

# LUMBAR ENDOSCOPIC AWAKE DAY SURGERY (LEADS) PROTOCOL IN LUMBAR SPINAL DISCECTOMY SURGERY

MEMBERS: DR WU PANG HUNG (CLINICIAN LEAD), A/PROF GAMALIEL TAN, SHANNON LEONG, MUHAMMAD HAFIZ BIN ROSMAN, CHEONG SIEW JING, A/PROF FAREED KAGDA (SPONSOR)

- ✓ SAFETY
- ✓ QUALITY
- ✓ PATIENT EXPERIENCE
- ✓ PRODUCTIVITY

## Define Problem, Set Aim

### Problem/Opportunity for Improvement

Prolapsed Intervertebral Disc (PID) is a common spine condition causing disability, which is traditionally treated by open or microscopic tubular lumbar spinal discectomy. Although it is effective, patients had a hospital stay of 2 to 6 days after surgery, which may pose extra costs, significant perioperative pain and disability relating to surgical and general anesthesia methods, as well as stress on bed requirement and potential risk of nosocomial infection. Lumbar Endoscopic Awake Day Surgery (LEADS) is a protocol which potentially allows early mobilisation with less perioperative disability, leading to shorter Length of Stay (LOS) with potential of being a day surgery procedure. Key elements include preoperative (Pre-op) education, intraoperative endoscopic surgery and postoperative (Post-op) physiotherapy, medications and discharge criteria.

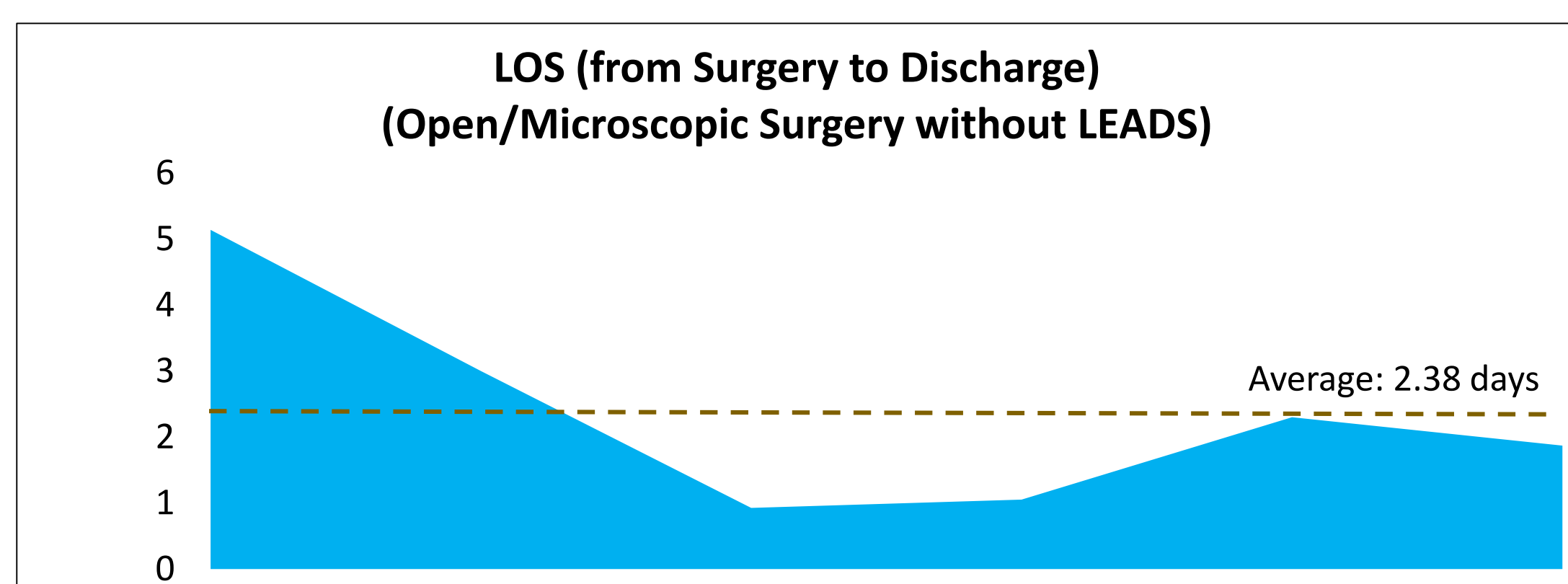
### Aim

We aim to achieve LOS (from surgery to discharge) < 1 day for Lumbar Spinal Discectomy through endoscopic spine surgery with LEADS protocol.

