

To Improve the Percentage of Patients Undergoing Laparoscopic Cholecystectomy having Post-operative Length of Stay ≤ 1 Day within 12 Months from 70.6% to 80.6%

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Background

Laparoscopic cholecystectomy is one of the Ministry of Health (MOH) Value Driven Care (VDC) conditions to be monitored for further improvement. The performance of the condition is monitored via Clinical Quality Index (CQI) which is calculated using an 'all-or-none' methodology of a set of outcome indicators.

Amongst these outcome indicators, the indicator 'Post-Operative Length of Stay (LOS) ≤ 1 day' has been found to adversely affect the CQI performance for Lap Cholecystectomy VDC. As such, the team decided to look into ways to improve the length of stay performance.

Mission Statement

To improve the percentage of patients undergoing laparoscopic cholecystectomy having post-operative length of stay ≤ 1 day within 12 months from 70.6% to 80.6%

Analysis of problem

1) Deep-dive analysis via case reviews was done for patients who underwent laparoscopic cholecystectomy surgery (Jan to Sep 2019) to identify the reasons for the prolonged LOS. The analysis found 2 prolonged LOS reasons that could be acted; i.e. patients staying back for drain removal (29.4%) and for patient/family request (8.2%).

2) Focus-group discussions were held by the team consisting of HPB doctors, PTI and CGQ staff where we found that the main reasons of patients requesting to stay back and patients staying back for drain removal are due to the following reasons:

Category	Reasons for Prolonged Stay	No.	%
Medical (80.0%)	Drain removal	25	29.4
	Surgical (complications)	14	16.5
	Medical (e.g. post op ARU, HAP)	11	12.9
	Comorbidities (e.g DM)	7	8.2
	Observations/Investigations/Referrals/Monitoring	7	8.2
	Pain management	3	3.5
	IV Antibiotics	1	1.2
Social (9.4%)	Patient/family request	7	8.2
	Waiting for transfer	1	1.2
No Reason (10.6%)	No reason identified	9	10.6

Root causes	Interventions
Lack of standardization of care	PDCA 1: Roadshow to clinicians
	PDCA 2: Update to Electronic Admission Form
Lack of awareness to discharge patients on same day	PDCA 2: Updating of Electronic Admission Form
Lack of awareness to current performance	PDCA 3: Individual Clinician report

Interventions

In view of the above analysis, following interventions are executed using Plan-Do-Check-Act methodology:

PDCA 1 – July 2020

A roadshow was conducted for HPB clinicians to raise awareness of the laparoscopic cholecystectomy VDC performance. Clinicians were informed on the need to actively discharge patients with drains instead of admitting patients for drain removal/monitoring to shorten LOS and reduce cost to the hospital.

PDCA 2 – March 2021

To remind surgeons to inform patients that they can be discharged on the same day of surgery and that not all patients need to be warded post operatively, the default admission type in electronic admission form was updated to "Short Stay Ward" for patients undergoing laparoscopic cholecystectomy.

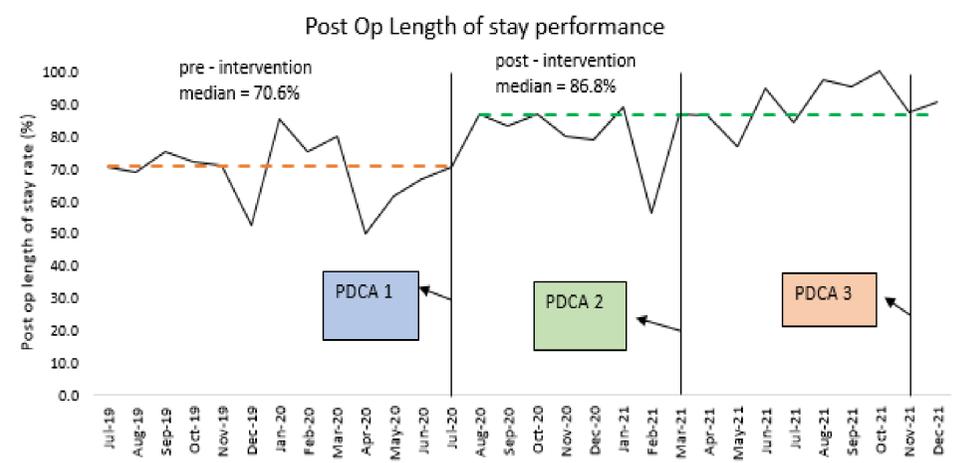
PDCA 3 – Nov 2021

To encourage clinicians to work towards better performance, Individual Clinician Report (ICR) was implemented to benchmark their performance against the department average performance and also against the individual clinician's previous performance.

Result

The team was able to meet target and increase the performance for post-operative length of stay from pre-intervention median of 70.6% (from Jul 2019 to July 2020) to post intervention median of 86.8% (from Aug 2020 to Dec 2021).

The pre-intervention average LOS was 1.9 days while post-intervention average LOS was 1.3 days. With the calculation that there is a cost of \$1,200 to the hospital per inpatient day and that there were 365 cases in 2021, the hospital would have saved \$262,800 per year.



Sustainability Plans

The team would continue to monitor the post-operative length of stay and individual clinician performance via automated dashboard for continuous sustained improvement.