

# Title: Enhanced Recovery After Surgery (ERAS) – Cystectomy Implementation

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## 1 Background

Enhanced Recovery After Surgery (ERAS) is a perioperative care pathway that standardizes patient recovery and provides protocols to minimize post-surgical stress response. Studies show ERAS decreases length of stay (LOS) following elective surgery by 30% without increasing readmission rates (Greco et al., 2014). A cystectomy-specific, ERAS pathway was implemented at JHH to improve patient outcomes.

## 2 Objectives

ERAS Cystectomy pathway aims:

- Reduce length of stay by  $\geq 2$  days
- Improve patient satisfaction scores
- Reduce hospital costs
- Standardize Care
- Prevent Complications

## 3 Methods

ERAS Cystectomy pathway components:

### PreOp

- "Cystectomy - ERAS" procedure code assigned in OR schedule to identify patients on the pathway.
- Patient education, engagement and participation
- Optimize perioperative nutrition by discontinuing NPO requirements the night before surgery and by promoting electrolyte balance and hydration with oral fluids the morning of surgery.

### ERAS PreOp Medications

**Acetaminophen** – nonopioid analgesic, for pain prophylaxis.

**Gabapentin** – analgesic adjunct

**Scopolamine** – anticholinergic antiemetic to reduce spasms as well as nausea and vomiting.

**Alvimopan** – gastric stimulant

### IntraOp

- Standardized perioperative anesthetic plan to manage pain while minimizing opioid administration. No anesthetic gases.
- Goal- Directed fluid therapy (normovolemia)—reduces stress response and preserves immune function.

### PostOp

- "ACCM Cystectomy Post-Op Pain ERAS Orders" orderset. Bupivacaine epidural with no narcotics.
- Early mobilization, oral intake and diet advancement from clear liquids 2 hours postop with advancement as tolerated.
- Multimodal pain management
- Alvimopan – administered bid to promote return to a normal diet.

## 4 Results

Process measures from 20 patient charts reviewed with ERAS Cystectomy surgeries 11/24/2015-2/22/2016.

### PreOp

- 60% of patients drank Gatorade prior to surgery.
- 50% of patients received the Pre-Op Medicine Bundle (Acetaminophen, Gabapentin and Scopolamine).
  - 3 received 2 out of 3 bundle medications
  - 5 did not receive a med in the bundle
- 50% had "Cystectomy - ERAS" procedure code assigned in OR schedule.

