

# Case Study 3

## Using Order Sets to Standardize Care in an Enhanced Recovery After Surgery (ERAS) Program

Presenter:

Kara Douglas, CRNA *ERAS Program Director*

*“To every patient, every time, we will provide the care  
that we would want for our own loved ones.”*

**GBMC**

# Local Problem

Increased Length of Stay and Increased Complication Rate for Colorectal Surgical Patients.



*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

# Local Problem

## Why ERAS?

- Aligns with GBMC Four Aims
  - Better Care: Shortens recovery times, length of stay
  - Better Health: Less complications
  - More Joy: Increased satisfaction
  - Least Waste: Cost savings
- Why Colorectal?
  - Typically long length of stay, increased complications

*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

# Baseline Data:

## Pre-ERAS Integrated Data Collection



*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

# Pre-ERAS Integrated Data Collection



Top 5 Surgeons	Total
APOSTOLIDES, GEORGE Y, MD [1150]	37
DIROCCO, JOSEPH D, MD [1127]	22
ROTOLO, FRANCIS S, MD [1133]	16
WINIKOFF, STEPHEN E, MD [1145]	13
NI, MINGWEI, MD [13855]	10
<b>Grand Total</b>	<b>98</b>

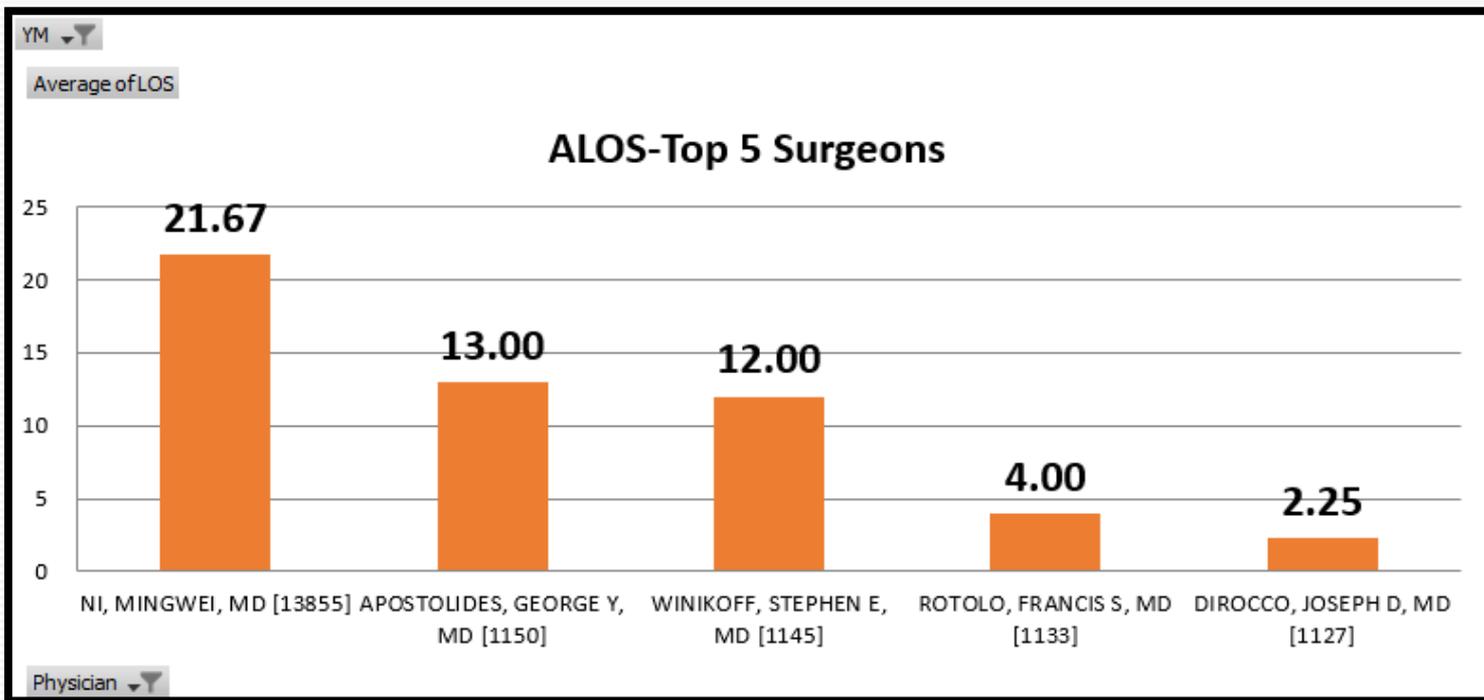
The top 5 employed and non-employed Colorectal Surgeons with the highest caseload. These surgeons were responsible for **78%** of all colorectal cases.

