

HIMSS[®]19

CHAMPIONS OF HEALTH UNITE

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Perioperative Care, Enhanced Recovery After Surgery and Reducing Opioid Dependency

Session #BP2, February 11, 2019

Julie K Marosky Thacker, MD, Associate Professor of Surgery, Duke Health

Christopher J Vail, PA-C, Director of Clinical Informatics, Duke Surgery, Duke Health



Conflict of Interest

Julie K. Marosky Thacker, MD

Christopher Vail, PA-C, MMCi

Has no real or apparent conflicts of interest to report.

Agenda

- Review paper based start of enhanced recovery
- Communication strategies
- Education strategies
- Patient engagement with apps
- Ordering strategies
- Outcomes



Learning Objectives

- Illustrate how to enhance care coordination by capturing discrete data of patient surgical status and sharing across the care continuum
- Discuss how to leverage pre-visit planning and monitor care plan compliance to prevent surgical complications
- Discuss how to improve patient education and outcomes through administering ERAS specific video educational content prior to the surgical procedure
- Outline the benefits to utilizing standard orders for epidurals instead of opioids in peri-op process



Enhanced Recovery Beginnings

Paper based project:

Reduced Length of Hospital Stay in Colorectal Surgery after Implementation of an Enhanced Recovery Protocol

Timothy E. Miller, MB, ChB, FRCA,* Julie K. Thacker, MD,† William D. White, MPH,* Christopher Mantyh, MD,† John Migaly, MD,† Juying Jin, MD,* Anthony M. Roche, MB, ChB, FRCA,* Eric L. Eisenstein, DBA,† Rex Edwards,§ Kevin J. Anstrom, PhD,|| Richard E. Moon, MD, CM, MSc, FRCP (C), FACP, FCCP,* Tong J. Gan, MD, MHS, FRCA, Li.Ac,*¶ and ¶Enhanced Recovery Study Group

BACKGROUND: Enhanced recovery after surgery (ERAS) is a multimodal approach to perioperative care that combines a range of interventions to enable early mobilization and feeding after surgery. We investigated the feasibility, clinical effectiveness, and cost savings of an ERAS program at a major U. S. teaching hospital.

METHODS: Data were collected from consecutive patients undergoing open or laparoscopic colorectal surgery during 2 time periods, before and after implementation of an ERAS protocol. Data collected included patient demographics, operative, and perioperative surgical and anesthesia data, need for analgesics, complications, inpatient medical costs, and 30-day readmission rates.

RESULTS: There were 99 patients in the traditional care group, and 142 in the ERAS group. The median length of stay (LOS) was 5 days in the ERAS group compared with 7 days in the traditional group ($P < 0.001$). The reduction in LOS was significant for both open procedures (median 6 vs 7 days, $P = 0.01$), and laparoscopic procedures (4 vs 6 days, $P < 0.0001$). ERAS patients had fewer urinary tract infections (13% vs 24%, $P = 0.03$). Readmission rates were lower in ERAS patients (9.8% vs 20.2%, $P = 0.02$).

DISCUSSION: Implementation of an enhanced recovery protocol for colorectal surgery at a tertiary medical center was associated with a significantly reduced LOS and incidence of urinary tract infection. This is consistent with that of other studies in the literature and suggests that enhanced recovery programs could be implemented successfully and should be considered in U.S. hospitals. (Anesth Analg 2014;118:1052-61)



Enhanced Recovery Beginnings

Brief review of the results:

Pre Intervention DATA 2009-March 2010*

Median Avg. LOS: 7 days

30 Day Readmission: 20.2%

UTI Rate: 24%

Post Protocol Intervention DATA June 2010 to Dec 2010*

Median Avg. LOS: 5 days

30 Day Readmission: 9.8%

UTI Rate: 13%



Enhanced Recovery Transition to EHR

Began as a CPOE approach

- Standardized orders / order sets

Communicating appropriate patients on protocol difficult

- Information +/- part of nursing handoff
- Information +/- part of provider handoff
- Day of surgery / pre-op holding verbal based

Need for identifying patients early in their surgical journey became apparent to improve protocol compliance and improve coordination

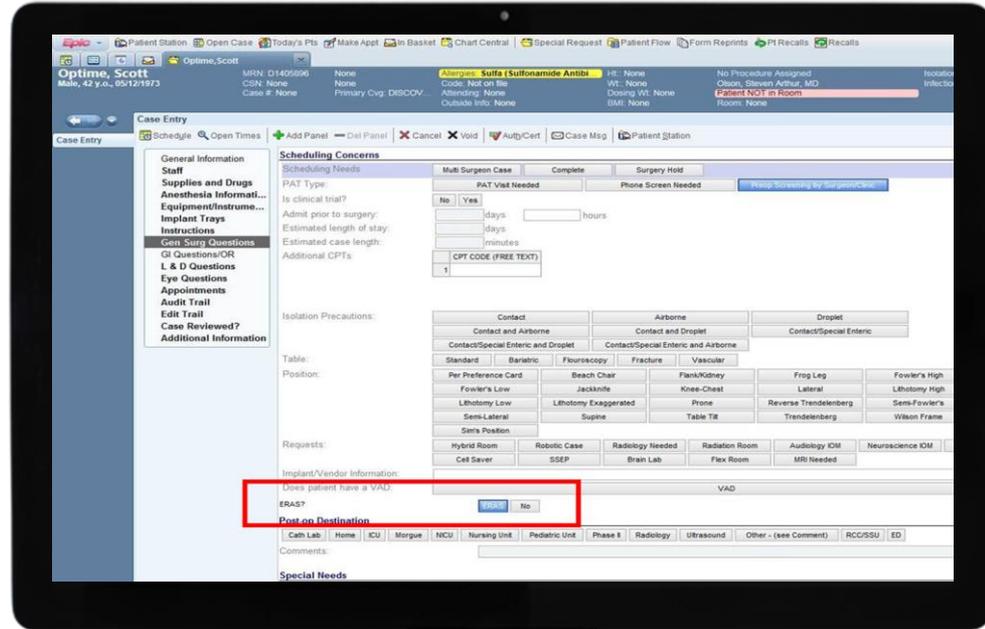
- Time sensitive elements of protocol



Communication Strategies

Patients identified as ERAS during surgical case posting:

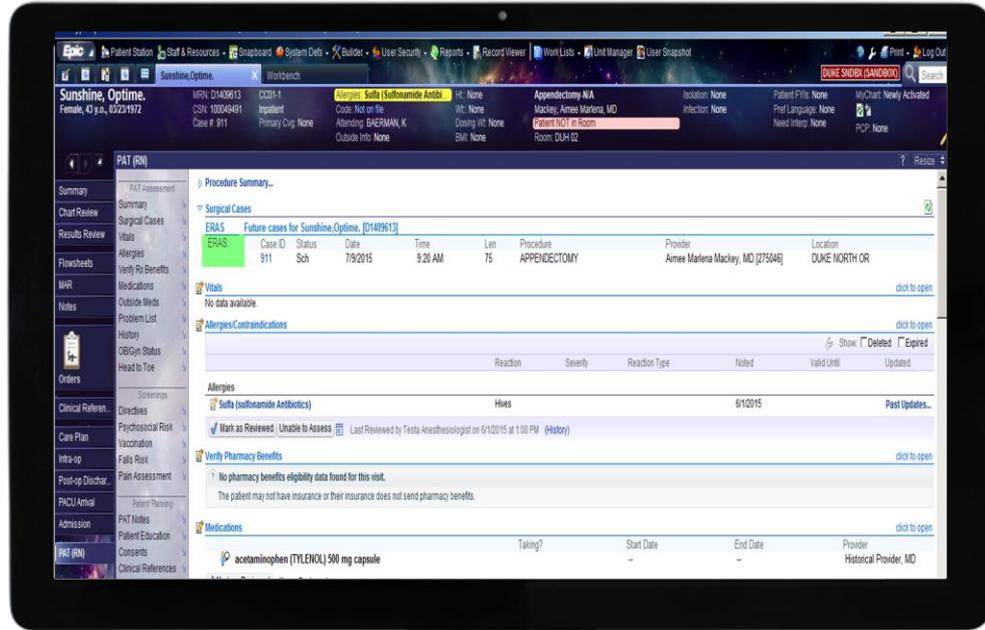
Improving care coordination by capturing discrete data of patient surgical status and sharing across the care continuum.



Communication Strategies

Discrete identification allows for signal to be transmitted throughout the patients many stops

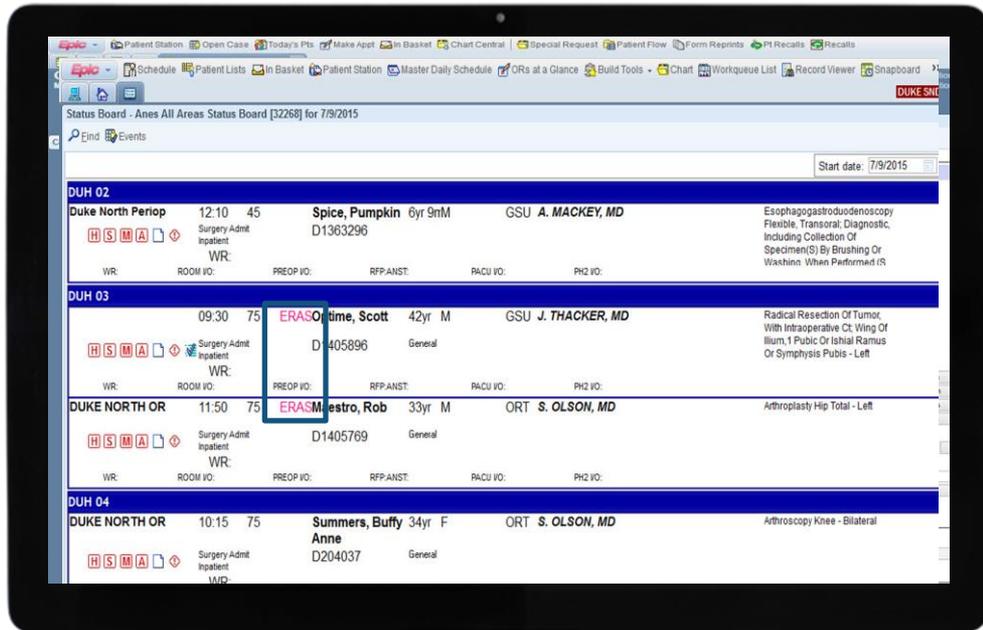
Patient ERAS status evident when in the Pre-Anesthesia testing. Helps to ensure that anesthesia planning is consistent with ERAS process.



Communication Strategies

Day of Surgery / Pre-Op Holding:

Patient ERAS and Epidural status visually identified on the Perioperative Status board.



Communication Strategies

Inpatient Units:

ERAS flags continue for bedside nursing and rounding physicians to be alerted to a protocol patient

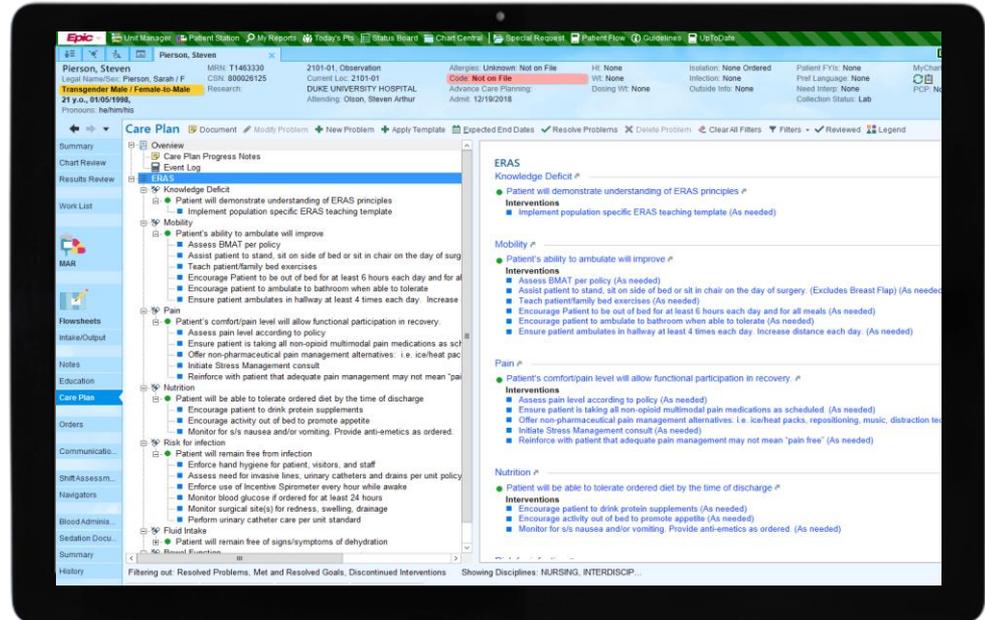
The screenshot shows the Epic Patient Lists interface. The table displays patient information including Unit, Room/Bed, Patient Name, Age/Gender, ERAS (highlighted in red), Problem, Isolation, and Code Status. The ERAS column contains flags for several patients, indicating they are protocol patients.

