

Efficacy of The Mater Accelerated Recovery Strategy to Reduce Length of Stay After Arthroplasty

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Introduction:

In a study at The Mater Hospital, comparing subjects discharged home to those attending inpatient rehabilitation after hip or knee arthroplasty, there were no significant differences in patient reported outcomes 6 months after surgery¹. On the basis of this, the Mater Accelerated Recovery Strategy (MARS) was established. Its aim was

- To reduce acute inpatient length of stay (LOS) from 5-7 days to 3-4 days
- To increase the rate of discharge directly to home over extended inpatient rehabilitation

Methods:

Upon booking arthroplasty, eligibility for the MARS is determined using the Risk Assessment Prediction Tool (RAPT). If deemed suitable, subjects are given a Garmin activity tracker to establish a baseline step count prior to surgery, and to track step count for the first 6 weeks after surgery. For MARS subjects the acute care plan was for 3 attempts at standing and walking on the same day as surgery. MARS subjects were encouraged to dress in "day clothes" and sit out of bed as much as possible. Subjects are discharged directly home 3-4 days after arthroplasty and continue their rehabilitation in the outpatient setting.

Results:

Between February 2018 and September 2018, of the 350 hip and knee arthroplasty subjects, 193 subjects (55%) were deemed eligible for the MARS and 96 (50%) were recruited. 86 subjects (90%) were discharged to home within 3-4 days.

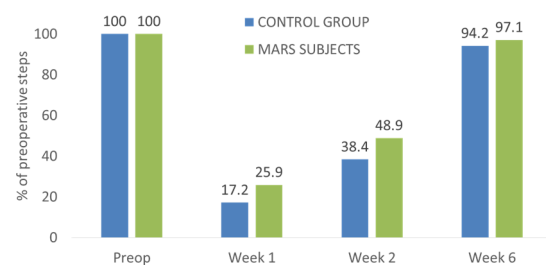
Satisfaction

95% of MARS subjects would participate in an accelerated rehabilitation program again.

At 6 weeks after surgery,

- 95% of subjects were satisfied with the hospital stay
- 94% were satisfied with the rehabilitation experience

Step count



- MARS subjects were taking significantly more steps in week 1 ($p=0.001$) and 2 ($p=0.005$) than non MARS subjects

Subjects in the MARS Group took
↑ 50% more steps in week 1
↑ 27% more steps in week 2
= equivalent at 6 weeks compared to Control Study Subjects

- MARS subjects were achieving a mean of 50% of their preoperative step count by week 2 and 97% of their preoperative step count by week 6.

Complications

- On an audit of 132 consecutive THR subjects, the incidence of complications was significantly lower in the MARS subjects (6%) compared to the Non MARS subjects (26%), $p=0.014$.
- The most common complications was hypotension (6-7%) and respiratory tract infection (5% non MARS subjects only)

Conclusions:

The MARS has been successfully implemented at the Mater Hospital in 2018. Prior to the MARS, only 7% of arthroplasty patients of the investigating surgeons elected discharge to home over inpatient rehabilitation. 97% of MARS subjects were discharged to home and did not attend inpatient rehabilitation. The MARS is associated with excellent activity levels and patient satisfaction and a low rate of complications within the first 6 weeks after surgery.