*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

9.71

# ALOS

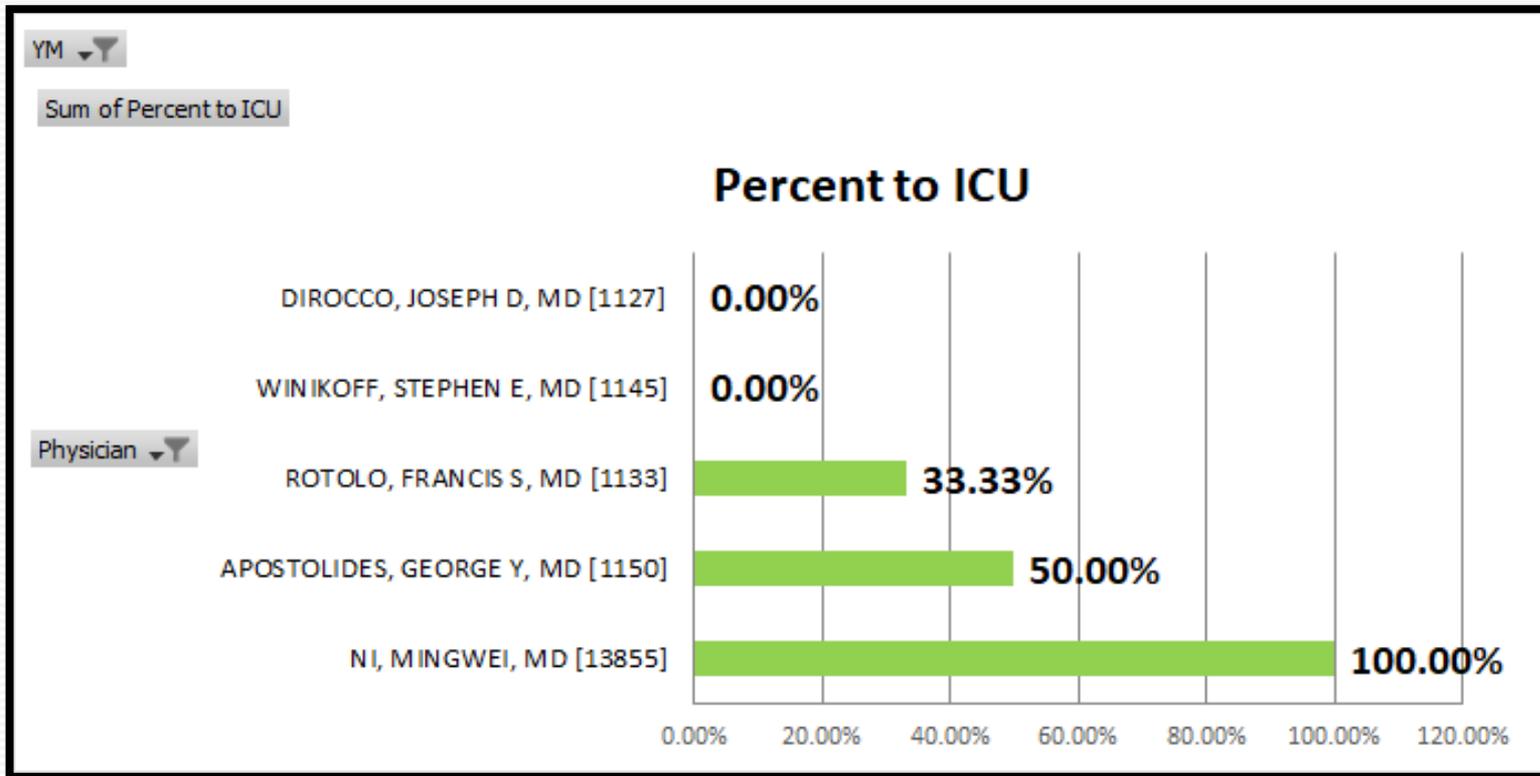


*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

35.71%

## Transfers to ICU

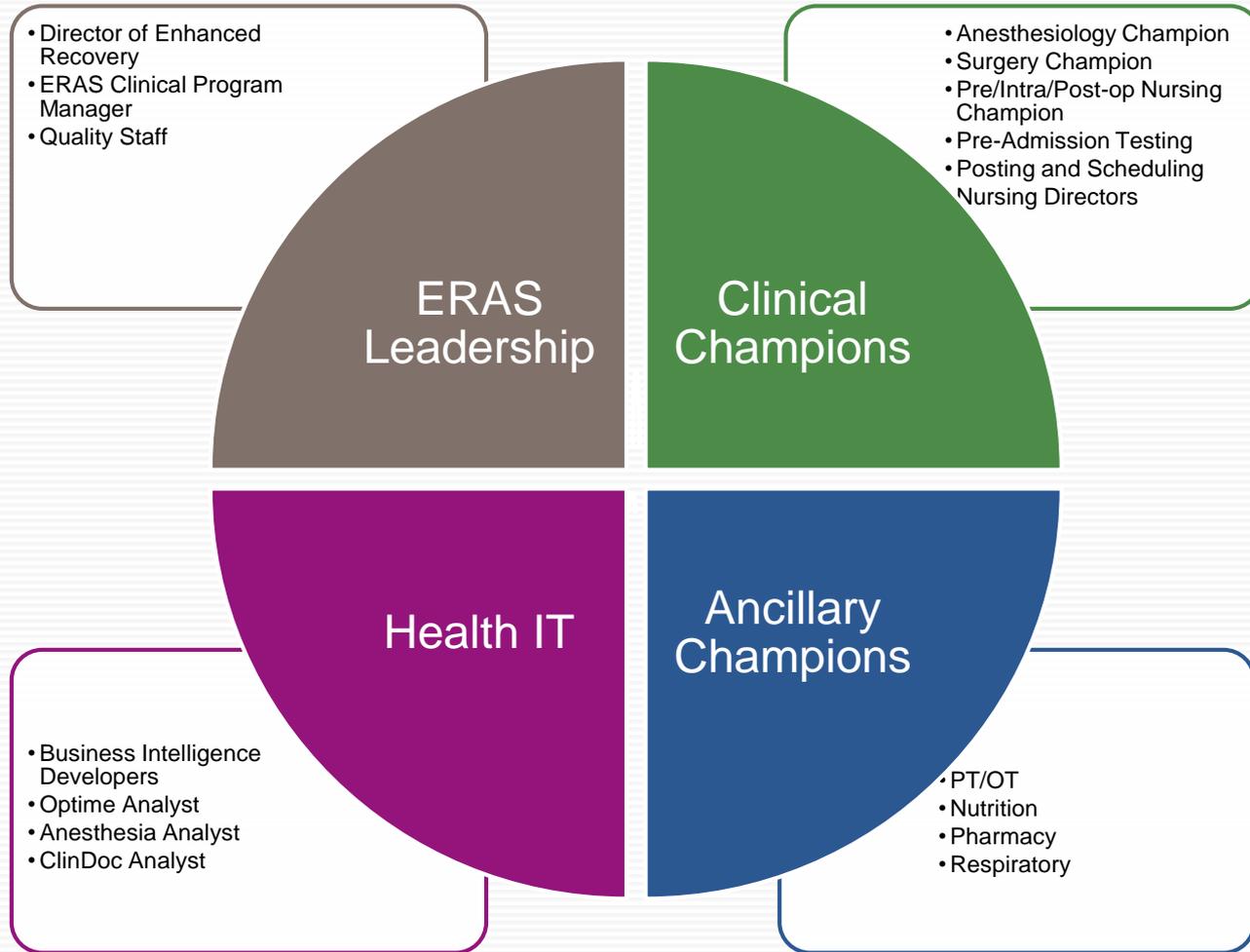


*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

GBMC

# Design and Implementation

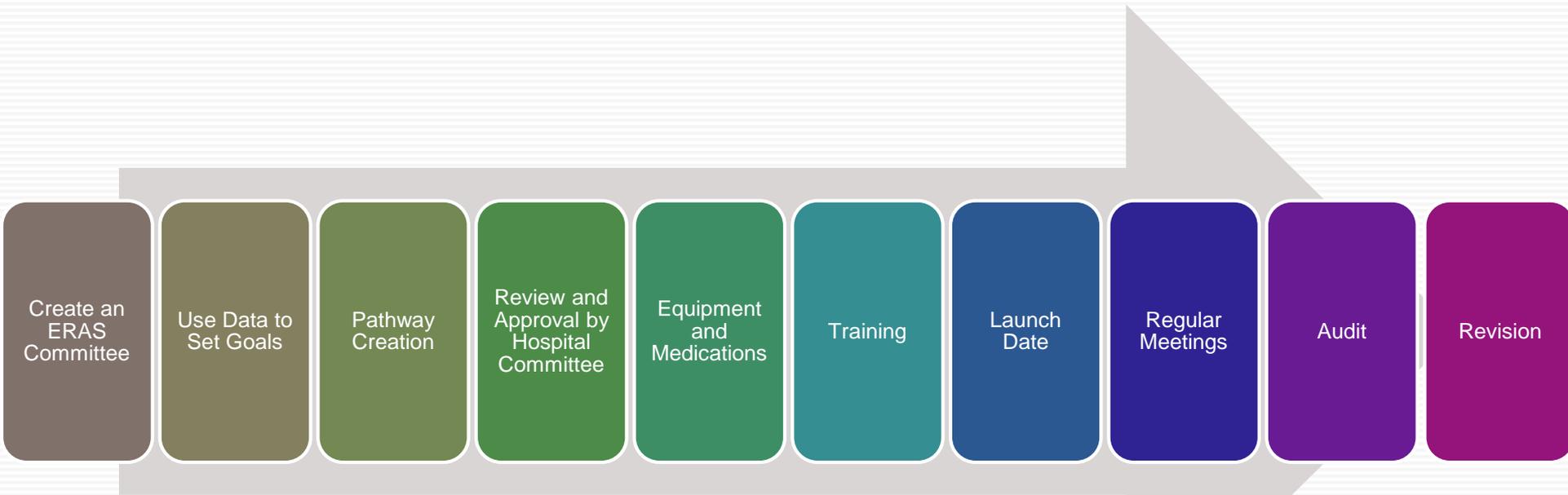
## Governance Strategy: ERAS Committee



*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

# Design and Implementation: 10 Steps to a Successful ERAS Program



- ❖ Epic did not have ERAS workflow as part of Foundation
- ❖ Intended Outcome: Successful Colorectal ERAS Program, measured in reduced LOS and complication rates, that could be extended to other surgical specialties.

*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

# Workflow and How Health Information Technology is Utilized

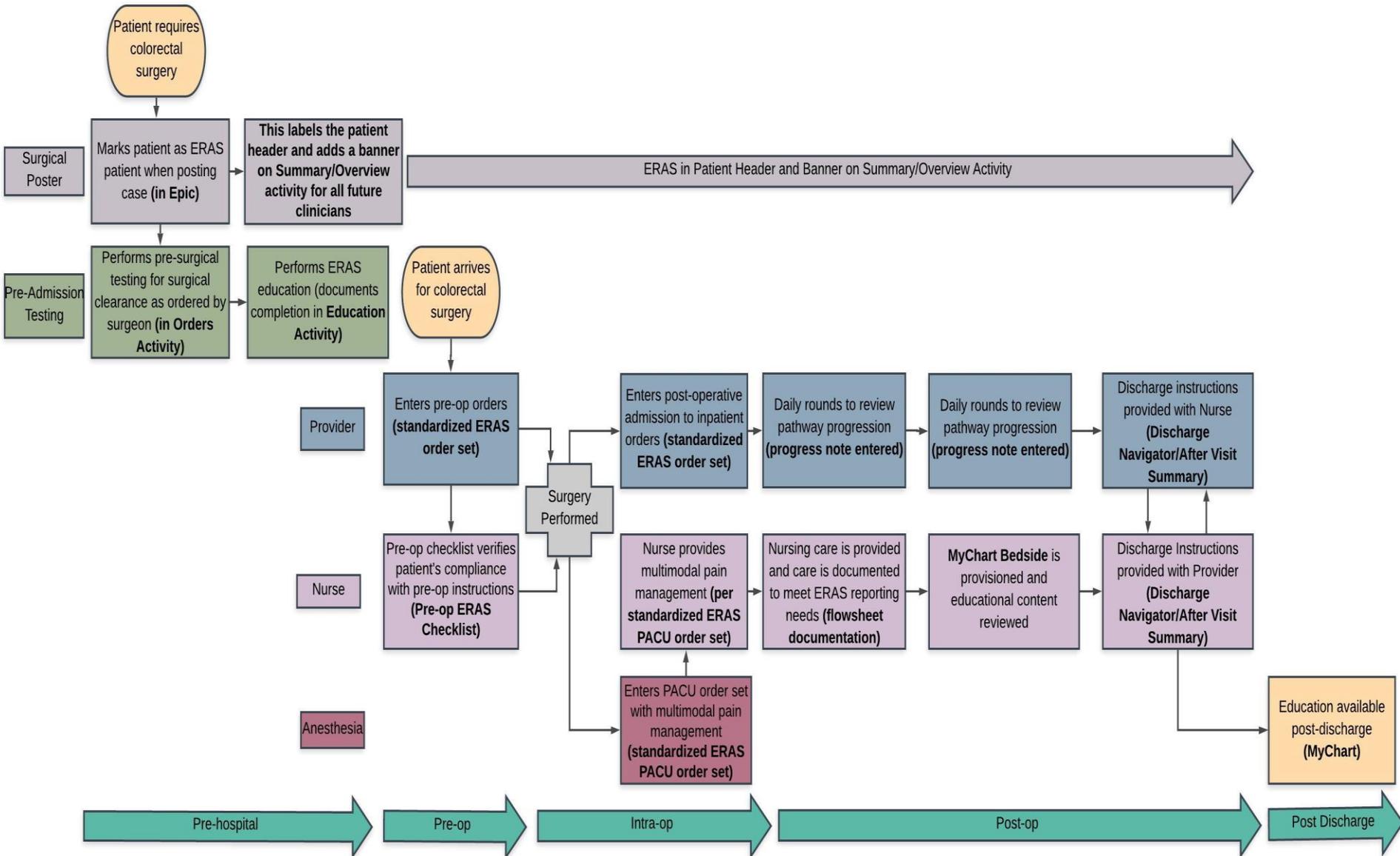
- Identify points in the workflow where Health IT is utilized



*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

# Colorectal ERAS Workflow



# Clear Identification of ERAS Patients in the EHR

MARY S. Search

Allergies: **No Known Allergies** Infection, Isolation: None, Standard Prec... Core Measure: None FYI: None Medication Agree... Collection Status: None  