Unit	Room/Bed	Patient Name	Age/Gender	ERAS	Problem	Isolation	Code Stat.	New Text	Ralt Flag	New Note	Costk Note	Costk Ord
DUH N2100 GENERAL SURGERY	2114/2114-01	Test, Kristen	34 y.o. / Female	—	Pain and swelling of knee	—	Not on file	—	—	—	—	—
DUH N2100 GENERAL SURGERY	2101/2101-01	Pierson, Sarah "Steven"	21 y.o. / Transgender Male /...	—	None	—	Not on file	—	—	—	—	—
DUH N2100 GENERAL SURGERY	2121/2121-01	Test, Raymona	22 y.o. / Female	—	1/5 of head of fetus palpable...	Airborne, Contact	Not on file	—	—	—	—	—
DUH N2100 GENERAL SURGERY	2108/2108-01	Granger, Hermione	40 y.o. / Female	—	Sickle cell anemia with crisis...	—	Not on file	—	—	—	—	—
DUH N2100 GENERAL SURGERY	2105/2105-01	Inpatient, Allyson	25 y.o. / Female	—	Mild asthma	Droplet, Contact	Not on file	—	—	—	—	—
DUH N2100 GENERAL SURGERY	2104/2104-01	Willow, Goodkidneys	42 y.o. / Male	—	None	—	Not on file	—	—	—	—	—
DUH N2100 GENERAL SURGERY	2106/2106-01	Willow, Impairedkidneys	66 y.o. / Male	—	Psychiatric disorder /Additional...	—	Not on file	—	—	—	—	—

Education Strategies

EHR based Care Plans and Education Templates Developed

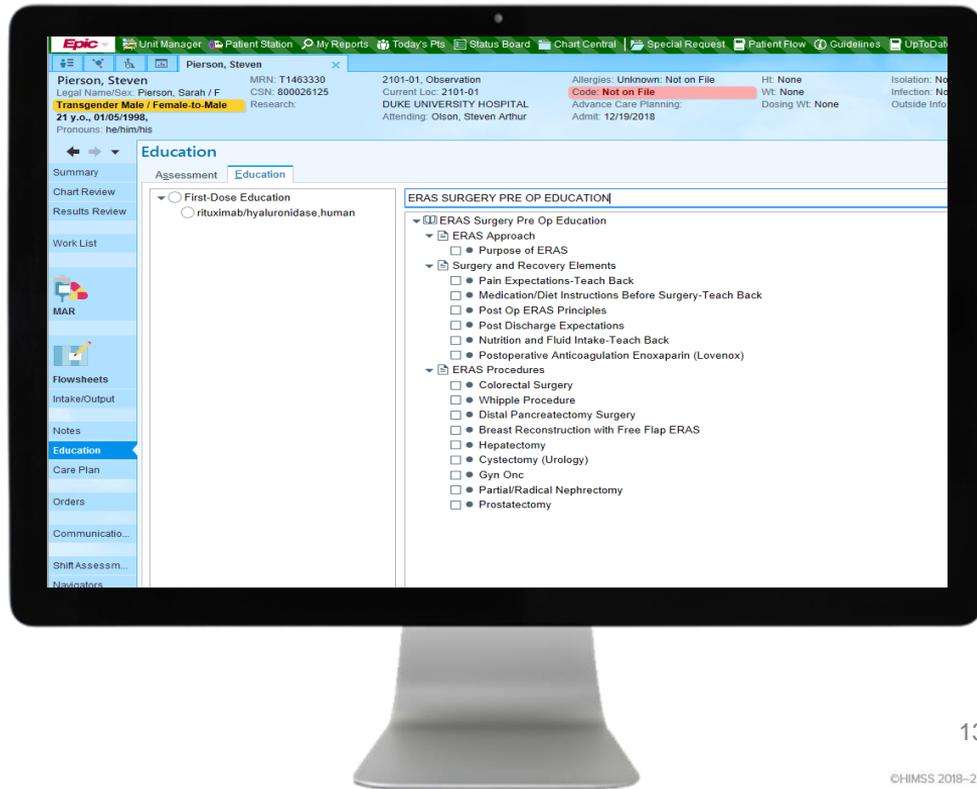
- Allows nurse to adhere to protocol and truly know what's next for the patient
- Reviewing goals met easy perform at a glance without in depth chart reviews for individual measures / goals



Education Strategies

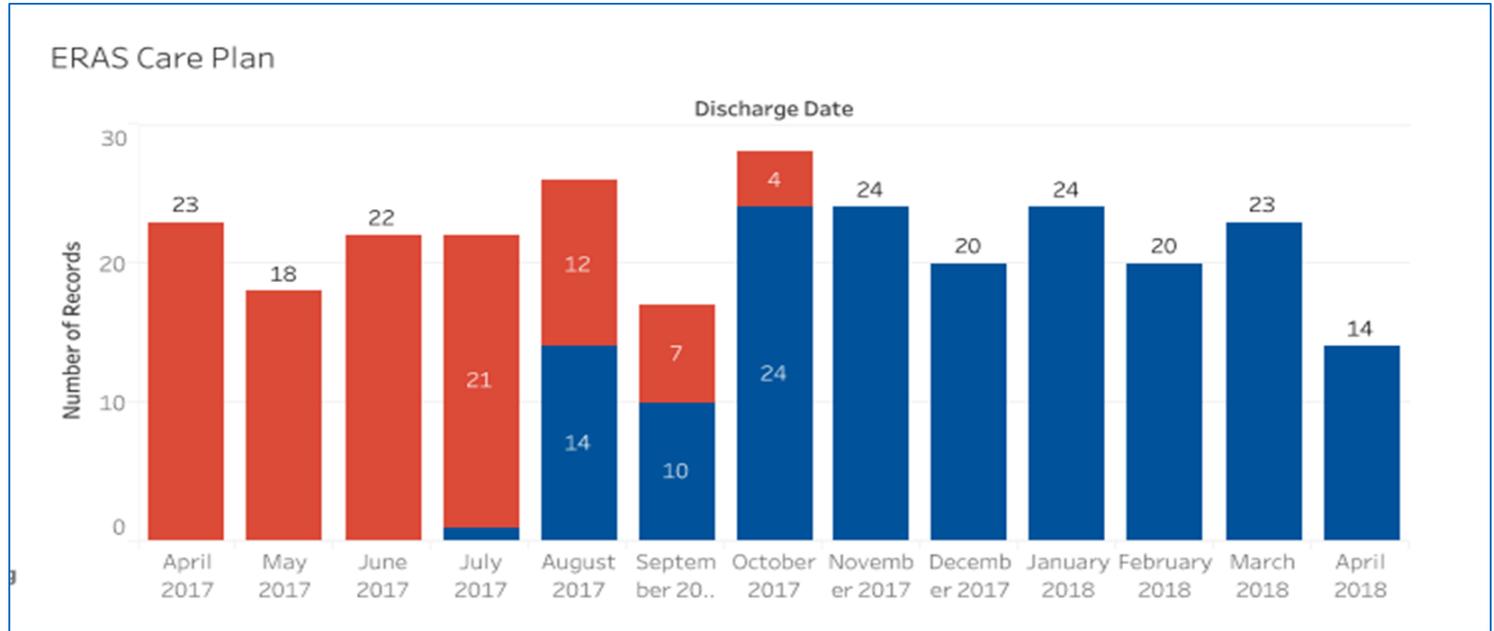
Education Templates that span across environments

