MACH
Melbourne Academic
Centre for Health

MacHSR Future Leaders Fellowship program
Final reporting (Cohort 1)

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Project title: **Tackling the post covid waiting list headache at the Royal Melbourne Hospital: Expansion of Same Day Surgery Models of Care**

Project scope:
The initial MacHSR project proposal was to identify initiatives to address long surgical waitlists and trial implementation at our health service. Early in the fellowship it was apparent that day surgery was an underutilised initiative in our hospital that would increase efficiency and reduce bed use and became the focus for this project.

Day surgery is defined as surgical care where the patient is admitted, undergoes surgery and is discharged on the same calendar day. It involves standardisation of the patient journey to provide high quality care in an ambulatory setting. This involves appropriate patient selection, education, standardization of surgery and anaesthetic technique where possible and providing outpatient patient support. The overall project aim is to increase the use of day surgery by gradually expanding the list of procedures that are managed as day procedures, thus reducing bed-pressure and expediting patient flow.

Project Aim: To expand same day surgical models of care at RMH with the aim to increase the total percentage of selected procedures being completed as same day cases to 75%, creating significant bed day savings for the organisation.

Procedures:
Phase 1: Commenced 8 March 2023

- Laparoscopic Cholecystectomy
- Unilateral Inguinal hernia repair (laparoscopic or open)

Phase 2: Commenced 1 August 2023

- Haemorrhoidectomy
- Complex anal fistula surgery (Mucosal advancement flap and LIFT procedure)
- Lumbar laminectomy (single level)
- Lumbar discectomy (single level)

Phase 3 : Future directions (date TBC, likely 2024)

- Tonsillectomy/Adenoidectomy
- Emergency laparoscopic appendicectomy and cholecystectomy

Background

Baseline data (Table 1) demonstrated our hospital to be behind international counterparts with respect to length of stay for common surgical procedures of Laparoscopic cholecystectomy and inguinal hernia, with very low rates of day surgery (6-7% and 9-31% respectively). Both Inguinal hernia and laparoscopic cholecystectomy were previously planned as 23 hour/1 night admissions prior to this project.

Table 1: RMH Baseline date

Cholecystectomy: (PPP 032)	2021:	2022:
Cases	122	117
Avg LOS (days)	1.38	1.46
Booked same day & D/C same day	0/0	5/12 (42%)
Total D/C same day	9 (7.4%)	7 (6%)
<72 hours readmissions	0	1 (0.9%)
< 28 days readmissions	8 (65%)	2 (1.7%)
Inguinal Herniorrhaphy: (PPP 196)	**2021:**	**2022:**
Cases	84	74
Avg LOS (days)	2.02	1.55
Booked same day & D/C same day	1/2 (50%)	11/18 (61%)
Total D/C same day	5 (8.9%)	23 (31%)
<72 hours readmissions	2 (2.4%)	1 (1.6%)
< 28 days readmissions	7 (8.3%)	3 (4.1%)

Day case laparoscopic cholecystectomy is common. Overall UK day case rate for cholecystectomy was measured at 57% in 2016, with a British Association of Day Surgery (BADS) target of 75%.[1] Numerous local series suggest that day case cholecystectomy is safe and feasible with some exclusion criteria.[2-8] High rates of day case can be achieved in the Australian setting as evidenced by 73% of all elective laparoscopic cholecystectomies discharged home day of surgery at Westmead hospital in NSW.[8] Recent papers suggest the failure of planned day stay is less than 20% in NSW and South Australian series.[9] Likewise, there is a significant evidence that same day inguinal hernia repair is safe as demonstrated by a systematic review numerous trials comparing day-surgery to overnight admission.[10] The Royal Australasian College of surgeons published guidelines in 2017 recommending that most inguinal hernia repairs be managed as a day case and that hospitals should target a 70-80% rate of day surgery for this procedure.[11]

Project team and resources

This project was supported by Planned Surgery Recovery & Reform Program and was supported by a project manager and the subsequent appointment of a dedicated day surgery clinical nurse specialist. The MacHSR fellow was the clinical/surgical lead for the project.

Outcome measures:

- Length of stay, with aim for 75% of these cases to be day-case surgeries
    - Rate of failure of planned day-case, and exclusion rate
- Patient reported outcome measures: QoR-15 surgery recovery score [12] at day 1 and day 7.

Research (QA) ethics: Was obtained from RMH office for research ref: QA2023008

Planning and Implementation

The decision was made that these procedures should be “default day-surgery” across the hospital, and that all cases should be planned and managed as day-surgery, with the establishment of exclusion (rather than inclusion) criteria to maximise uptake of the change to day surgery. The project team established regular meetings with key stakeholders (nursing, pharmacy, allied health, anaesthetic) to establish criteria for exclusion and agree on nurse led discharge criteria, next day nurse phone review, as well as escalation protocol for concerns in the post operative period.

Exclusion criteria (for initial laparoscopic cholecystectomy and inguinal hernia) were:

- Age > 80 years old
- American Society of Anaesthetists (ASA) score 4/5
- No responsible adult able to transport home from hospital and care for patient for at least 24 hours post-operatively
- Anticoagulation requiring bridging therapy (These would be managed by hospital in the home)

Nurse led discharge criteria and follow up escalation protocol have been established and are available in appendix 1 and appendix 2.

Results (Phase 1)
Cumulative day surgery rates since phase 1 commenced in March are 58% for inguinal hernia (table 2) and 41% for laparoscopic cholecystectomy (table 3). Themes in failure to attempt day surgery are medical complexity and lack of social support. Reasons for failure of planned day surgery were numerous but the use of surgical drains was the most common reason for unplanned admission for laparoscopic cholecystectomies.