Pref Lang, Need Interp: English, No Code: Full Code Admission Date: 07/10/2019 New Rslt/Order?: ! Daily MED: 30 mg... Collection Default: Auto  
HtWt: 5', 56.1 kg Primary Ins.: MEDICARE Patient Class: Inpatient MyChart: Pending, Out Info:   
Last BMI, CrCl: 24.14 kg/m<sup>2</sup>, 38.3 mL/min Precaution: None ERAS PT: **Yes**

- In the patient header for relevant care team members

Summary

Overview | Flowsheet | Flowsheet Compliance | Restraints | Cosign | Active Orders | Event Log | Intake/Output

**BestPractice Advisories**  
Click to view active BestPractice Advisories

**ERAS Patient (Enhanced Recovery After Surgery)**

Moderate Fall Risk

**Orders to be Acknowledged**  
(From admission, onward)  
None

**Specimen Collection Needed**  
None

**Medical Problems** | Comment | **Treatment Team** | **Emergency Contact(s)**

- As a banner on the Summary/Overview page for relevant care team members

*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

# ERAS Column in Peri-op Status Board

Epic Patient Lookup Snapboard

Status Board - GOR Pre-op/Phase II [25593] for 9/9/2019

PACU My Patients Pre-op/Phase II Charge Board Schedule More Reports Find Assign Staffing Events Transfer Ready to Move Discharge Legend