- Allows nurses in multiple settings to provide appropriate education to the patient
- Allows for review / reinforcement of topics covered on a per patient basis



Education Strategies

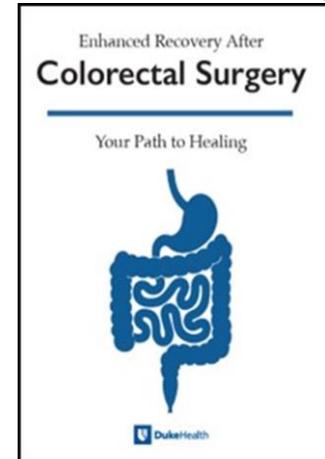
Process Measures to Track Use of HIT tools:
ERAS for DUH Prostatectomy Go Live September 2017



Patient engagement with apps

Written materials provided pre-op and reinforced during hospitalization

- Patients without access to technology
- Multidisciplinary development



iOS application also available to walk patient through pre-surgery and post-op phases of their recovery

- Videos
- Activity tracker
- More

Patient engagement with apps

Available on the Apple Store:

10:32 AM Mon Jan 14

< Duke Institute for Health Innovation

DukeCare: Colon&Rectal Surgery
Duke Institute for Health Innovation

GET

Not Enough Ratings. 12+ Age

Offers iPhone App

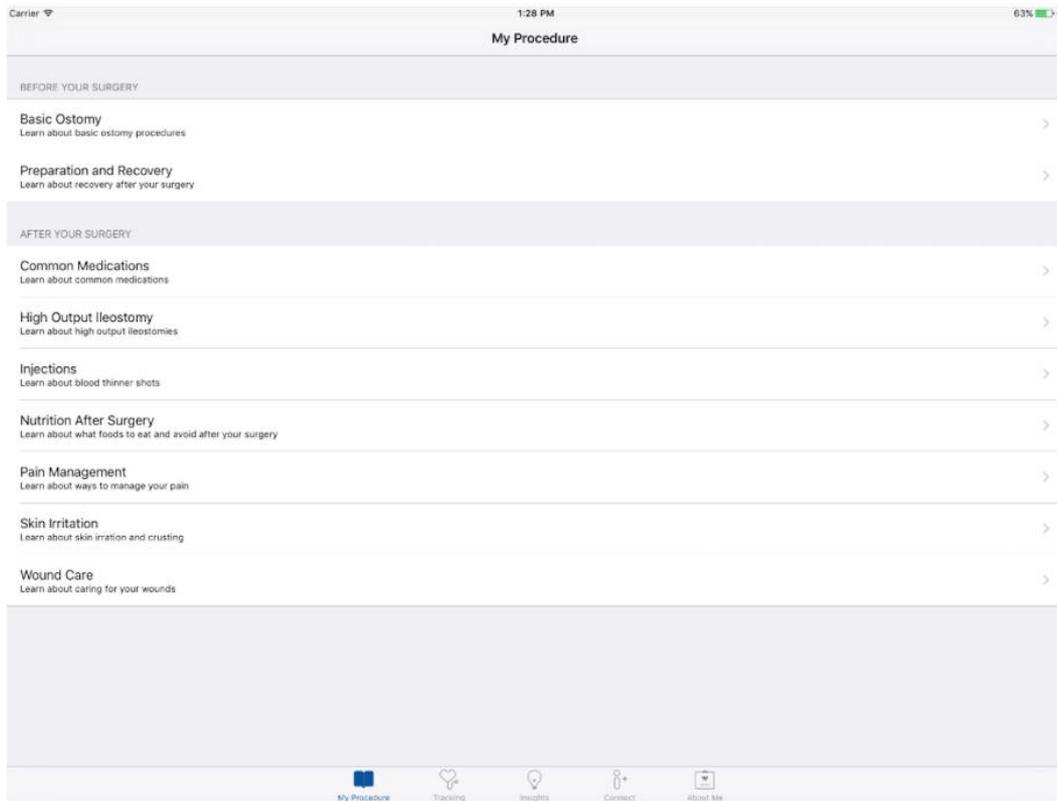
Duke Care supports Colon & Rectal Surgery patients with appropriate resources, both education and support applications, for their health events.
Duke Care relies uses the CareKit API to allow you to keep a diary of how you feel each day.

