealth increase the efficiency of healthcare resources

**Key Words:** Telehealth, TLSO brace

### Introduction

Thoracic Lumbar Sacral Orthotics (TLSO's) are prescribed when a spinal fracture is determined not to require surgical management (Agabegi, Asghar & Herkowitz, 2010). Patients with injuries in the thoraco-lumbar spine can be prescribed TLSO's to aid with stabilisation, pain relief and initiate mobilisation (Bailey, Dvorak & Thomas, 2009). However, TLSO's must be correctly fitted and managed, as non-optimal fitting can lead to increased pain, pressure areas and decreased compliance, which may cause delayed healing (Moffatt & Eley, 2010).

In Hunter New England Local Health District (HNELHD) all patients with spinal fractures

requiring a TLSO (approximately 100 annually) were previously fitted by Physiotherapists at the John Hunter Hospital. HNELHD covers a geographical area the size of England and has within its boundaries regional, rural and remote areas. Long distance transport to and from their hospital of origin prolonged and fragmented the patients journey (Figure 1). This led to delayed: fitting, pain relief, prolonged immobilisation and increased in the adverse events that accompany immobilisation. This results in prolonged length of stay (LoS), extra expense for patients as well as increased health care costs associated with air ambulance transfers (approximately \$3000 one way).

### Aim

To develop and implement an innovative telehealth model of care for patients with spinal fractures requiring treatment with a TLSO that reduced the need for patients in rural and regional communities to travel to

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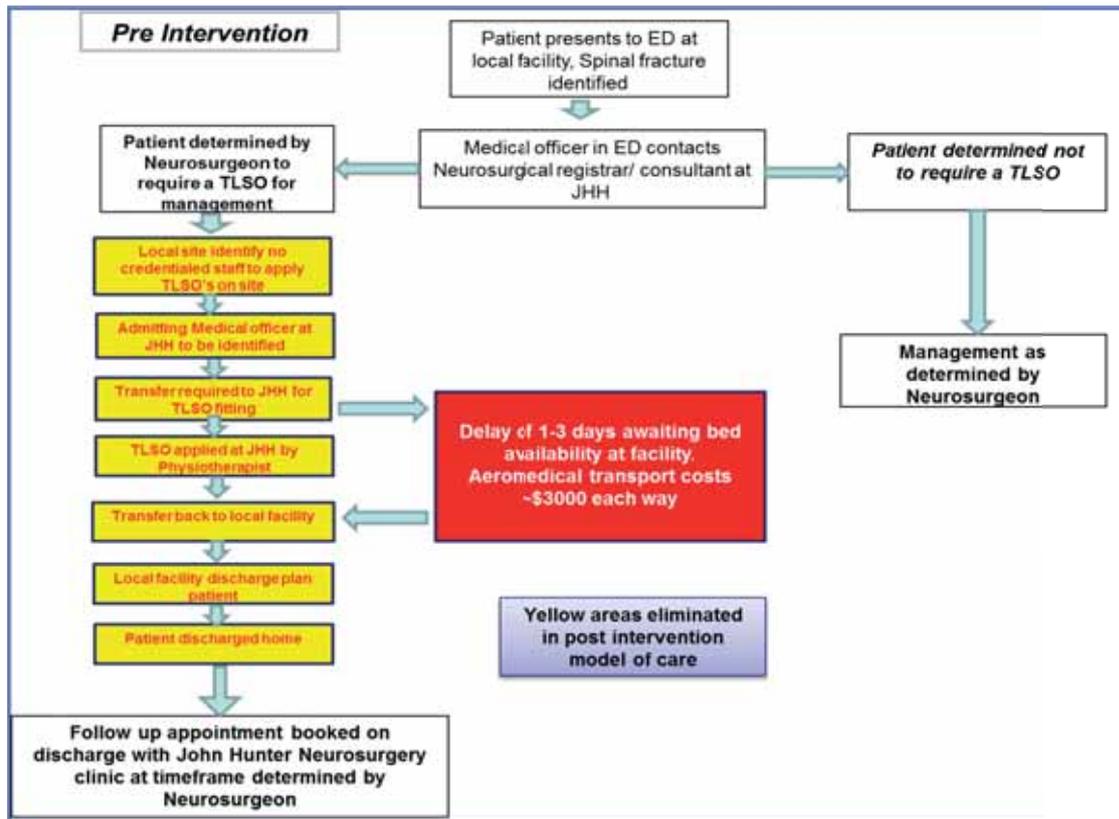