## Establish Measures

### Baseline Performance

Comparison of LOS (from surgery to discharge) for 12 patients who underwent Endoscopic Lumbar Spinal Discectomy surgery with LEADS Protocol (April 2020 to April 2021) against 6 patients who underwent Open or Microscopic Lumbar Spinal Discectomy surgery (March to April 2021).

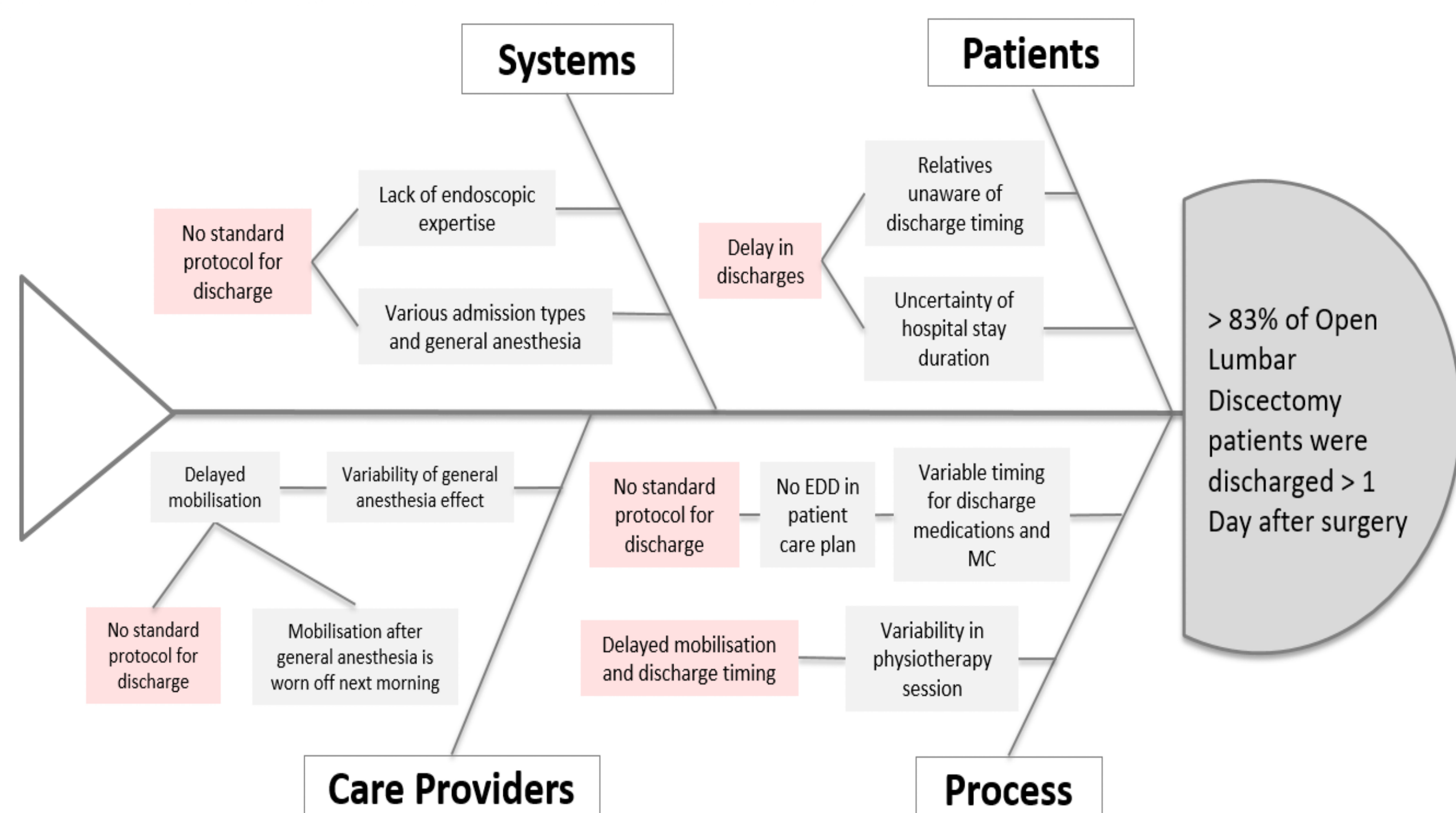


The Visual Analog Scale (VAS) Pain Score and Oswestry Disability Index (ODI) Score of 12 patients who underwent Endoscopic Lumbar Spinal Discectomy Surgery with LEADS Protocol had also been tracked.