▲ Loc.	Patient	ERAS	Date of Birth	Sex	OR Room	Time	▲ Procedures	Providers	Anesthesia Staff	Pre-op/Phase II	Orders
01											
02	Augineteen, Willowtest	No [1]	09/06/67	F	GOR 01	1030	Laparoscopic Cholecystectomy - Right	Turner, Md			📄
03											
04											
05	Optime, Cranberry		01/13/81	M	GOR 01	1230	Amputation Knee Above - Left	Turner, Md			
06	Optime, Surgadmit		06/16/81	M	GOR 01	1500	Laparoscopic Cholecystectomy - Right	Turner, Md			
07											
08	Optime, Storyboard	✓	06/17/79	F	GOR 02	1100	Resection Colon - N/A	Turner, Md			📄
09	Checklist, Tester	✓	12/05/67	F	GOR 02	1125	Appendectomy - Right	Turner, Md			
10	Tester, Eraspt	✓	07/20/77	M	GOR 03	1300	Laparoscopic Assisted Colon Resection -	Turner, Md			
11											
12											
14	Test, Dexter		08/20/89	M	GOR 02	1200	Laparoscopic Appendectomy - N/A	Flowers, Md			
15	Optime, Dexter		08/10/93	M	GOR 03	1200	Laparotomy Exploratory - N/A	Turner, Md			
16											
17											
18	Qfourantibiotic, Test	✓	04/03/80	M	GOR 05	0740	Replacement Knee Total - Right	Schmidt, Md		James M.	📄
19	Qsixhourtest, Kenny	✓	04/09/72	M	GOR 03	0800	Resection Colon Sigmoid - Left	Rotolo, Md	Krempasanka, ...		
20											

*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

GBMC

# Specific Pre-Op Checklist Questions

- Only required if the patient is an ERAS patient

Events - Family Communication Events - Family Communication

**Outpatient** Inpatient Admission

OVERVIEW

- Best Practice
- Care Everywhere
- Summary
- Nurse
- Vitals
- Allergies
- OB/Gyn Status
- 24-Hr Results
- History
- Family Commun...

DATABASE

- Travel Screening
- Home Medications
- Present on Arrival
- Nutrition Screen
- Psychosocial
- Suicide Risk
- Directives

OR ASSESSMENT

- Interpreter Servi...
- Belongings
- NPO Status
- Patient Assess...
- Stop-Bang
- LDAs
- LDA Avatar
- Education
- Care Plan
- Consents
- Checklist

OR HANDOFF

- Handoff
- Verify

OTHER

- Patient Inst
- Nursing Notes

Patient ID  Verbal  Armband  Patient unable to verbalize  Peds- Parent ID

Verified  Date of Birth  Name

Arm Bands On  ID  Blood bank  Code status  Fall  Other (Comment)

Restricted Extremity

**Procedure Verification**

Correct Patient?  Yes

Correct Procedure?  Yes

Correct Laterality?  Yes  N/A

Correct Site?  Yes

Site Marked?  Yes  Not applicable  RN marked (eye surgery only)

Alternative Site Marking

The Universal Protocol standard UP.01.03.01 requires a timeout be completed and documented prior to the start of a procedure.

**Chart Verification**

H&P Verified?  Yes  No  Update Complete  N/A- Local Case

Pre-op test results  In chart  Not in chart  N/A

Nasal Swab Complete?  Positive  Negative  N/A  Not Performed

Consents Confirmed  Operative  Anesthesia  Blood products  Photographs  Observers

Other (Comment)  Vendor/Rep

Jewelry Waiver Signed  Yes  No

Type and Screen?  Yes  No

Pregnancy test completed?  Yes  No  N/A (male)

Bowel Prep Completed?  Complete  Incomplete  N/A (Reason Needed)

Bowel prep results  Clear  Unclear  Prep incomplete

Patient voided?  Yes  No

CHG wipe used?  Yes  At Home  In Pre-Op  No

Sacral patch applied?  Yes  No  N/A

Pre-Op Oral Antibiotics taken at home?  Yes  No

Pre-Op Clear Carb Drink consumed?  Completed  Incomplete (Reason Needed)

Time of Carbohydrate Consumption

Preop Warming Therapy applied  Yes  No

Did patient receive ERAS Education?  GBMC PTC  Kaiser PTC

GBMC Surgeon office  Kaiser Surgeon office

No Education Received

Does Patient Currently have a Stoma?  Yes  No

Is Patient Scheduled for Creation of Stoma?  Yes  No

Was Patient Premarked for a Stoma Site?  Yes  No

Did Patient Receive Pre-Ostomy Education?  GBMC PTC  Kaiser PTC  GBMC Surgeon Office

Kaiser Surgeon Office  No Education Received

*"To every patient, every time, we will provide the care that we would want for our own loved ones."*

**GBMC**

# Anesthesia Intra-Op Checklist

ERAS CHECKLIST	
▼ ERAS PATIENT CHECKLIST	
ERAS FLUID MANAGEMENT	<input type="checkbox"/> Non-Invasive Monitor <input type="checkbox"/> Goal-Directed Fluid Management <input type="checkbox"/> CVP <input type="checkbox"/> Esophageal Doppler <input type="checkbox"/> Albumin <input type="checkbox"/> None
Anesthetic	<input type="checkbox"/> Volatile Anesthetic <input type="checkbox"/> Propofol Drip <input type="checkbox"/> Precedex Drip <input type="checkbox"/> Other(See Comment)
Multi-Modal Pain Management	<input type="checkbox"/> Yes <input type="checkbox"/> No
Regional Anesthesia	<input type="checkbox"/> Thoracic Epidural <input type="checkbox"/> Spinal Anesthesia <input type="checkbox"/> TAP Blocks <input type="checkbox"/> QL Blocks <input type="checkbox"/> Adductor Canal Block <input type="checkbox"/> PEC Block <input type="checkbox"/> Other - See Comments <input type="checkbox"/> No Regional Anesthesia ...
Reason Regional Anesthesia Not Given	<input type="checkbox"/> Pt Pref=Patient Preference <input type="checkbox"/> Surg Pref=Surgeon Preference <input type="checkbox"/> Anti-Coag=Anticoagulation <input type="checkbox"/> Failed Admin=Attempted but unable to administer <input type="checkbox"/> Other Medical Condition=Other Medical Condition

*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

# ERAS Order Sets

## Order Sets

### Orders

#### Order Sets

#### Colorectal Surgery - Enhanced Recovery After Surgery Protocol (ERAS) - Pre-op

##### Interventions and Assessments

###### Nursing

- Weigh patient on standing scale and document  
Routine, Once, First occurrence today at 1550  
Pre-op, Sign & Hold
- Apply Chlorhexidine wipes to patient's body  
Routine, Daily (0600), First occurrence today at 1550  
Pre-op, Sign & Hold
- Apply warming gown to patient  
Routine, Once, First occurrence today at 1550  
Pre-op, Sign & Hold