Figure 1 (Above): Pre-implementation patient journey

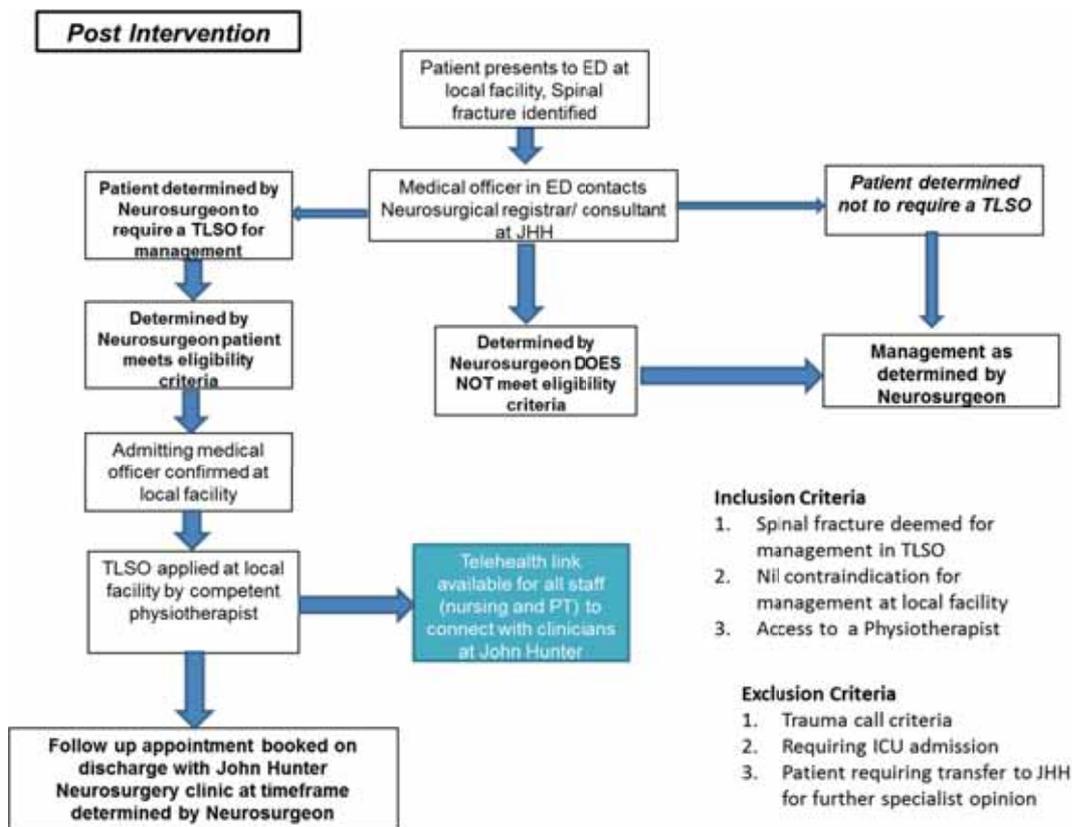


Figure 2 (Above): Post-implementation patient journey.

John Hunter Hospital for specialist fitting and management.

### Method

This quantitative study had a pre and post intervention design. Data collection provided: Patient demographics, mapped patient journeys and identified mean LoS. A pre intervention staff survey identified knowledge gaps in managing patients requiring TLSO's. This informed development of educational resources.

A workshop and educational package provided clinicians with education on TLSO fitting and ongoing management. Telehealth technology was established to at the site support staff as required.

### Results

To date 41 patients have been managed by this model of care and as a result patient care is less fragmented (Figure 2). Patients access specialist care in their local communities and rural clinicians are empowered to deliver and manage this care.

The implementation of the telehealth model has produced the following outcomes:-

- Reduced LoS, from a mean 9.14 days pre implementation to a mean 3.8 days post implementation.
- Eliminated over 6900 km's in patient transfers for specialist treatment.
- Eliminated transports costs of up to \$6000 per patient (Moffatt & Eley, 2010).
- Estimated efficiency savings of \$6840 per patient (NSW Health Policy: Health Services Act, 1997).
- Decreased fragmentation of the patient journey allowing for stronger community support.
- Reduced patient and family financial burden by remaining in local community for ongoing treatment.
- Developed and supported clinician knowledge, skills and confidence by providing targeted training packages.
- Increased capacity for telehealth utilisation.

### Conclusion

This project has demonstrated that the integration of telehealth into a specialised model of care can empower rural clinicians to provide specialist services previously provided by tertiary level hospitals. As a result of staff edu-

cation and telehealth patients now have access to specialist fitting not available prior to this project.

This project has also demonstrated the capacity to significantly improve the patient's outcomes resulting in reduced length of stay in hospital and reduced financial burden to both patient and the healthcare organisation.

### Acknowledgements

- HNELHD Innovation and Support Innovation Scholarship.
- Tamworth Hospital Physiotherapy & Orthopaedic Departments.

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**Note:** This paper was originally presented as a poster at the 2015 ANNA Conference and won the Poster Prize.