### IntraOp

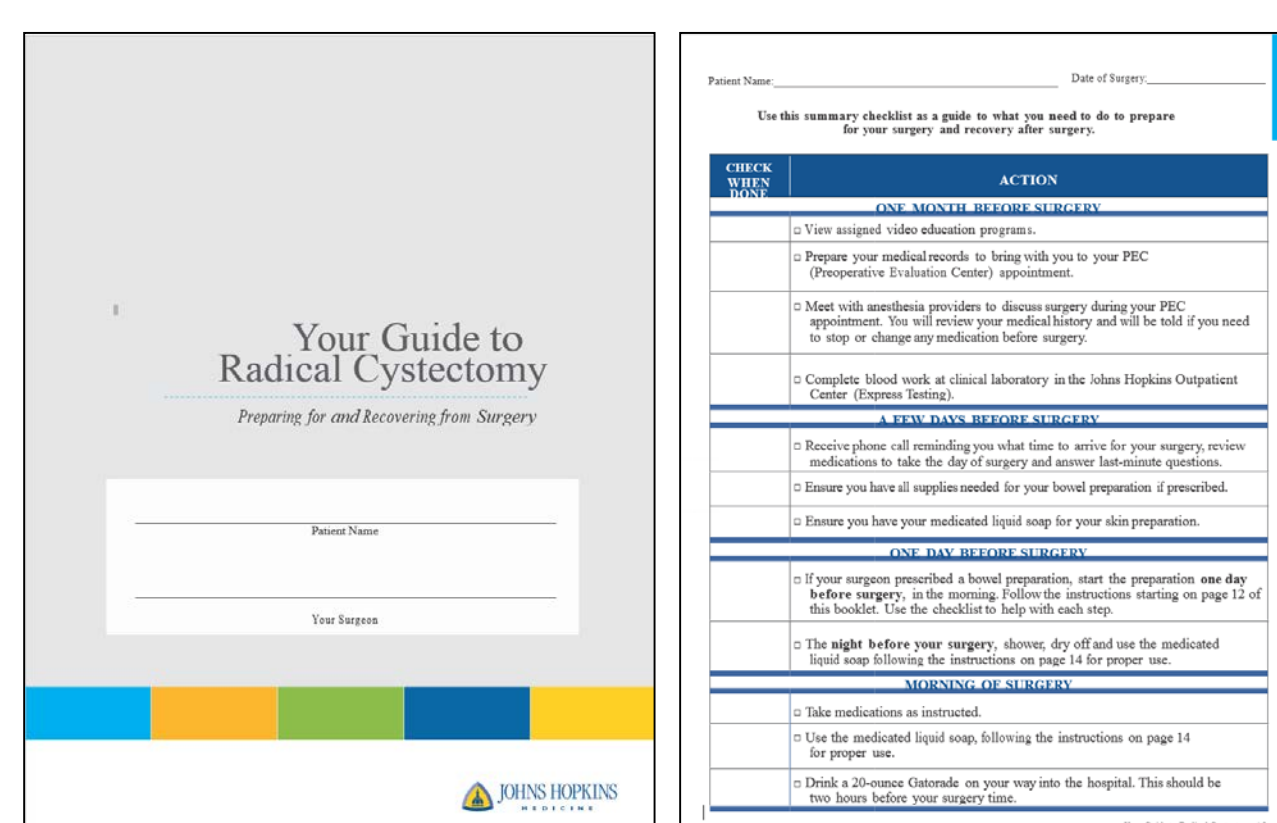
- 70% received  $\leq 3$  liters of Crystalloids

### PostOp

- 85% had the "ACCM Cystectomy Post-Op Pain ERAS Orders" orderset assigned.
- 84% (16 of 19 that had an epidural) received Bupivacaine-only epidurals, without Fentanyl.
- 45% had an Highest-Level-of-Mobility (HLM) score  $\geq 8$  on Post-Op Day 1 (POD1).
- 60% met HLM goal of  $\geq 8$  on POD2.
- 20% of patients received Fentanyl or Hydromorphone via PCA anytime during Post-Op Days 0-3.
- 40% (8) received Alvimopan bid up to 7 days
  - Half of the 12 patients that did not receive Alvimopan bid, had an NG tube during their stay.

