Project Title

Enhanced Recovery After Surgery (ERAS) In Lumbar Spinal Fusion Surgery

Project Lead and Members

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Project members: A/Prof Gamaliel Tan, Asst Prof Deepak Joseph, Fione Gun, Dr Manu Jacob Abraham, Mathew Neo, Kellyn Lee, Amanda Ng, Cheong Siew Jing, Tang Min Yee, A/Prof Fareede Kagda

Organisation(s) Involved

Ng Teng Fong General Hospital, Jurong Community Hospital

Healthcare Family Group(s) Involved in this Project

Medical, Allied Health, Healthcare Administration

Applicable Specialty or Discipline

Neurosurgery, Physiotherapy, Clinical Research

Project Period

Start date: 2021

Aims

We aim to compare the early outcomes of ERAS Protocol for our patients underwent LSF surgery (spinal fusion 1-2 level) from November 2020 to July 2021 (n=24) against LSF patients on Non-ERAS Protocol from November 2019 to October 2020 (n=25).

Background

See poster appended / below

Methods

See poster appended / below

Results

See poster appended / below

Lessons Learnt

- Pre-op patient education and prehabilitation improve patient expectations on Length of Stay and Discharge Planning.
- Implementation of ERAS Protocol in LSF surgery reduces the usage of Strong Opioids and facilitates early mobilisation and discharge.
- Good interdisciplinary communication between disciplines improves care – coordination and compliance to ERAS Protocol.
- A strong leadership and camaraderie between multidisciplinary team, regular updates and analysis of the programme are key success factors of ERAS Protocol in LSF surgery.

Conclusion

See poster appended / below

Project Category

Applied/ Translational Research, Quantitative Research, Care Continuum, Inpatient Care

Keywords

Lumbar Spinal Fusion (LSF), Surgery, Clinical Indicators, Recovery Of Patients, Length Of Stay (LOS), Multidisciplinary, Multimodal Perioperative Care

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ENHANCED RECOVERY AFTER SURGERY (ERAS) IN LUMBAR SPINAL FUSION SURGERY

MEMBERS: DR RAJEESH GEORGE (CLINICIAN LEAD), A/PROF GAMALIEL TAN, ASST PROF DEEPAK JOSEPH, FIONE GUN, DR MANU JACOB ABRAHAM, MATHEW NEO, KELLYN LEE, AMANDA NG, CHEONG SIEW JING, TANG MIN YEE, A/PROF FAREED KAGDA (SPONSOR)

- ☑ SAFETY
- ☑ QUALITY
- ☑ PATIENT EXPERIENCE
- ☑ PRODUCTIVITY

Define Problem, Set Aim

Opportunity for Improvement

Traditionally, a patient's journey undergoing Lumbar Spinal Fusion (LSF) surgery comprises of different stages during which various care plans are carried out by individual team. Enhanced Recovery After Surgery (ERAS) conceptualises a multidisciplinary and multimodal perioperative care approach that aims to hasten the recovery of patients undergoing surgery. ERAS protocol, when applied to spine procedures, reduces the Length of Stay (LOS), accelerates return of function, minimise postoperative pain and saves cost [1].

References

Elsarrag, M., Soldozy, S., Patel, P., Norat, P., Sokolowski, J. D., Park, M. S., Tvrdik, P., & Kalani, M. Y. S. (2019). Enhanced recovery after spine surgery: a systematic review, *Neurosurgical Focus FOC*, *46*(4)

Aim

We aim to compare the early outcomes of ERAS Protocol for our patients underwent LSF surgery (spinal fusion 1-2 level) from November 2020 to July 2021 (n=24) against LSF patients on Non-ERAS Protocol from November 2019 to October 2020 (n=25).

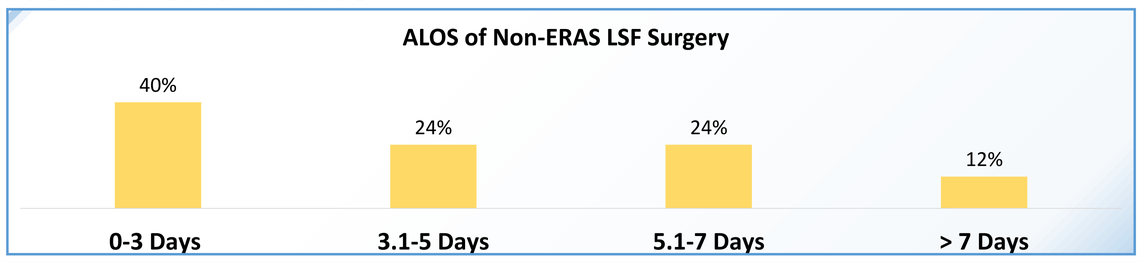
Establish Measures

The patient cohort comprises of 49 patients who fulfilled the selection criteria underwent elective LSF surgery from November 2019 to July 2021 at NTFGH.

