

Development and utilization of a standardized postoperative clinical care pathway for reduction in hospital length of stay following minimally invasive repair of pectus excavatum



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Introduction

- Recent trends in healthcare payment models encourage providers to improve quality and reduce cost (1)
- Application of standardized postoperative clinical care has been shown to reduce hospital length of stay (LOS) in major orthopedic surgery (2)
- The aim of this study was to develop and implement a standardized clinical care pathway (SCCP) for patients undergoing minimally invasive repair of pectus excavatum (MIRPE)
- We hypothesized that strict adherence to a SCCP would result in decreased LOS without negatively affecting post-discharge metrics

Methods

- A multidisciplinary team developed a SCCP specific to pectus surgery and included 42 measurements under 5 main components (mobility, lung recruitment, daily oral intake, and pain management) (Figure 1)
- Primary outcome was LOS measured in postoperative nights and secondary outcomes included post-discharge pain, mobility, and hospital readmission
- Pain management protocol was modified for the pathway and included the use of non-narcotic adjuvants, epidural analgesia with discontinuation of epidural on POD 2
- Pathway compliance was tracked through chart review

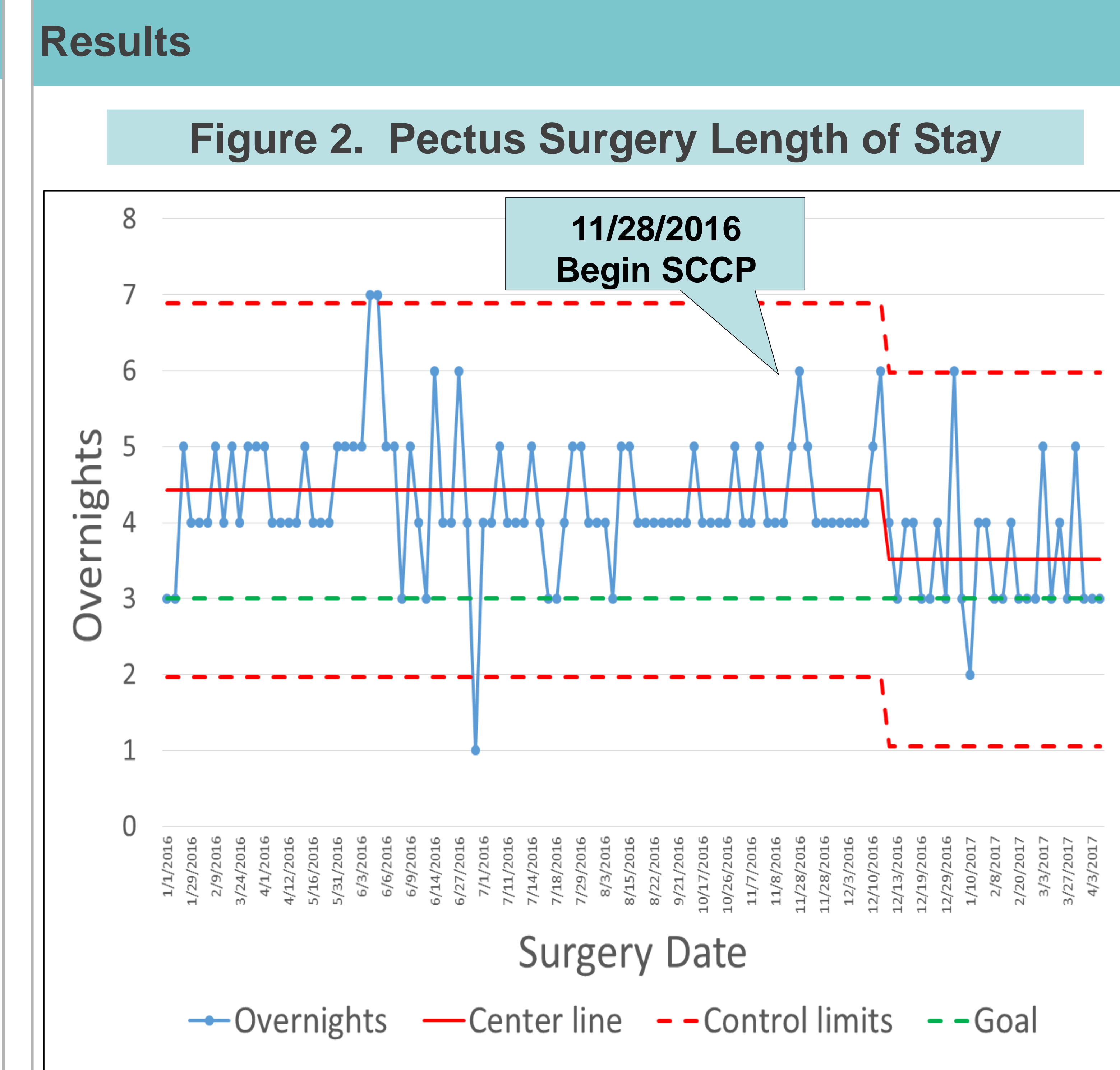
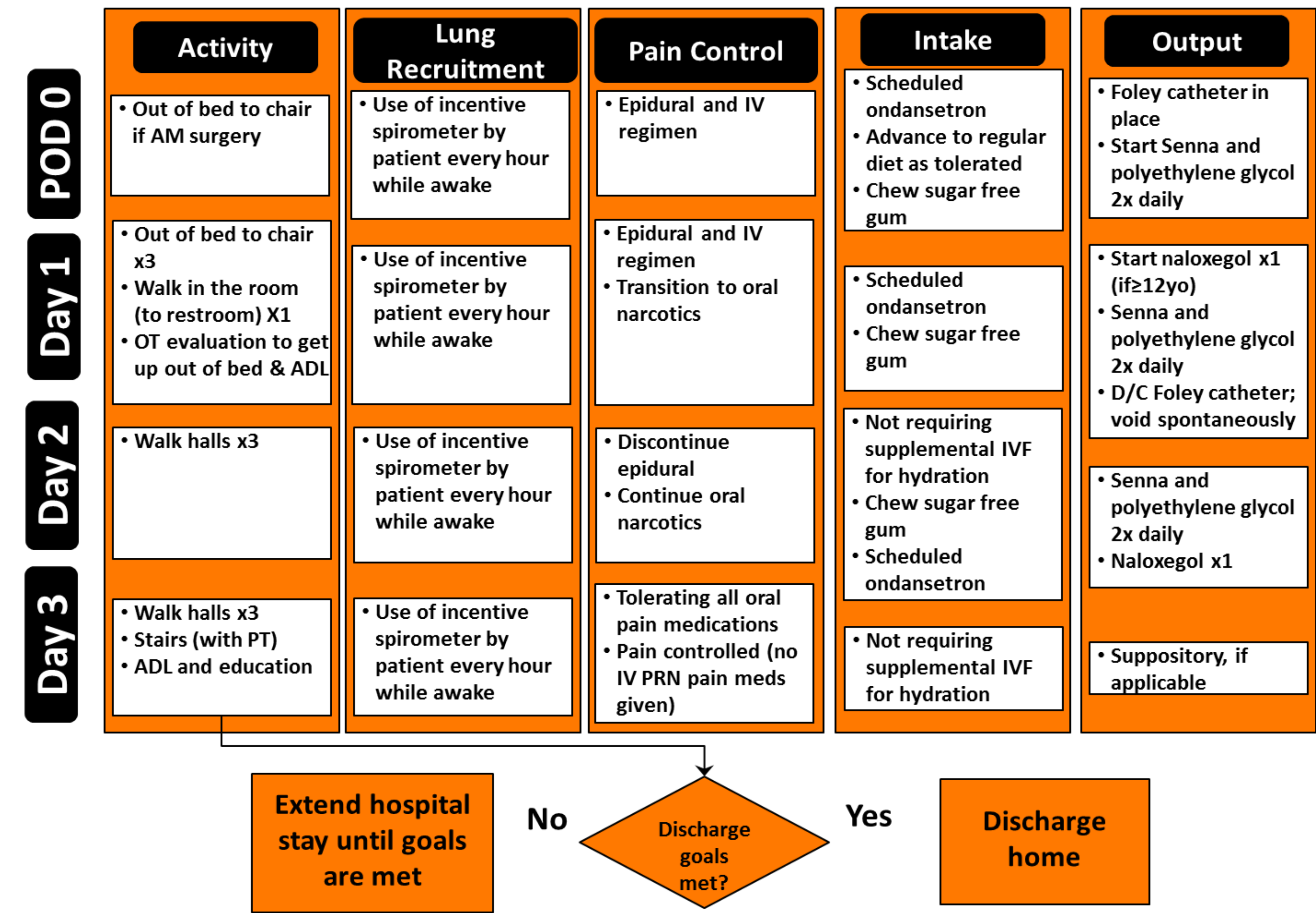
References

- Sood, N et al. Health Aff (Millwood) 2011; 30(9): 1708-1717
- Muhly, W et al. Pediatrics 2016; 137(4): e1-e9

Results

- Total patients included n=134 (n=78 pre-protocol and n=56 post-protocol) between January 2016 and June 2017
- Baseline compliance with protocol elements was 74%, compliance was increased to 96% within one month, and was sustained throughout study
- Reduction in LOS from median 4.5 overnights to 3 overnights following protocol implementation (Figure 2)
- 80% of patients reports NRS pain score 4 or less
- 70% reported mobility level of 7 or more (0=not mobile and 10=independent)
- There was no change in hospital readmission with 2.5% (n=2) before and 3.5% (n=2) after protocol implementation

Figure 1. Pectus Surgery Standardized Clinical Care Pathway



Conclusions

- A multidisciplinary standardized postoperative care pathway with multimodal analgesia was implemented for patients following minimally invasive pectus repair
- Strict adherence to the pathway was achievable and resulted in reduced time to functional recovery as reflected by shorter length of stay
- Most patients reported good pain control and mobility following discharge and there was no increase in hospital readmission