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 pro improve quality and reduce cost (1)
- Application of standardized postoperative clinical care has b shown to reduce hospital length of stay (LOS) in major orthop surgery (2)
- The aim of this study was to develop and implement a stanc clinical care pathway (SCCP) for patients undergoing minima invasive repair of pectus excavatum (MIRPE)
- We hypothesized that strict adherence to a SCCP would res decreased LOS without negatively affecting post-discharge

Methods

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

References

- 1) Sood, N et al. Health Aff (Millwood) 2011; 30(9): 1708-171
- 2) Muhly, W et al. Pediatrics 2016; 137(4): e1-e9

	Resul	Results				
roviders to	 Total patients included n=134 (n=78 pre-protocol and n= and June 2017 					
been opedic	 Baseline compliance with protocol elements wsa 74%, co one month, and was sustained throughout study 					
ndardized nally	 Reduction in LOS from median 4.5 overnights to 3 overn (Figure 2) 					
	 80% of patients reports NRS pain score 4 or less 					
esult in metrics	 70% reported mobility level of 7 or more (0=not mobile and 					
	 There was no change in hospital readmission with 2.5% protocol implementation 					
		Figure 1. Pe	ectus Surg	ery S	Standardize	
etus ponents gement)	POD 0	Activity • Out of bed to chair if AM surgery	Lung Recruitmen • Use of incentive spirometer by		Pain Control Epidural and IV regimen	
nts and	PO	• Out of bed to chair	patient every hou while awake		Epidural and IV	
v, and	Day 1	x3 • Walk in the room (to restroom) X1 • OT evaluation to get up out of bed & ADL	 Use of incentive spirometer by patient every hou while awake 		regimen Transition to oral narcotics	
esia with	Day 2	• Walk halls x3	• Use of incentive spirometer by patient every how while awake		Discontinue epidural Continue oral narcotics	
4 7	Day 3	 Walk halls x3 Stairs (with PT) ADL and education 	• Use of incentive spirometer by patient every how while awake		Tolerating all oral pain medications Pain controlled (no IV PRN pain meds given)	
17		stay (d hospital until goals re met	No <	Discharge goals met?	

and n=56 post-protocol) between January 2016

a 74%, compliance was increased to 96% within

3 overnights following protocol implementation

mobile and 10=independent)

ith 2.5% (n=2) before and 3.5% (n=2) after

dardized Clinical Care Pathway Intake Output Control Scheduled • Foley catheter in I and IV ondansetron place Advance to regular Start Senna and

polyethylene glycol

Start naloxegol x1

polyethylene glycol

• D/C Foley catheter;

void spontaneously

polyethylene glycol

2x daily

(if≥12yo)

2x daily

Senna and

Naloxegol x1

· Suppository, if

applicable

2x daily

Senna and

- diet as tolerated Chew sugar free gum Scheduled ondansetron
 - Chew sugar free
 - Not requiring supplemental IVF for hydration Chew sugar free gum
 - Scheduled ondansetron
 - Not requiring supplemental IVF for hydration

Yes

Discharge home

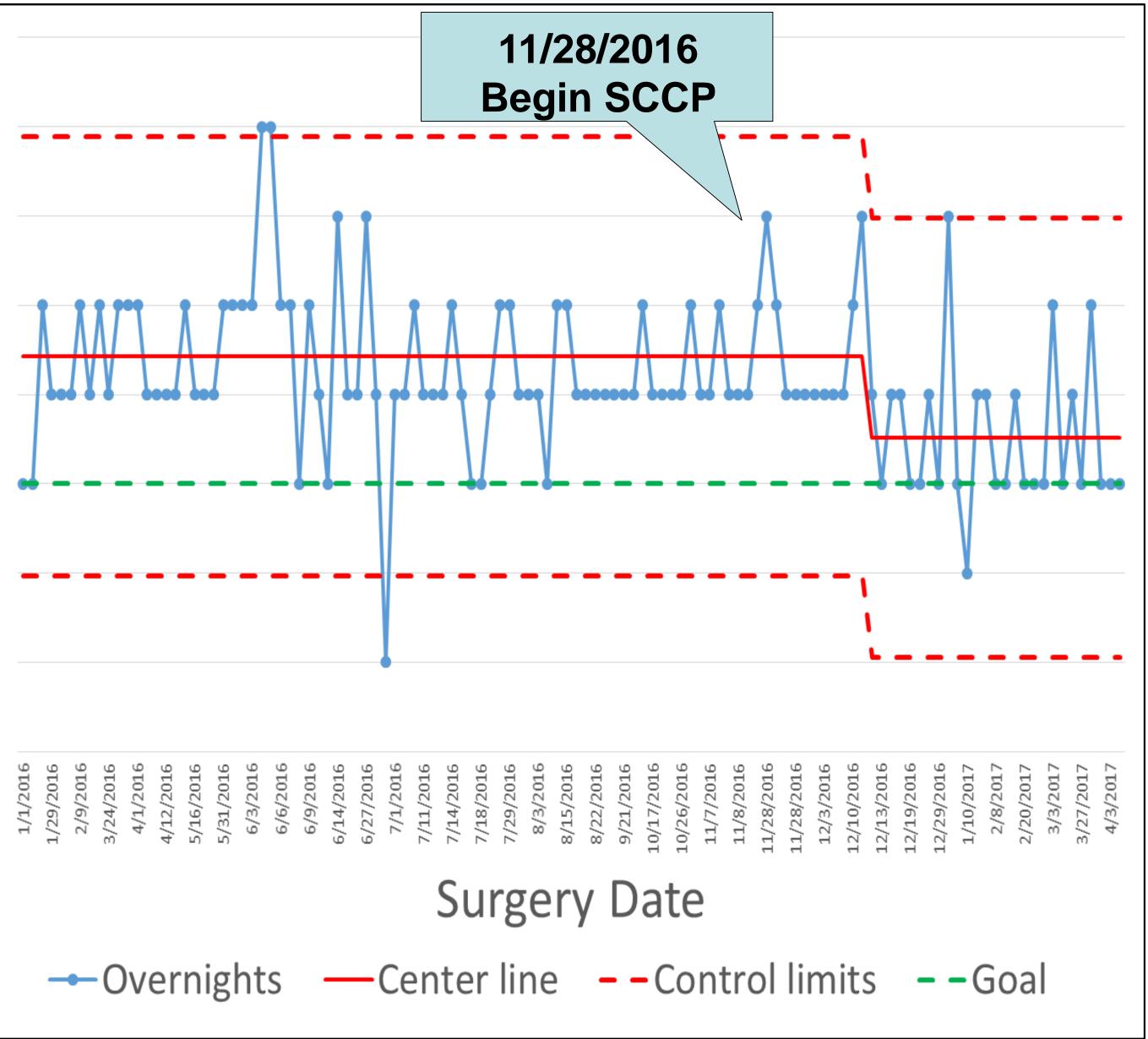
Results ы В Ð

Conclusions

- stay







• 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

 Most patients reported good pain control and mobility following discharge and there was no increase in hospital readmission