## Analyse Problem

### Root Cause Analysis

Targeted areas of improvement were:



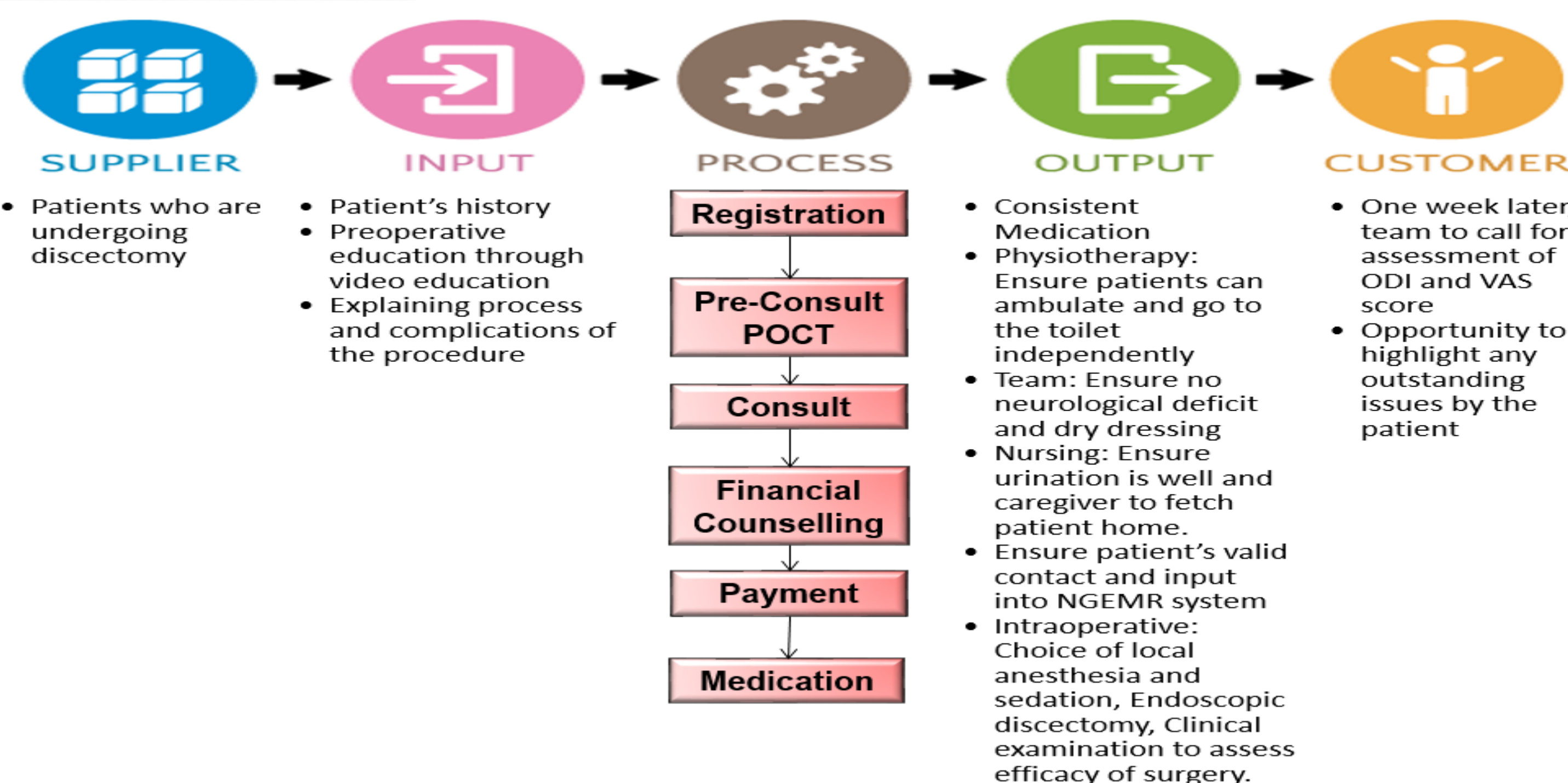
## Acknowledgements

The authors would like to thank the contributors of the multidisciplinary team in the success of LEADS protocol, without whom this would not have been possible.