##### IV Fluids

###### Insert and Maintain IV

- Insert peripheral IV - Start IV Catheter  
Routine, Once, First occurrence today at 1550  
Pre-op, Sign & Hold

###### IV Fluid Infusions

- lactated Ringer's infusion  
0-20 mL/hr, intravenous, Continuous, Pre-op, R
- sodium chloride 0.9 % infusion - Only for p  
0-20 mL/hr, intravenous, Continuous, Pre-op, R

##### Medications

###### Exparel / Acetaminophen / Entereg

## Order Sets

### Orders

#### Order Sets

#### PACU Anesthesia Adult - Enhanced Recovery After Surgery (ERAS)

##### General

###### Code Status

- Full Code - No MOLST  
PACU (only)
- Code Status / MOLST  
PACU (only)

##### Interventions and Assessments

###### Nursing

###### Spinal/Epidural Anesthesia:

- Vital Signs  
Routine, Every 15 min, First occurrence today at 1554, Until Specified  
Phase I: Every 15 minutes until criteria for Phase I discharge met, then hourly, Phase II: U
- Post Anesthesia Recovery Score  
Routine, Continuous, starting today at 1554, Until Specified  
Upon arrival, in 30 minutes, and when Phase 1 discharge criteria is met Post Anesthesia s  
must be cleared by Anesthesia, PACU (only), Sign & Hold
- Cardiac monitoring  
Routine, Per unit protocol, starting today at 1554, Until Specified  
While in Phase 1, PACU (only)  
Cardiac monitoring indication: Other (specify in comments)  
Cardiac Monitoring Duration: Continuous bedside  
Sign & Hold
- Capnography  
PACU (only)
- Pulse oximetry, continuous  
Routine, Once, First occurrence today at 1554  
Continuous While in Phase 1, PACU (only), Sign & Hold

## Order Sets

### Orders

#### Order Sets

#### Colorectal Surgery - Post-Op Admission - Enhanced Recovery After Surgery (ERAS)

##### General

###### Admission

- Admit to inpatient  
ADT-Sign
- Place in Observation  
ADT-Sign

###### Code Status

###### Isolation

- Standard Precautions  
Routine, Continuous, starting today at 1553, Until Specified  
ADT-Sign, Sign

###### Diet

- General Diet  
Post-op
- NPO Diet  
Post-op
- Heart Healthy Diet  
Post-op
- Diabetic Diet  
Post-op
- NPO Diet, then Advance as Specified
- Clear Liquid Diet, then Advance As Tolerated
- Clear Liquid Diet With Toast and Crackers, then Advance As Tolerated

###### Advance As Tolerated - Complex Advancement

- Advance As Tolerated - Clear -> Full -> T&C -> Low Fiber -> General
- Advance As Tolerated - Clear -> Low Fiber -> General

*"To every patient, every time, we will provide the care that we would want for our own loved ones."*

**GBMC**

# ERAS Coordinator Rounding Note

Flowsheets

ERAS Rounding

Patient	Yes	No
Reasons why		Not receiving multimodal

Reasons why ERAS criteria not met

- Not receiving multimodal analgesia;Foley not removed;Nausea/Vomiting
- Select Multiple Options: (F5)
- Not receiving multimodal analgesia
- VTE chemoprophylaxis not given
- Diet not advanced per protocol
- Foley not removed
- Not using Incentive Spirometer
- Patient transferred to ICU
- Uncontrolled Pain
- Nausea/Vomiting
- No return of bowel function
- IV Fluid not discontinued
- Not Ambulating
- Comment (F6)

All Notes

Number of notes shown: 2 out of 2. All loaded.

Date

ERAS COORDINATOR ROUNDING NOTE Date: 09/09/19

Patient: Anthony Optime

Surgical Procedure: Resection Colon Left - Left Date of Procedure: 11/29/2018

Anesthesia Type: No value filed.

