# A Stitch in Time - Nurses suturing post neurosurgical drain removal
## Building the Health Workforce

## Introduction

Certain drains used in neurosurgery require the site to be sutured after drain removal to prevent complications. Historically the suturing has been the responsibility of medical staff and it is believed that this is the current practice of neurosurgical units Australia-wide.

Clinical review identified delays having these drains removed and hence patients were experiencing adverse outcomes associated with prolonged immobilisation due to mandatory bed rest until drain removal.

This innovative project focuses on facilitation of timely removal and suturing of drain sites by providing nurses with the education and training to perform suturing to match service requirements.

## Aim

To improve patient outcomes by reducing the average time for drain removal and suturing in neurosurgical patients at Liverpool Hospital from 9 to 2 hours by December 2011.

## Method

A group of clinicians formed and discussed the problem, analysed the causes and devised strategies. A literature search was undertaken and numerous units across Australia were consulted regarding current practice.

The group recommended enabling registered nurses (RNs) to gain accreditation for the procedure of suturing drain sites. A benchmark time for removal and suturing of drains was set at two hours following the order for removal.

To support clinical practice, an accreditation process and a policy guideline was developed to ensure standardisation of practice and patient safety.

The project was implemented in two phases. Phase 1 was a trial undertaken by the CNC, including evaluation of the outcomes. Phase 2 was reliant on the outcomes of Phase 1, and involved the expansion of suturing education and training to more RNs.

## Results

After one year, the data indicated that from 248 neurosurgical drain sites, 47% (n=117) had been nurse sutured. 100% of drains removed and sites sutured by the nurse occurred within the two hour benchmark hence meeting the project aim (see Figure 1).

Furthermore, of the 117 suturing occasions there were no CSF leaks following suturing and no recorded infections.

Three months into the second phase, as more nurses were able to suture drain sites, data confirmed an increase from 47% to 52% of drain sites sutured by nurses.

A three month snapshot into the second phase showed improvements at 61%. 100% of occasions have been sutured within the 2 hour timeframe, with no CSF leaks or infections. This practice change is now embedded and accepted by all stakeholders.
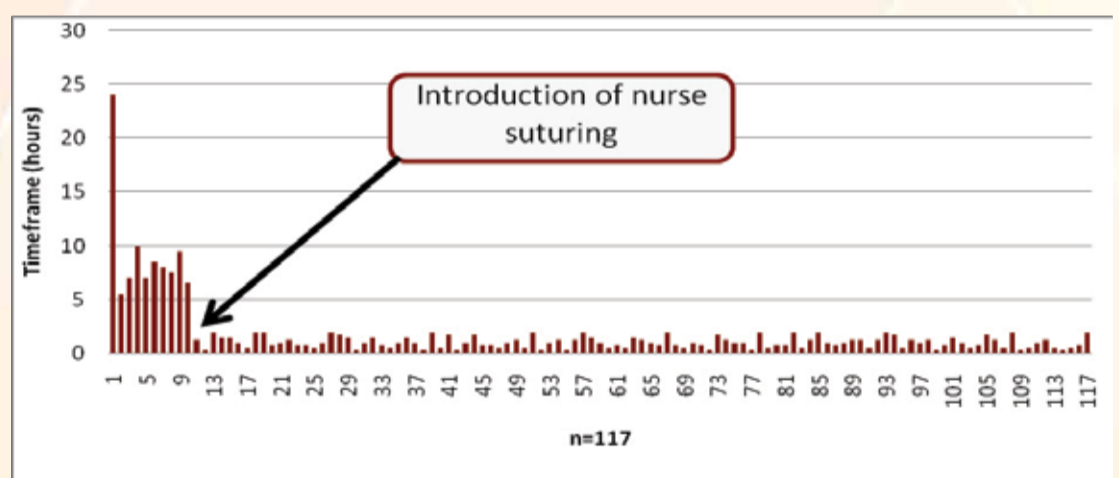
## Conclusion

This unique model of care is transferable, creates professional development opportunities, enhances service delivery and maximises patient outcomes.
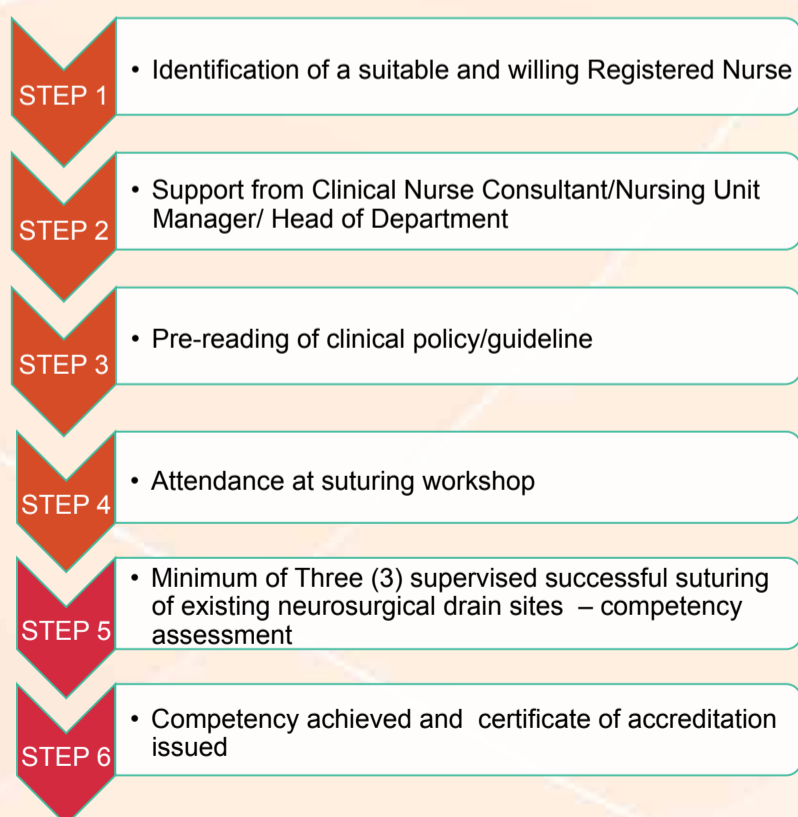
With a shortage of a specialised workforce remaining an ongoing and growing challenge, the rethinking of roles and enabling nurses to gain accreditation for the procedure of suturing has thrived as an approach to improve timely patient care, prevent the known complications of long term bed rest and achieve neuroscience nursing professional development, satisfaction and strengthening of career pathways.

This care model and the processes of nursing education and training has been published and presented at the Australasian level, leading to two peer units adapting this model of care.

### Accreditation Process

STEP 1 • Identification of a suitable and willing Registered Nurse

STEP 2 • Support from Clinical Nurse Consultant/Nursing Unit Manager/ Head of Department

STEP 3 • Pre-reading of clinical policy/guideline

STEP 4 • Attendance at suturing workshop

STEP 5 • Minimum of Three (3) supervised successful suturing of existing neurosurgical drain sites – competency assessment

STEP 6 • Competency achieved and certificate of accreditation issued

Figure 1 Timeframes of occurrence of drain removal and suturing



Introduction of nurse suturing

n=117

Suturing Workshop



## Acknowledgements

**Kylie Wright**

CNC Neurosurgery

**Dr Mark Sheridan**

Director of Neurosurgery

Liverpool Hospital

LIVERPOOL HOSPITAL