The 3 clinical indicators are:

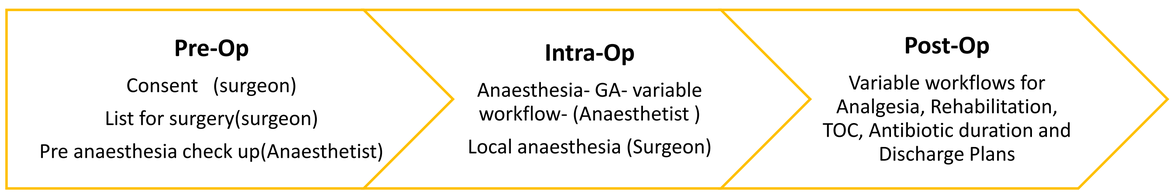
1.	Length of Stay (LOS)
2.	Duration of indwelling Urinary Catheter
3.	Strong Opioid (Oxycodone, Morphine/ PCA) usage post-operation

Baseline Performance



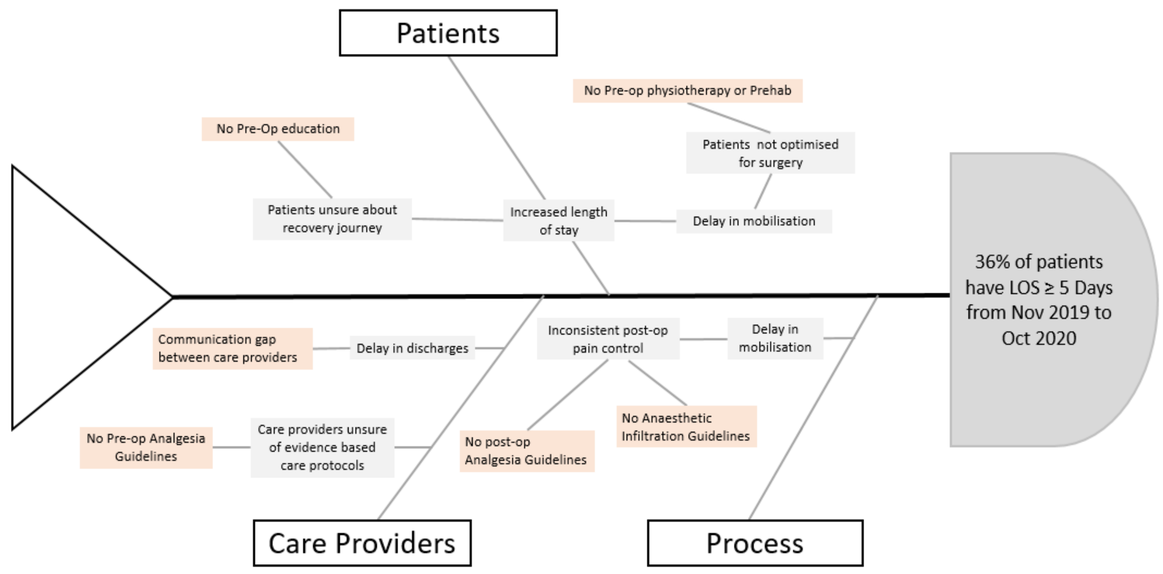
Analyse Problem

Interventions



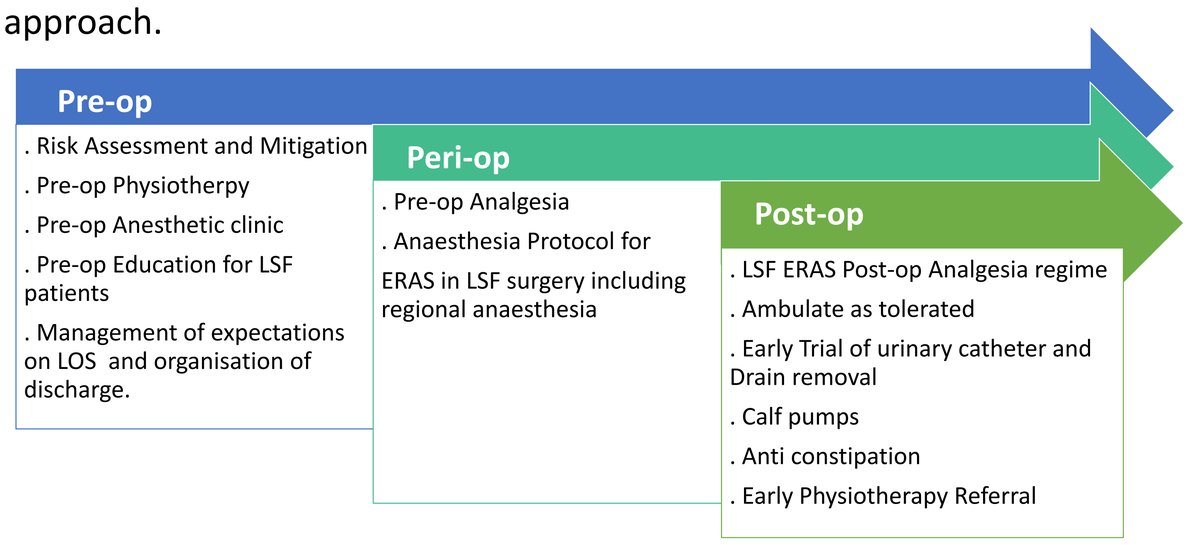
Root Cause Analysis

Targeted areas of improvement:



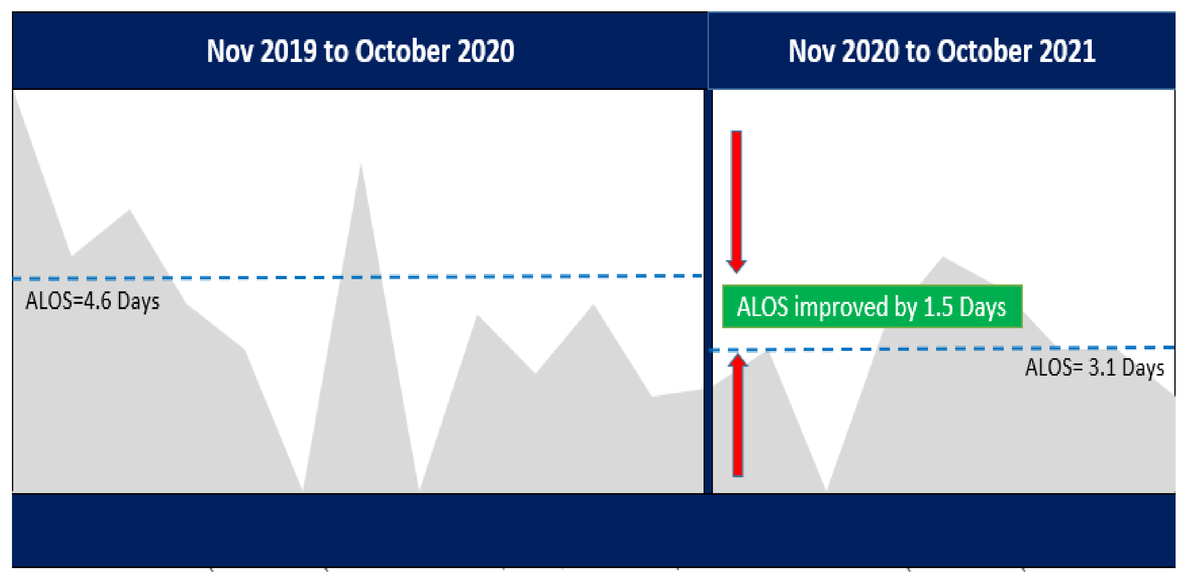
Test & Implement Changes

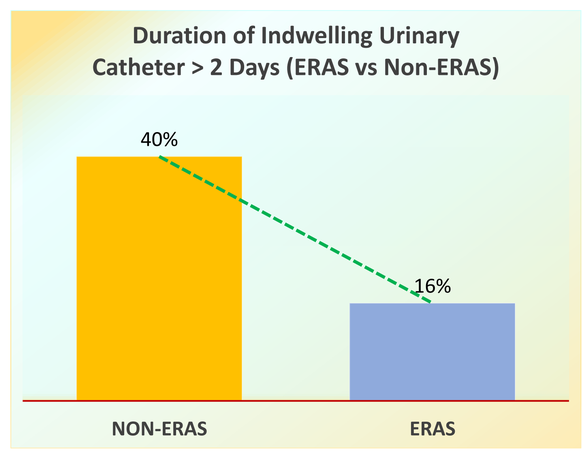
ERAS Protocol in LSF surgery was established in a Multidisciplinary Team approach.

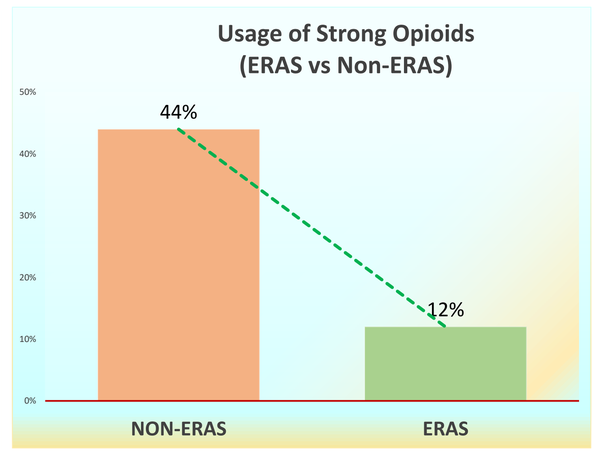


CYCLE	PLAN	DO	STUDY	ACT
1.	Measured ALOS for Non-ERAS in LSF surgery	Implementation of ERAS Protocol in LSF surgery in Nov 2020	Improvement in performance and decease in variance	Continue ERAS Protocols and monitor performance
2.	Measure Duration of Indwelling Urinary Catheter and Opioid used for Non-ERAS in LSF Surgery			

Early results of ERAS in LSF surgery are encouraging. **ALOS decreased by 1.5 days, usage of Stronger Opioid decreased by 32%,** whilst **Duration of Indwelling Urinary Catheter > 2 Days decreased by 24%.**







Spread Changes, Learning Points

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- Implementation of ERAS Protocol in LSF surgery reduces the usage of Strong Opioids and facilitates early mobilisation and discharge.
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Acknowledgements

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