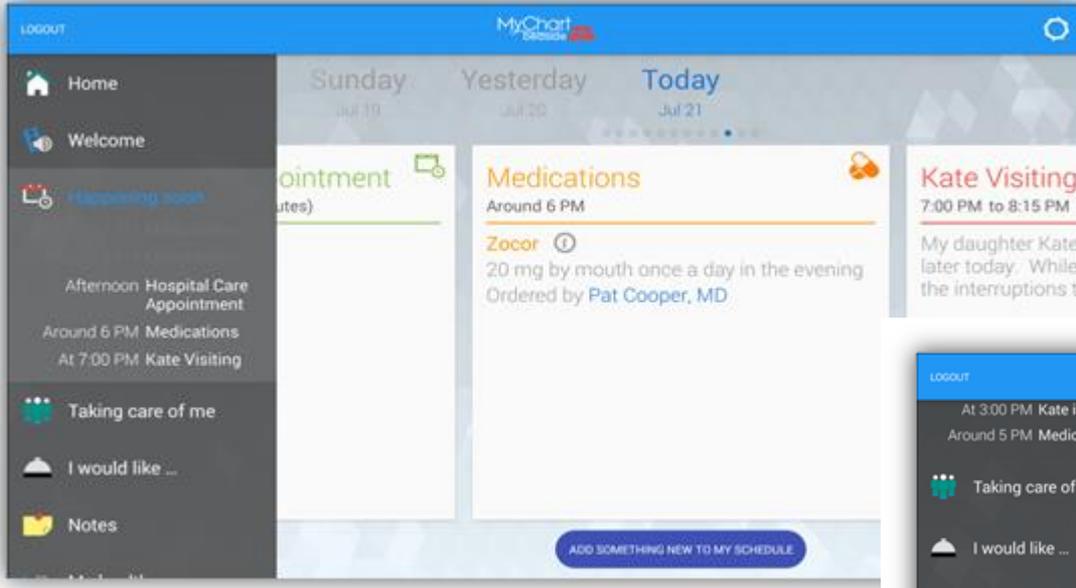
ERAS Rounding - 09/09/19 1245

Patient satisfy ERAS criteria?	No
--------------------------------	----

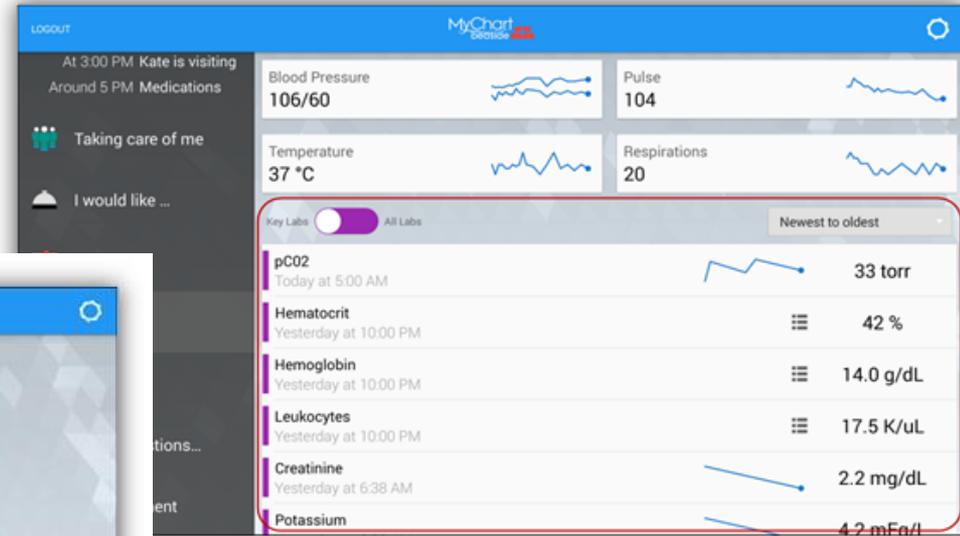
Reasons why ERAS criteria not met

Not receiving multimodal analgesia;Foley not removed;Nausea/Vomiting

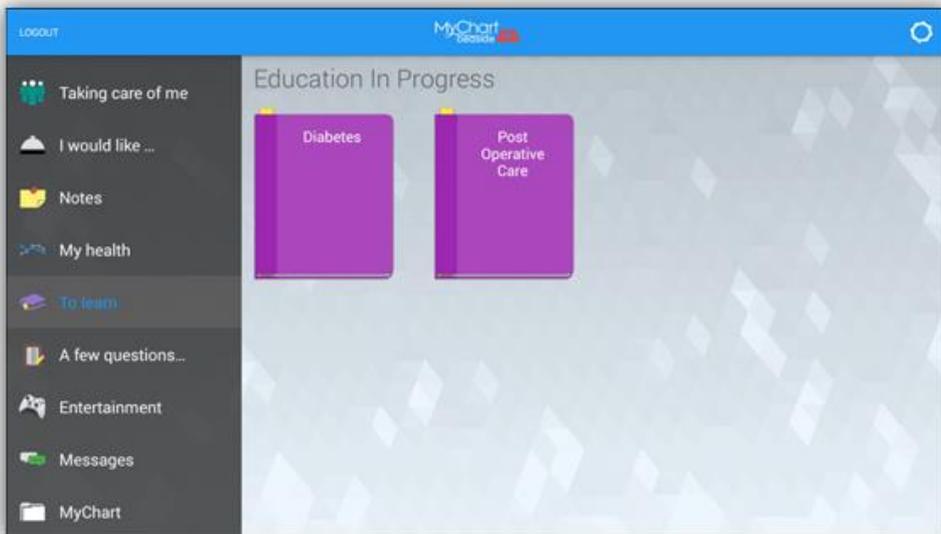
# Patient Engagement: MyChart Bedside



- Patients can see care team members, vitals, labs, provider notes, upcoming medications



- Custom built education and videos for post op care



# ERAS Dashboard

## My Dashboards

### Enhanced Recovery After Surgery (ERAS) ▾

#### ERAS Message Board

Last Refresh: 02:13:51 PM

There are no posts to show.

#### ERAS Website Links

External Website URLs

[American Society for Enhanced Recovery](#)

#### Hyperspace Activities

Last Refresh: 02:13:52 PM

[Open Case](#)

[Open Chart](#)

[Open Snapboard](#)

[Open Staff Schedule](#)

#### ERAS Anesthesia Type By Provider- Daily

Last Refresh: 02:14:05 PM

Report completed: Mon 7/15 02:13 PM

**3** Total # of ERAS Cases

Anesthesia Type	Total # of ERAS Cases
<ul style="list-style-type: none"> <li>general ETT                             <ul style="list-style-type: none"> <li>KING, VICTOR F</li> </ul> </li> </ul>	1
<ul style="list-style-type: none"> <li>general ETT;regional block                             <ul style="list-style-type: none"> <li>AMIN, FARID B</li> </ul> </li> </ul>	1
<ul style="list-style-type: none"> <li>spinal                             <ul style="list-style-type: none"> <li>KESSLER, DAN D</li> </ul> </li> </ul>	1
Count unique values	3

#### ERAS Anesthesia- Number Carb Drinks- Daily

Last Refresh: 02:13:55 PM

Report completed: Mon 7/15 02:13 PM

#### ERAS Inpatient Clinical Indicators

Reporting Workbench Reports

[GC IP ERAS Nursing Flowsheets\\_Discharged Patients](#)

[GC IP ERAS Nursing Flowsheets\\_CurrentPatients](#)

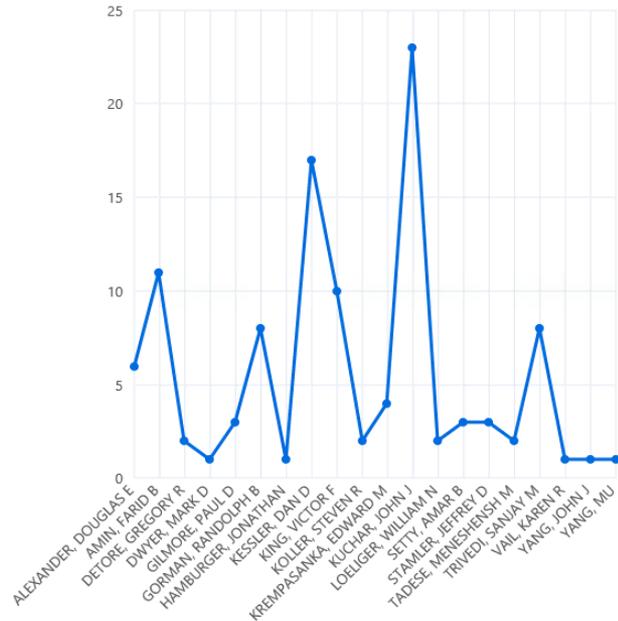
Clarity Reports

[GC IP ERAS Foley Cath Measure](#)

#### ERAS Anesthesia- Case Per Anesthesiologist -Monthly

Last Refresh: 02:14:12 PM

Report completed: Mon 7/15 02:14 PM



#### ERAS Anesthesia

[RW-ERAS Pre-Op Checklist- General/Colorectal Reports](#)

[GC ERAS Pre-Op Checklist Daily Report- General/Colorectal](#)

[GC ERAS Pre-Op Checklist - Monthly Report- General/Colorectal](#)

[GC ERAS Pre-Op Checklist Yearly Report-General/Colorectal](#)

[Crystal Reports- ERAS Data Elements- General/Colorectal](#)

[ERAS Report- Colorectal \(Monthly\)](#)

[ERAS Report- Colorectal \(Yearly\)](#)

[RW- ERAS Pre-Op Checklist- Orthopedics](#)