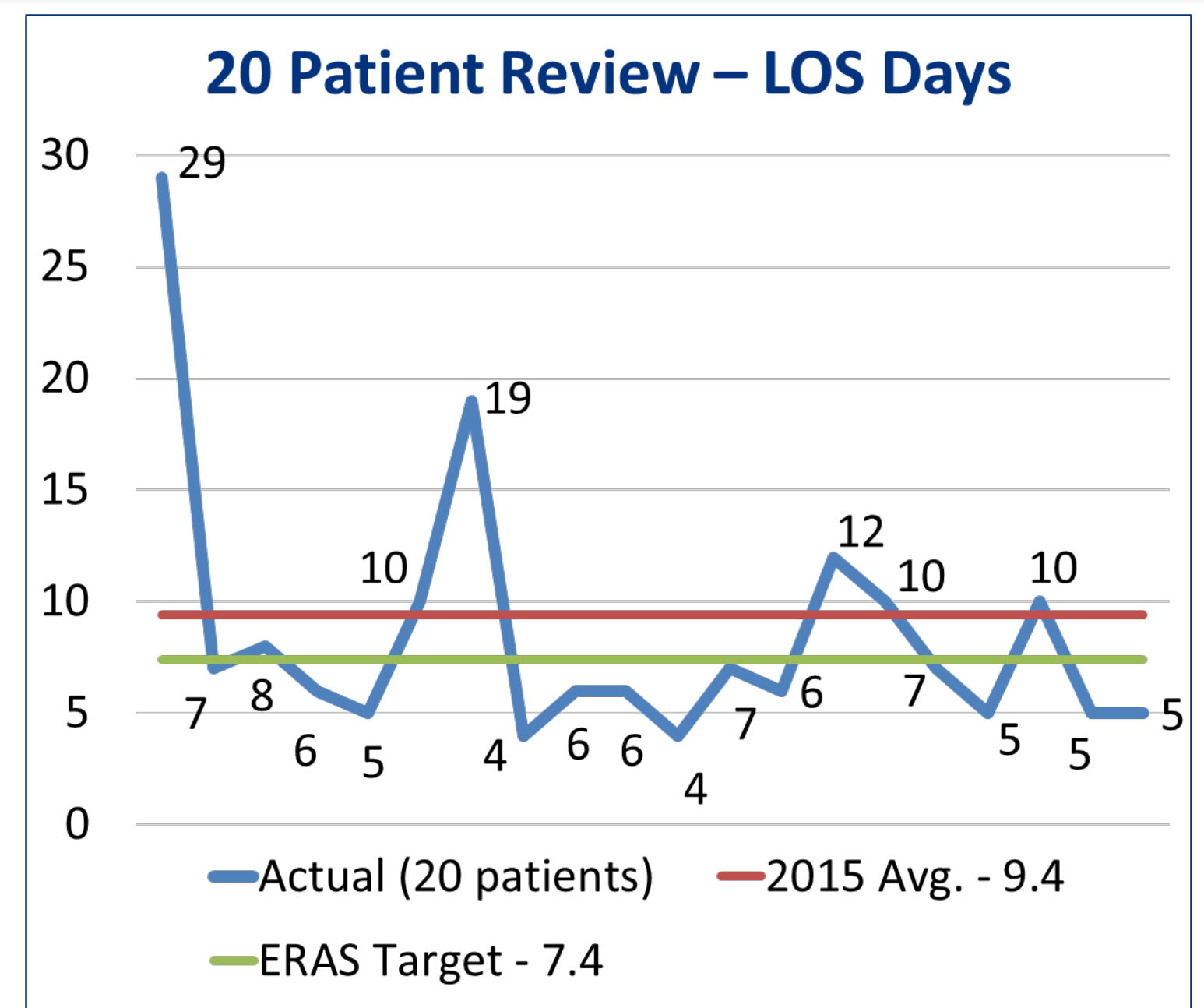
### Complications

- 6 patients (30%) required an NG tube placement postop.
- 10% (2 patients with outlier LOS) experienced ileus.



### Patient education packet.

Cystectomy surgery pre-, intra- and post-surgery check lists, instructions and what-to-expect information.



## 5 Conclusions

The average LOS for these 20 patients was 8.6 days; however, the average was 6.8 days with 2 high outliers removed, which is a 2.6 day reduction versus 2015. The aim was to reduce LOS by 2 days for an average of 7.4 days. Outliers impact the average.

To meet the ERAS aims, both ERAS ordersets need to be assigned to increase adherence to the interventions.

Data feedback to the clinicians involved is needed to improve compliance.

Patient satisfaction increased likely due to the education packet.

## 6 Future Directions

ERAS pathways will be created for other surgical procedures to improve patient outcomes for those surgeries as well.

Lessons learned from rolling out the ERAS pathways for Cystectomy will improve future ERAS pathway roll outs enabling the benefits to be realized more quickly.

## 7 References

Greco, M., Capretti, G., Beretta, L., Gemma, M., Pecorelli, N., & Braga, M. Enhanced recovery program in colorectal surgery: a meta-analysis of randomized controlled trials. *World Journal of Surgery* 2014, 38(6), 1531-1541.

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