Duke Institute for He...
Developer

Today Games Apps Updates Search

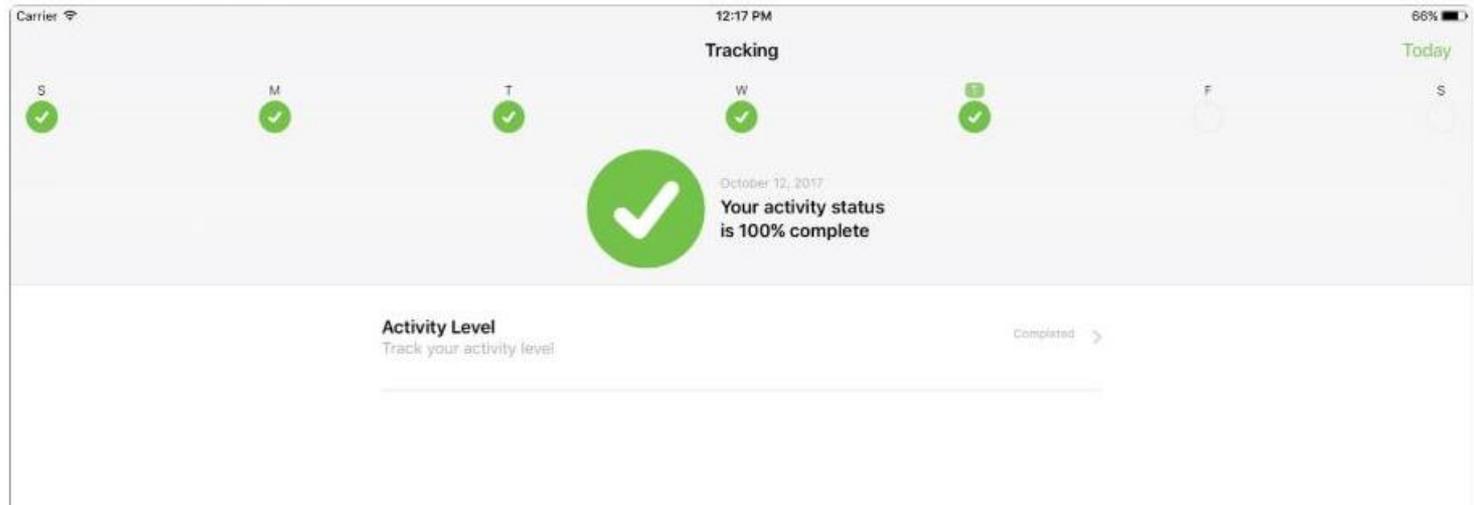
Patient engagement with apps

Pre and post-op information available



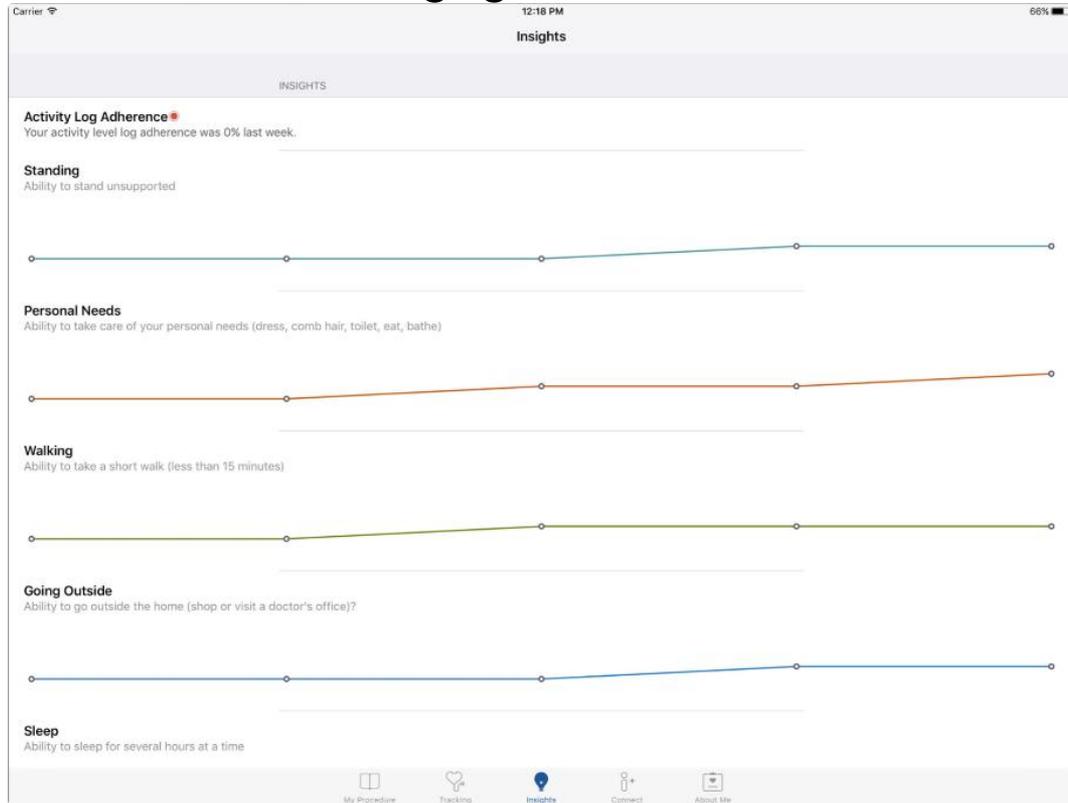
Patient engagement with apps

Trackers for enhanced engagement:



Patient engagement with apps

Trackers for enhanced engagement:



Patient engagement with apps

Easy setup and secure data:



Your Information

Your information is kept private.

Any information you provide is not shared with Duke.



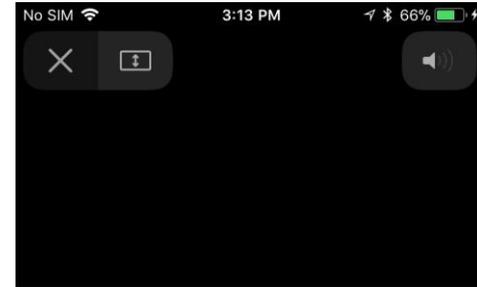
Next



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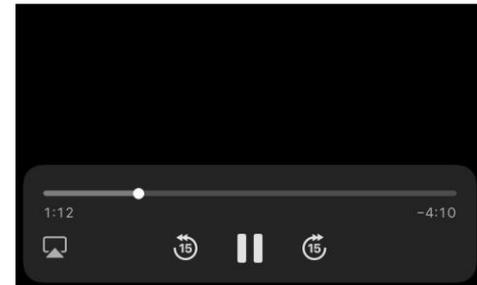
Patient engagement with apps

Introductory videos & ostomy overview videos:



The surgeon will bring the intestine up to the skin.

Then turn it back on itself, and attach it to the skin.



Ordering strategies in Peri-Op

Multimodal pain control key tenant of ERAS strategy

- Reducing opioids a goal across all programs

Analysis in PACU revealed patients receiving high amounts of opioids despite epidural in place

- Nursing gap in training on education and epidural protocols
- Closed gap and allowed for incorporating into RN practice

Orders required for new protocols and guidance

- New PACU orders available for Anesthesiologist
- By enhancing training for epidurals, other medication classes were also incorporated into PACU RN practice (lidocaine drips, etc.)



Ordering strategies in Peri-Op

Epic Patient Station | In Basket | Chart | Master Daily Schedule | ORs at a Glance | My Cases | Status Board | Prep for Surgery | Chart Central | Snapboard | Chart/Correct

Radianttest, Skywarp | MRN: D1468675 | ASC Periop Pool Room, Surgery Be... | Allergies: Unknown: Not on File | HT: None | Isolation: None Ordered | Patient FYIs: None | MyChart: Dec
 Male, 40 y.o., 04/01/1978, | CSN: 800000439 | Current Loc: DUKE NORTH DIAGN... | Code: Not on File | WT: None | Infection: None | Pref Language: English | Need Intep: No | Collection Status: Unit | PCP: None
 DUKE UNIVERSITY HOSPITAL | Advance Care Planning: | Dosing Wt: None | Outside Info: None
 Admit: 01/12/2018 | Attending: BAKER, J

Order Sets

Please use this consult for complex pain assessments, medication recommendations, and/or the management of ketamine. Consult AP's RN for the management of epidural and regional catheters.