[GC ERAS Pre-Op Checklist Daily Report- Orthopedics](#)

[GC ERAS Pre-Op Checklist Monthly Report- Orthopedics](#)

[GC ERAS Pre-Op Checklist Yearly Report-Orthopedics](#)

#### ERAS- Cases Per Anesthesiologist- Yearly

Running - 44 %

Report: GC ERAS DATA (YEARLY)

#### ERAS Anesthesia- Number of Carb Drinks- Yearly

Running - 44 %

Report: GC ERAS DATA (YEARLY)

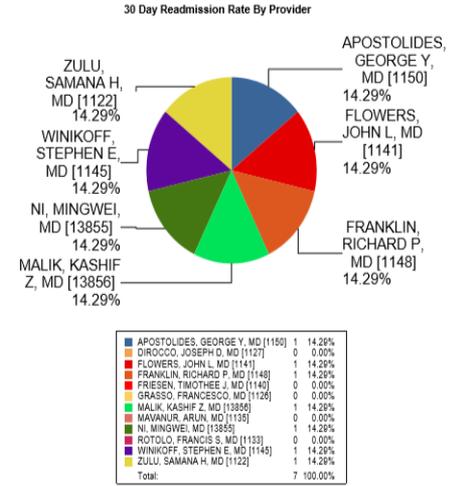
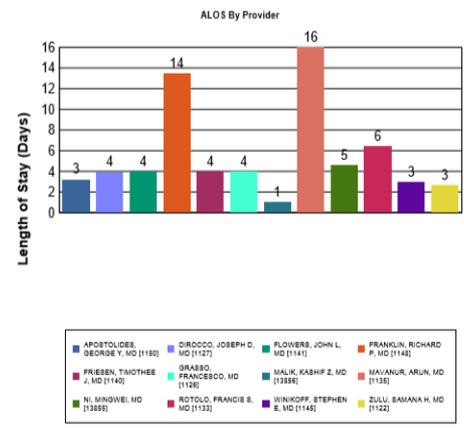
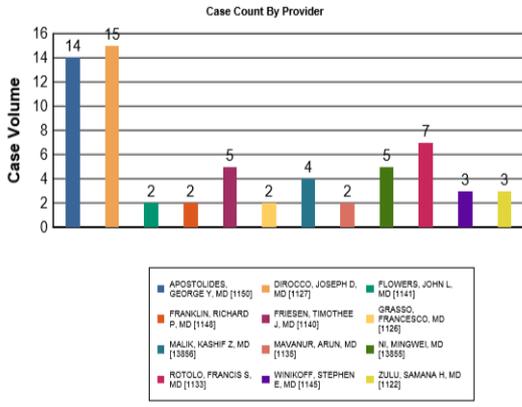
*"To every patient, every time, we will provide the care that we would want for our own loved ones."*



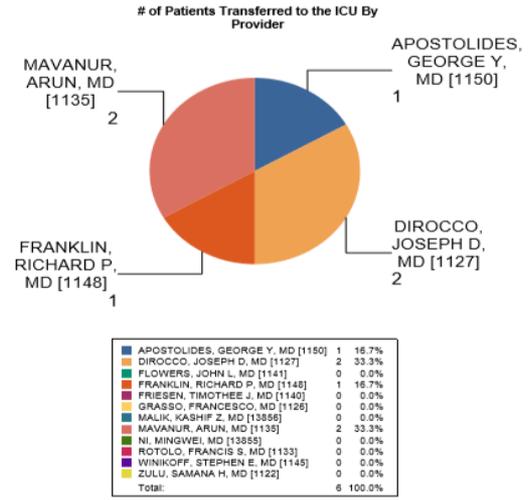
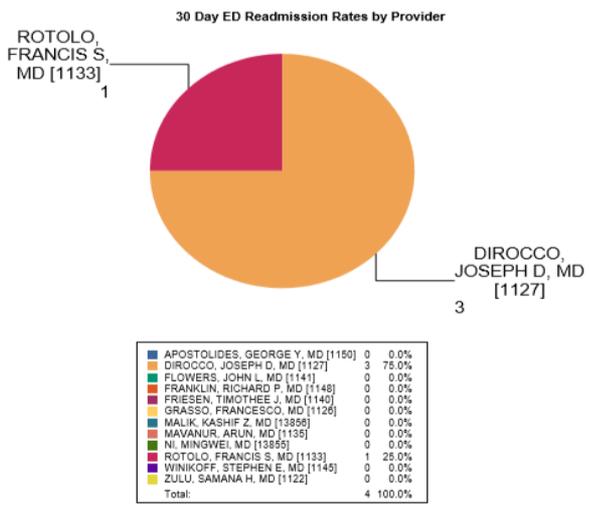
# Crystal Reports

uses formulas, group functionality to group procedures by provider, average length of stay, and case count

**GBMC**  
ERAS Report- Colorectal  
Procedure Date 7/1/2018 to 9/30/2018



Case Counts:64



# Success and Change Management Strategy for Workflow Improvements

- Occurs through regular team meetings with the ERAS Committee
- Markers for success of the program are analyzed
  - Length of stay
  - Admission to ICU
  - Utilization of designated pharmaceuticals
  - Readmissions
- Opportunities for improvement are identified
- Workflows are optimized

*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

# Value Derived



*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

# Post-ERAS Data

Total Cases- May 2018-May 2019

98



179

Top 5 Surgeons	Case Counts	Cum %
APOSTOLIDES, GEORGE Y, MD [1150]	75	41.90%
DIROCCO, JOSEPH D, MD [1127]	47	68.16%
ROTOLO, FRANCIS S, MD [1133]	27	83.24%
NI, MINGWEI, MD [13855]	18	93.30%
WINIKOFF, STEPHEN E, MD [1145]	12	100.00%
Grand Total	179	

The top 5 employed and non-employed Colorectal Surgeons with the highest caseload. These surgeons were responsible for **63%** of all colorectal cases.