## Select Changes

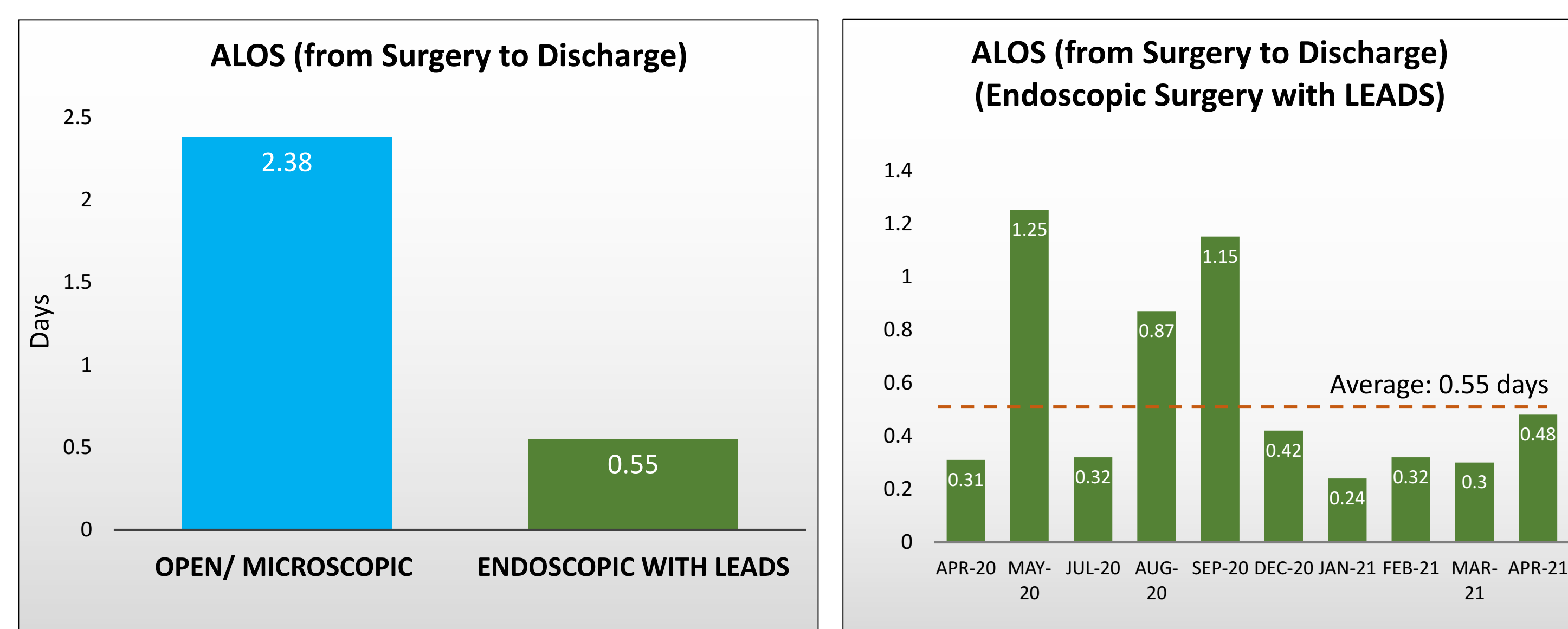
### Probable Solution



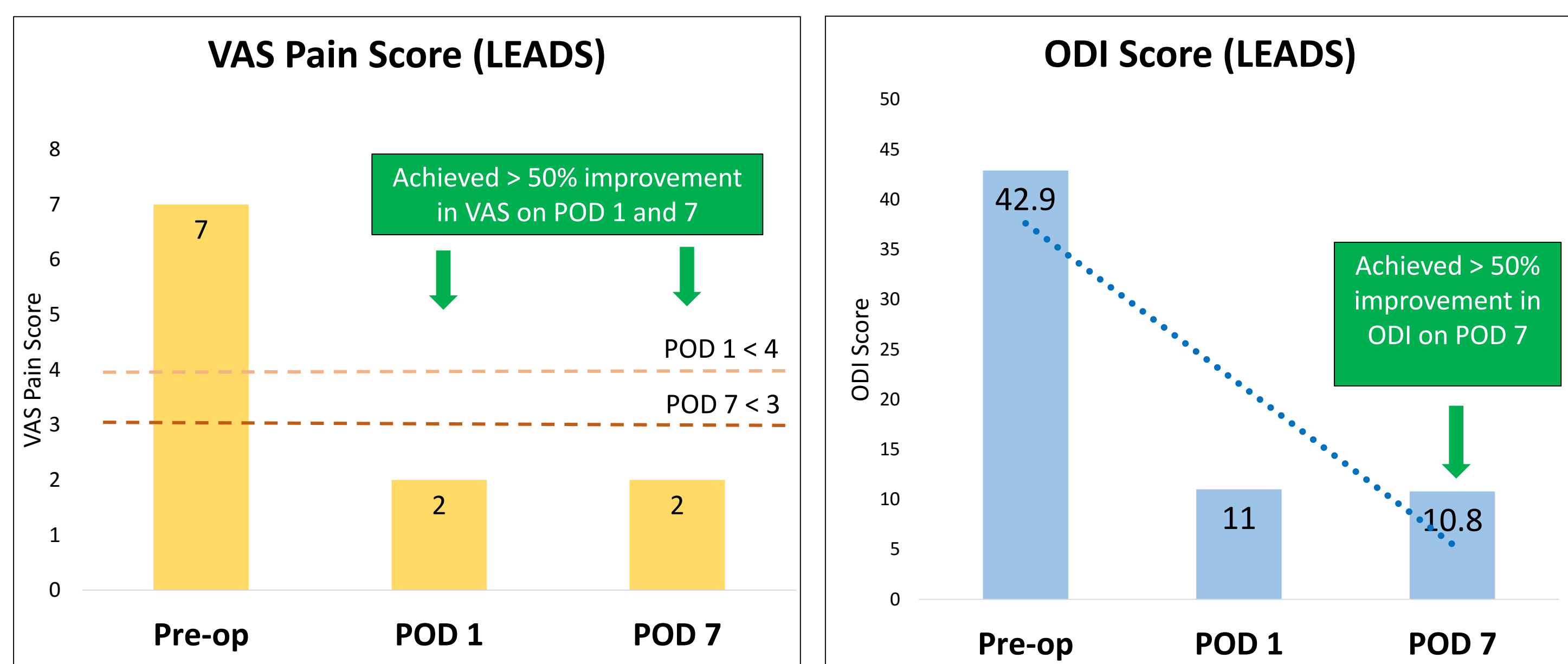
## Test & Implement Changes

CYCLE	PLAN	DO	STUDY	ACT
1.	Compare LOS (from surgery to discharge) for the selected patient cohort	Pre-op education and perioperative protocol	Improvement in LOS (from surgery to discharge)	Continue LEADS protocol for Endoscopic Lumbar Discectomy patients
2.	Track VAS Pain Scores and ODI Scores for patients who underwent with Endoscopic Lumbar Spinal Discectomy with LEADS Protocol (Pre-op, POD 1 and POD 7)	Pre-op education and perioperative protocol	Improvement from Pre-op VAS Pain Score and ODI Score	Continue LEADS protocol for Endoscopic Lumbar Discectomy patients

The Average LOS, ALOS (from surgery to discharge) for patients who underwent Endoscopic Lumbar Spinal Discectomy with LEADS Protocol was reported at 0.55 days, compared to 2.38 days for those who underwent Open or Microscopic Lumbar Spinal Discectomy surgery.



The VAS Pain Score and ODI for Endoscopic Lumbar Spinal Discectomy with LEADS Protocol improved by 50% at POD 1 & POD 7, as compared to Pre-Op.



## Spread Changes, Learning Points

- The early results of Endoscopic Surgery with LEADS Protocol are encouraging. There were clinically significant improvements in LOS (from surgery to discharge), Pain Score and Oswestry Disability Score.
- Emphasis on preoperative patient education and perioperative rehabilitation help to enhance the patient experience and satisfaction.
- Strong leadership and support from the multidisciplinary team are key factors for the success of LEADS Protocol in Endoscopic Lumbar Discectomy surgery.