Consult to Pain Management MD

Medications

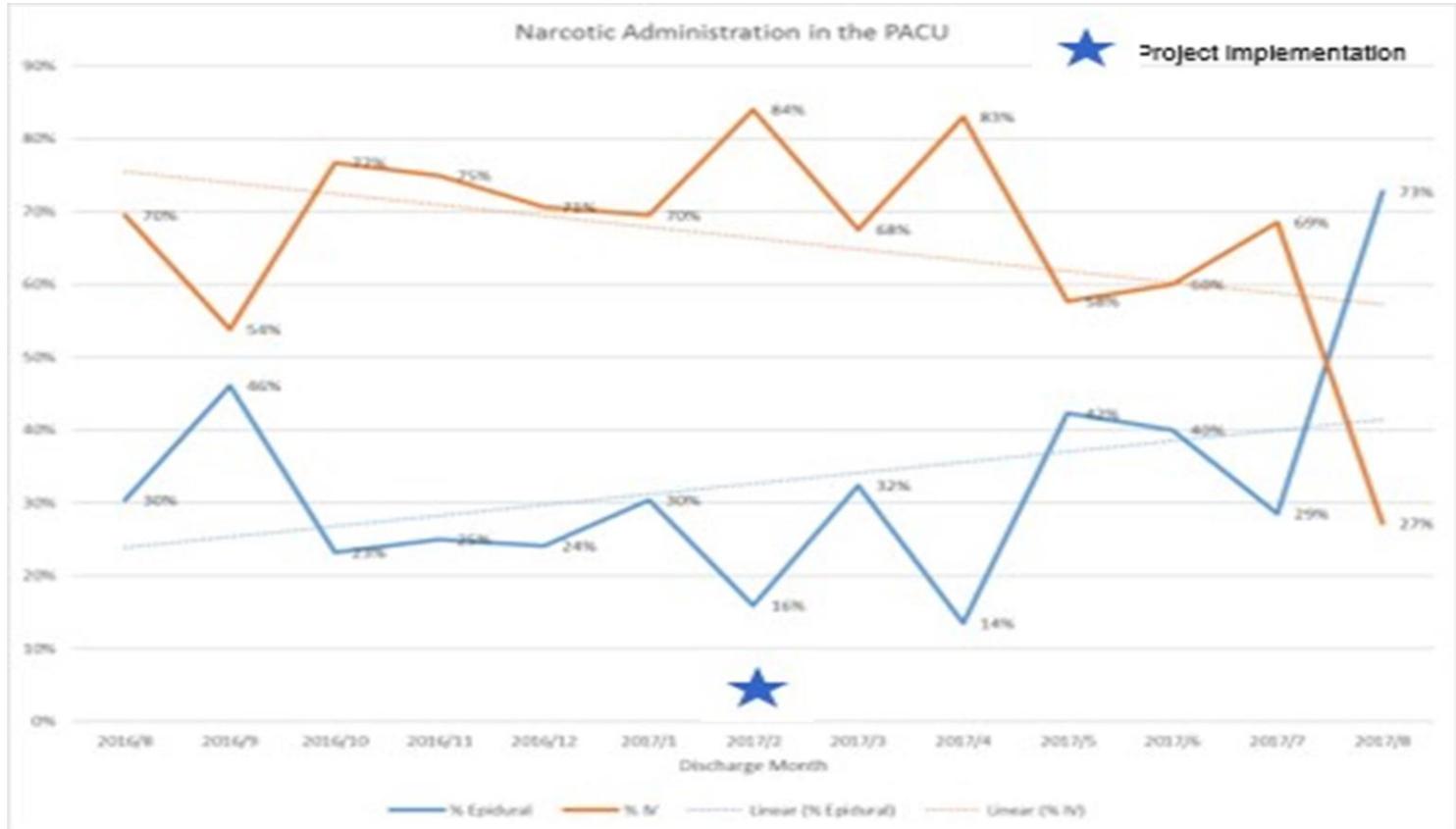
- ▼ **Link (Epidural/PCEA)**
 - Management of postoperative pain; Postoperative epidural analgesia with local anesthetics and opioids (UpToDate)
 - ▶ **Epidural Catheters - Local Anesthetics Only - DUH** [Click for more](#)
 - ▶ **Epidural Catheters - Opioid Only - DUH** [Click for more](#)
 - ▶ **Epidural Catheters - Local Anesthetics & Opioid (+/- cloNIDine) - DUH** [Click for more](#)
 - ▼ **Epidural Catheters - Local Anesthetics & Opioid ABOVE T8 with PACU bolus order**
 - bupivacaine-HYDRomorphone-NaCl (PF) 0.625 mg/mL (0.0625 %)-3 mcg/mL
 - bupivacaine-HYDRomorphone-NaCl (PF) 0.625 mg/mL (0.0625 %)-10 mcg/mL
 - bupivacaine-HYDRomorphone-NaCl (PF) 1.25 mg/mL (0.125 %)-10 mcg/mL
 - bupivacaine-HYDRomorphone-NaCl (PF) 1.25 mg/mL (0.125 %)-25 mcg/mL
 - ▼ **Epidural Catheters - Local Anesthetics & Opioid BELOW T8 with PACU bolus order**
 - bupivacaine-HYDRomorphone-NaCl (PF) 0.625 mg/mL (0.0625 %)-3 mcg/mL
 - bupivacaine-HYDRomorphone-NaCl (PF) 0.625 mg/mL (0.0625 %)-10 mcg/mL
 - bupivacaine-HYDRomorphone-NaCl (PF) 1.25 mg/mL (0.125 %)-10 mcg/mL
 - bupivacaine-HYDRomorphone-NaCl (PF) 1.25 mg/mL (0.125 %)-25 mcg/mL
- ▶ **Antihistamines** [Click for more](#)
- ▶ **Epidural Adjuvants - DUH** [Click for more](#)
- naloxone (NARCAN) 400 mcg in sodium chloride 0.9% 100 mL infusion
 0.25 mcg/kg/hr, Intravenous, Continuous PRN, Itching, Starting Today at 0924, For 30 days
 Discontinue when epidural is discontinued. Notify pharmacy for initial or replacement fluid bags.