*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

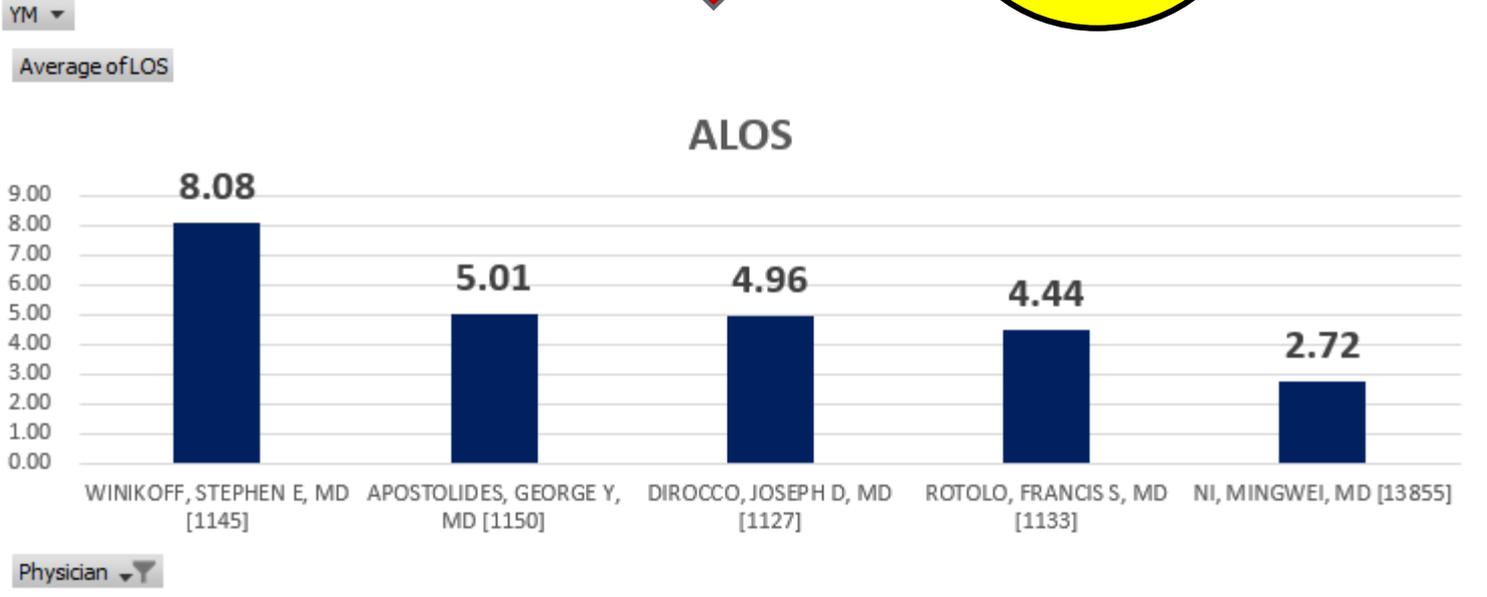
# Post-ERAS Data

## ALOS

9.71



4.89



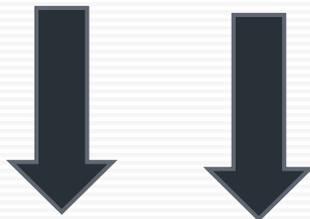
*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

GBMC

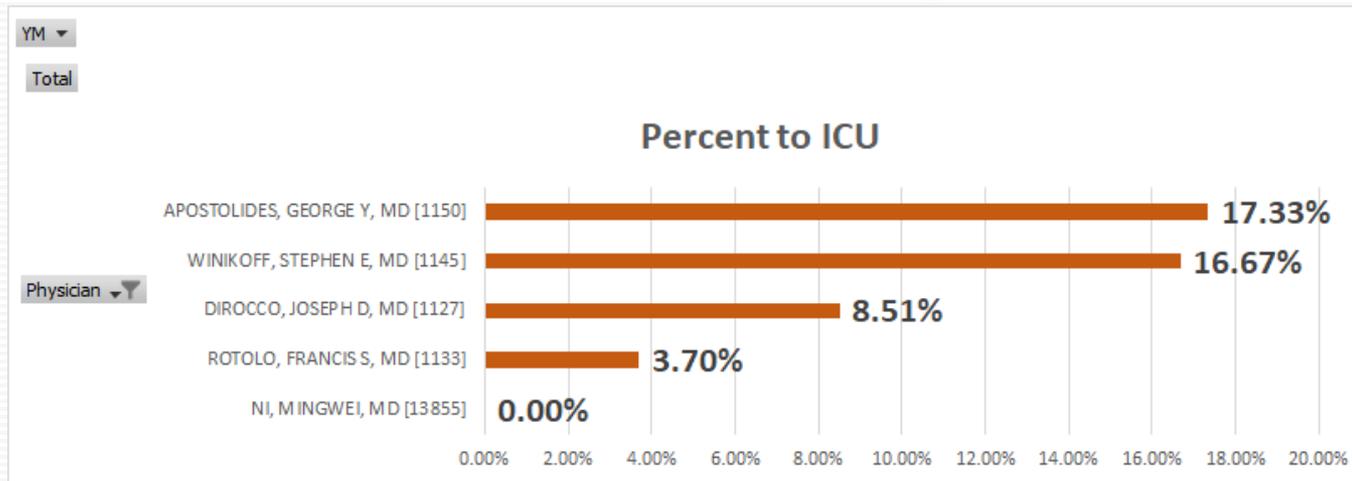
# Post-ERAS Data

## Percent to ICU

32.50%



11.17%

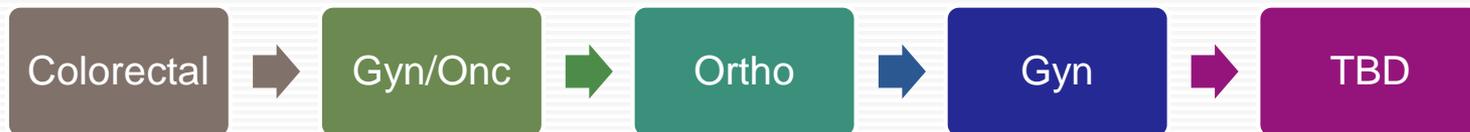


*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

# Return On Investment- Cost Savings

- Cost of average day of admission is \$1500
- Reducing length of stay from ~10 to ~5 results in projected annual cost savings of at least \$1.35M at current volume of cases (180 cases)
- We expect more savings as ERAS program continues to grow into other specialties



*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

# Keys to Success

- Evidenced-based, standardized care
  - Leverage order sets
- Use data to determine where improvements need to occur
  - The workflows will be fluid and evolve based on data
- Hold staff accountable in all areas for following established workflows for orderset usage and documentation
- Care team members need to clearly understand what actions/orders lead patients off the pathway

*“To every patient, every time, we will provide the care that we would want for our own loved ones.”*

**GBMC**

https://.headofbed.com/

Privacy Policy Terms of Use Disclaimer

HEAD of the BED

HOME ABOUT US ARTICLES ▾

In

# Enhanced Recovery After Surgery



ENHANCED RECOVERY AFTER SURGERY

## Is It Necessary To Have Patients Stop Alcohol and Nicotine Use Before Surgery?

Privacy Policy Terms of Use Disclaimer

HEAD of the BED

HOME ABOUT US ART



ENHANCED RECOVERY AFTER SURGERY

## Reporting Tools and Development for Enhanced Recovery After Surgery Programs

By ADMIN © July 13, 2019 0 view

Privacy Policy Terms of Use Disclaimer

HEAD of the BED

HOME ABOUT US ARTICL



ENHANCED RECOVERY AFTER SURGERY

## 5 Reasons Enhanced Recovery After Surgery Pathways Are Becoming Standard

By ADMIN © July 11, 2019 0 view