Table 2: Day-stay inguinal hernia

Month	Total cases	Same Day Achieved	Conversion to overnight	Same Day Booked	Not Attempted [Booked Overnight]	Capture (attempted)	Successful conversion	Total Success by month	Cumulative Success	Re Presenting 28 Days Same Day
March	10	7	1	8	2	80%	88%	70%		2
April	7	4	1	5	2	71%	80%	57%	65%	0
May	12	6	2	8	4	67%	75%	50%	59%	0
June	2	1	0	1	1	50%	100%	50%	58%	0
July	5	3	0	3	2	60%	100%	60%	58%	0
Total YTD	**36**	**21**	**4**	**25**	**11**	**69%**	**84%**	**58%**	**58%**	**2**

Table 3: Day-stay laparoscopic cholecystectomy

Month	Total Cases	Same Day Achieved	Conversion to O/N stay	Same Day Booked	Not Attempted [Booked overnight]	Capture (attempted)	Successful conversion	Total Success by month	Cumulative Success	Re Presenting 28 Days Same Day
March:	21	11	6	17	4	81%	65%	52%		0
April	10	2	4	6	4	60%	33%	20%	42%	1
May	16	7	5	12	4	75%	58%	44%	43%	0
June	13	5	3	8	5	62%	63%	38%	42%	0
July	14	5	0	12	2	86%	42%	36%	41%	0
Total YTD	**74**	**30**	**25**	**55**	**19**	**74%**	**55%**	**41%**	**41%**	**1**

Patient reporting outcome measures data was available for 34 patients who completed the QoR-15 assessment (an assessment of recovery and symptoms with range from 0-150). Average QoR-15 scores were Day 1: 111 (range 58-136) and Day 7 124 (range 78-148). Further statistical analysis is underway to determine relationship between comorbidity and recovery score.

Collaboration
Collaboration has been facilitated by the West Metro Health Service Partnership and a day surgery community of practice has been established to share learnings and resources developed across hospitals in the HSP.

Future directions
There are plans to publish the initial learnings from our hospital's move to day surgery. The MacHSR fellow will continue to work as clinical lead for day surgery program at RMH and we expect to further increase proportion of cases done as day-cases with aim to reach the 75% target and move into phase 2 and 3 with further procedures becoming day-cases.

References:

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11. Royal Australasian College of Surgeons, *Same-day surgery for femoral, inguinal and umbilical hernia repair in adults*. 2017.
12. Stark, P.A., P.S. Myles, and J.A. Burke, *Development and psychometric evaluation of a postoperative quality of recovery score: the QoR-15.* Anesthesiology, 2013. **118**(6): p. 1332-40.

Appendix 1: Nurse Led Discharge Criteria

- Patients undergoing routine planned day surgery without any deviation from usual clinical course will be discharged once they meet nursing led discharge criteria without the need for post-operative medical review.
- The following criteria must be satisfied to meet nurse lead discharge:
  - Stable haemodynamics
  - Sedation Score = 0
  - Ability to ambulate safely
  - Tolerance of oral fluids / diet
  - Pain under control
  - Voiding without difficulty
  - Score ≥ 9 - Chung's Modified Post-Anaesthetic Discharge Scoring System.
- Deviation from expected clinical course; or concern from nursing, anaesthetic, medical or allied health staff may necessitate an unplanned admission. Factors may include:
  - Unexpected intraoperative findings
  - Early post-operative bleeding (more than a soaked through peri pad).
  - Significant opioid administration in PACU
  - Persistent post-operative pain or nausea not manageable for oral medication.
  - Need for further inpatient investigations post-operatively
  - Changes in social circumstances precluding discharge
  - Deterioration of the patient requiring Urgent Clinical Review, MET Call and Code Blue

Appendix 2: Follow up escalation protocol

SIGNS & SYMPTOMS:	ACTION / REFERRAL / ESCALATION:
• Chest pain or tightness (Chest pain lasting longer than 20 minutes). • Remarkable changes to health condition requiring treating team intervention / review • Severe heart palpitations • Unconsciousness [family reportable] • Vomiting blood • Sudden collapse at home post op • Severe post op pain whereby the patient must walk bent over or lie with their knees drawn to their chest	**Advise patient / carer to call ambulance '000' or to present to closest Emergency Department**
• **Persistent blood loss** from surgical site / Remarkable ooze on dressing/s • **Persistent vomiting** – Unrelieved with anti-emetics prescribed post op • **Signs of infection** high fever / sweats / chills / inflammation around wound site • If patient has stopped drinking and/ or passing urine • Any sudden, severe **pain scoring 9-10** unrelieved with prescribed analgesia regime. • Having trouble **in voiding** / changes to continence • Vaso-vagal.	**Escalate patient health status to Treating Unit**
• **Moderate pain** experienced – patient exhibiting misunderstanding / confusion of pain management plan • Patient **seeking advice** on re-commencement of at home medications eg: blood pressure, diabetic, blood thinners etc • Patient experiencing any **adverse effects** from discharge medications	**Refer to Pharmacy**
• Moderate pain being experienced – identify if the patient is / has taken any analgesia including dose and frequency & ensure patient understands analgesia regime • PONV – ascertain if patient able to tolerate diet and fluids and if antiemetic has been taken • Wound – current state of dressing – re inforce?	**Advice / recommendations to be given to patient in order to manage identified concern/s** **Further follow up call to be scheduled – follow up order to be created in epic**
• Nil clinical concern	**Patient to attend Outpatient Review as chartered / scheduled**