Orders from Order Sets

- ANE Epidural PCEA - DUH**
 Vital Signs
 Routine, As directed starting Today, Until Specified
 Every 2 hours for first 24 hours, then per unit protocol until epidural discontinued.
- Respiratory Rate (RR)**
 Routine, As directed starting Today, Until Specified
 Every 2 hours x 8 hours and then every 4 hours until epidural is discontinued.
- Pulse Oximetry**
 Routine, Every 2 hours First occur at 1000 Until Specified
 Until epidural is discontinued
- RASS - Assess per protocol**
 Routine, Until discontinued starting 0925 Until Specified
 Every 2 hours until epidural discontinued
- Nursing: Assess and record motor sensory function in the affected extremity every 4 hours x 24 hours q8 hours until epidural discontinued**
 Routine, Until discontinued starting



Ordering strategies in Peri-Op



Outcomes

Aim of most recent Colorectal program updates

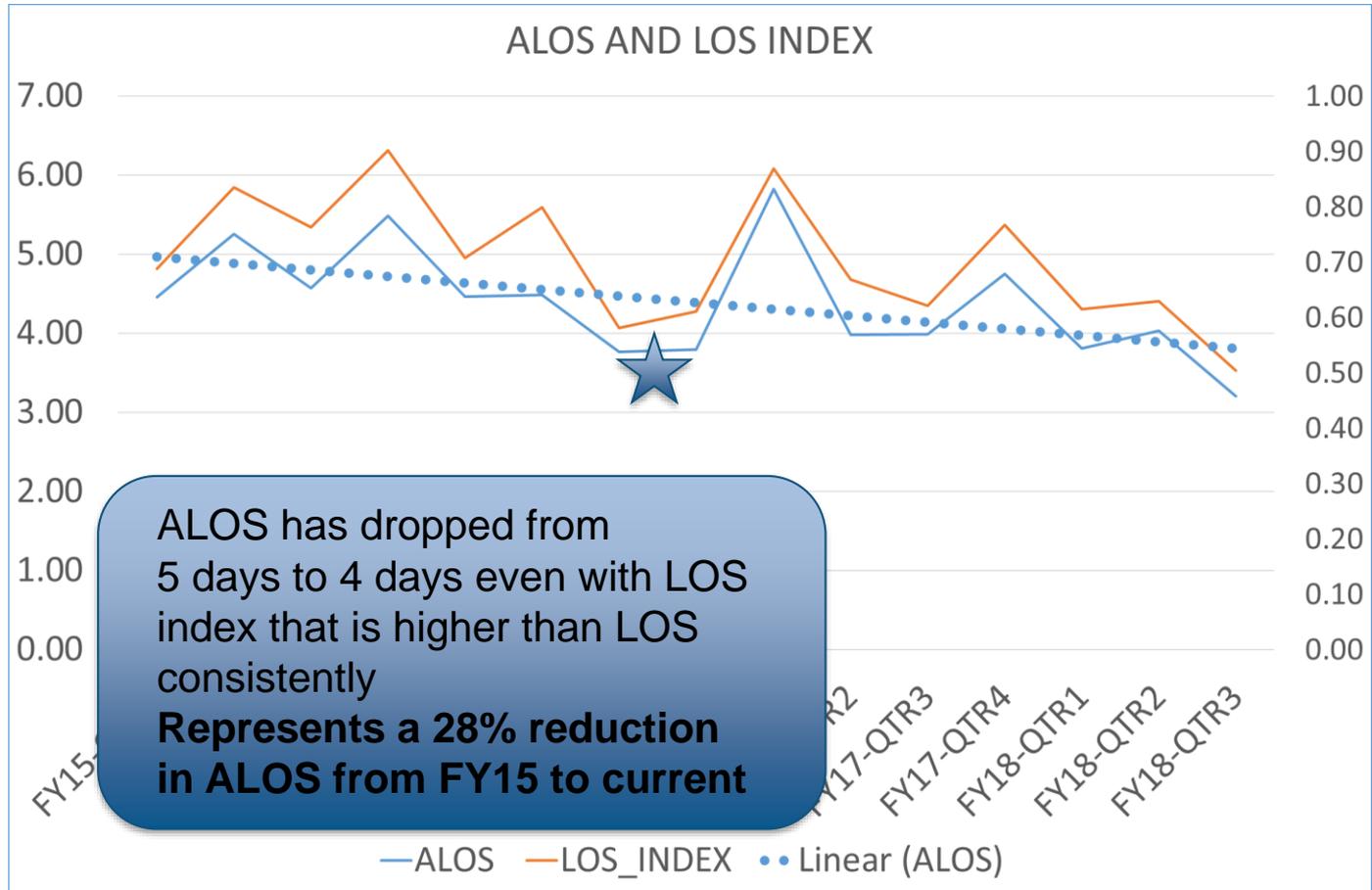
- Increase patient experience from start to finish
- Reduce opioid burden

LOS, 30 day readmissions, HCAHPS

- Improvements welcome but not primary focus

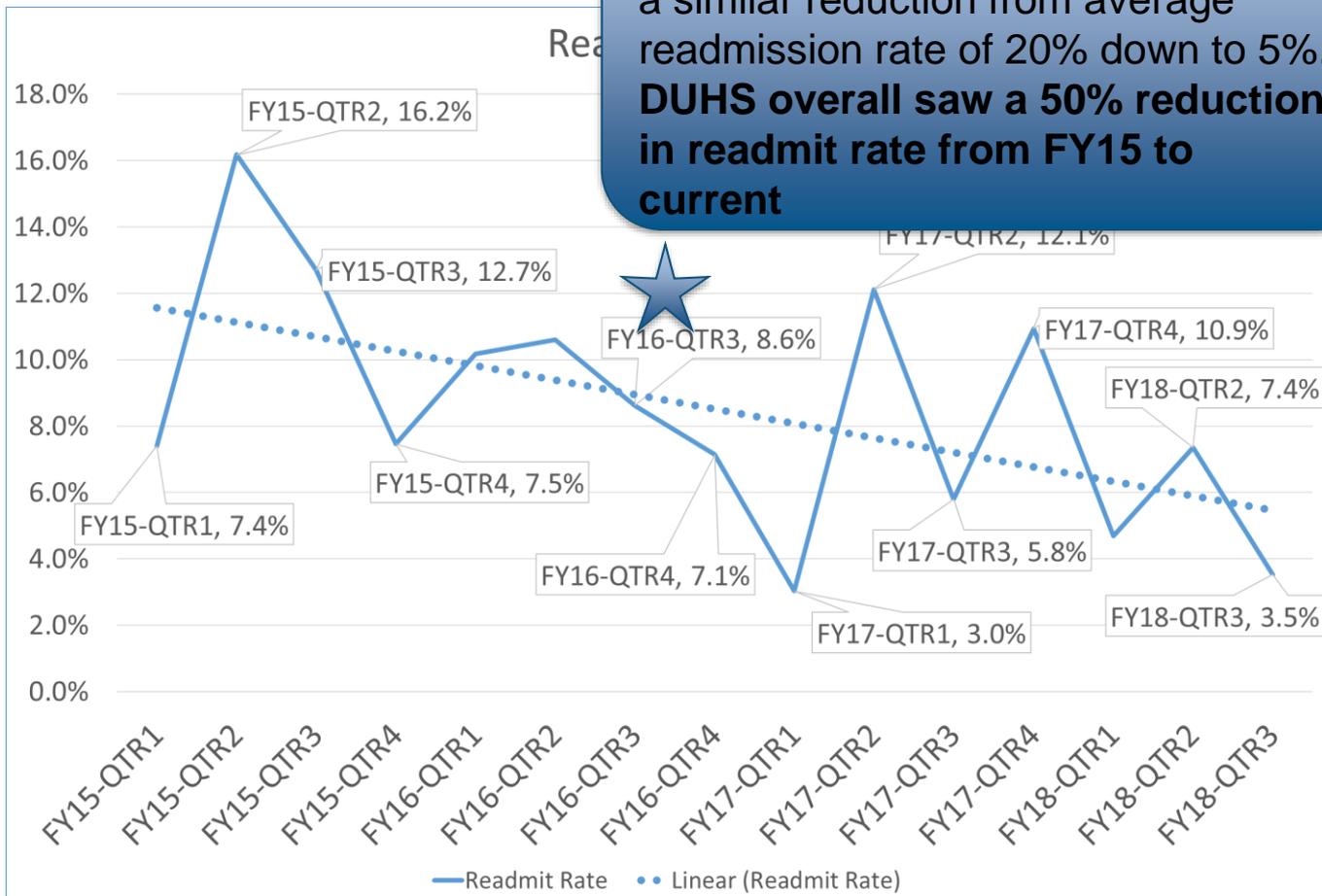


Outcomes

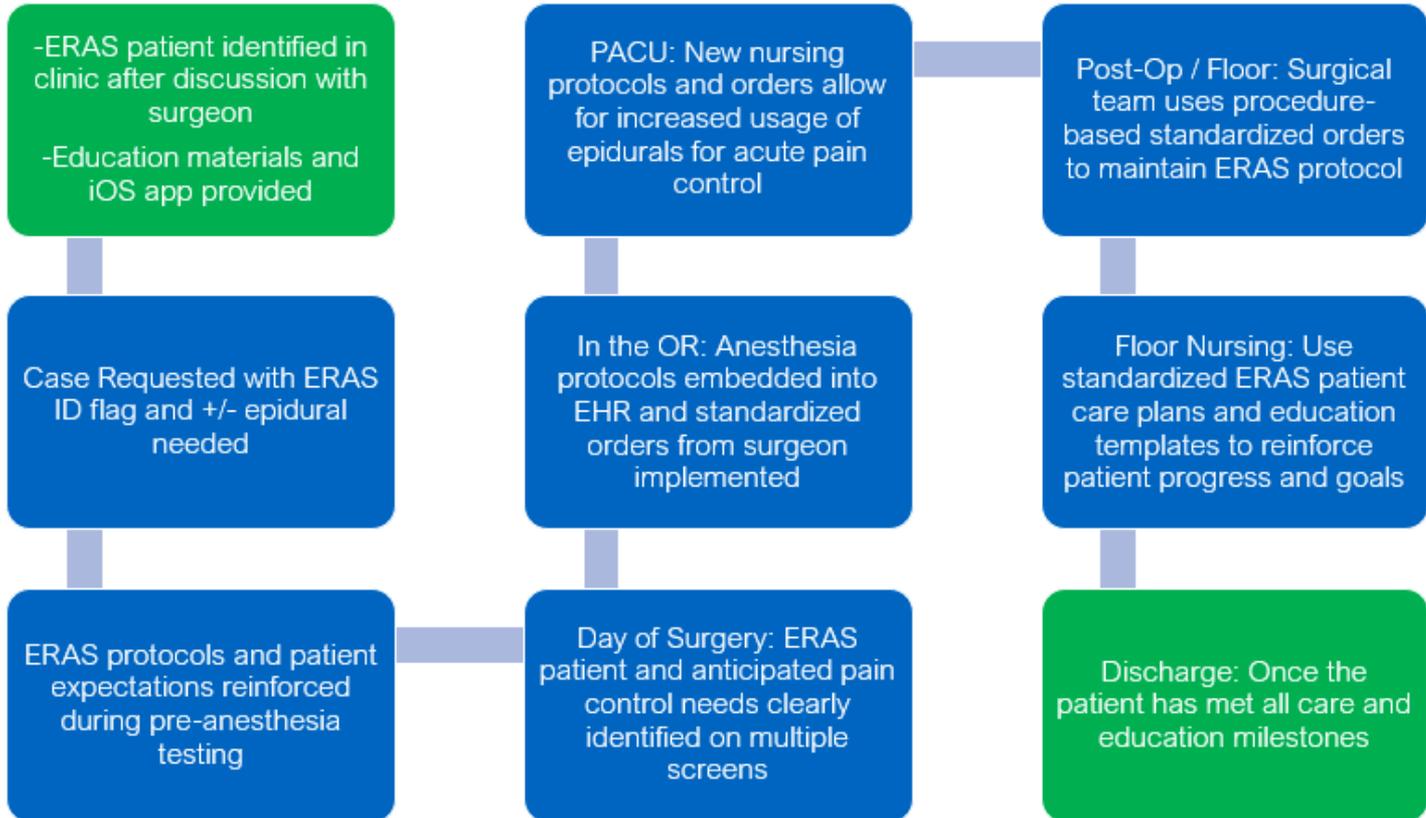


Outcomes

ERAS for Colectomy implemented at DRH and DRAH in FY17. They saw a similar reduction from average readmission rate of 20% down to 5%. **DUHS overall saw a 50% reduction in readmit rate from FY15 to current**



Patient flow summary



Conclusions

Constant iterations needed to utilize the EHR to enhance the patient experience at each step of the surgical process

- Patient centered process foremost
- Engagement critical

Develop EHR tools for all participants in the patient's care (e.g., nursing care plans & education templates)

- Allows for all to practice at top of scope
- Drives engagement across the board

Outcome improvements from all parties being engaged

Questions

- **Julie Thacker, MD**
 - julie.thacker@duke.edu
- **Chris Vail, PA-C, MMCi**
 - christopher.vail@duke.edu
 - Twitter: @cjvail
- Please complete online session evaluation



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