Case Study 3

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

Presenter:
Kara Douglas, CRNA ERAS Program Director
Local Problem
Increased Length of Stay and Increased Complication Rate for Colorectal Surgical Patients.

Solution: ERAS Program

Lack of Standardized Evidence Based Care

No Emphasis on Prehabilitation

Variable Approaches to Pain Management

Pre and Post-Op Education Lacking

“To every patient, every time, we will provide the care that we would want for our own loved ones.”
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
Baseline Data:
Pre-ERAS Integrated Data Collection

Baseline Length of Stay: 9.71
Baseline Patient Transfer to ICU: 32.50%
Pre-ERAS Integrated Data Collection

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

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

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

<table>
<thead>
<tr>
<th>Physician</th>
<th>Percent to ICU</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIROCCO, JOSEPH D, MD [1127]</td>
<td>0.00%</td>
</tr>
<tr>
<td>WINKOFF, STEPHEN E, MD [1145]</td>
<td>0.00%</td>
</tr>
<tr>
<td>ROTOLO, FRANCIS S, MD [1133]</td>
<td>33.33%</td>
</tr>
<tr>
<td>APOSTOLIDES, GEORGE Y, MD [1150]</td>
<td>50.00%</td>
</tr>
<tr>
<td>NI, MINGWEI, MD [13855]</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

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

35.71%
Design and Implementation
Governance Strategy: ERAS Committee

ERAS Leadership
- Director of Enhanced Recovery
- ERAS Clinical Program Manager
- Quality Staff

Clinical Champions
- Anesthesiology Champion
- Surgery Champion
- Pre/Intra/Post-op Nursing Champion
- Pre-Admission Testing
- Posting and Scheduling Nursing Directors

Health IT
- Business Intelligence Developers
- Optime Analyst
- Anesthesia Analyst
- ClinDoc Analyst

Ancillary Champions
- PT/OT
- Nutrition
- Pharmacy
- Respiratory

“To every patient, every time, we will provide the care that we would want for our own loved ones.”
Design and Implementation: 10 Steps to a Successful ERAS Program

- Create an ERAS Committee
- Use Data to Set Goals
- Pathway Creation
- Review and Approval by Hospital Committee
- Equipment and Medications
- Training
- Launch Date
- Regular Meetings
- Audit
- Revision

- 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.
Workflow and How Health Information Technology is Utilized

- Identify points in the workflow where Health IT is utilized
Colorectal ERAS Workflow
Clear Identification of ERAS Patients in the EHR

- In the patient header for relevant care team members

- 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.”
ERAS Column in Peri-op Status Board

<table>
<thead>
<tr>
<th>Loc</th>
<th>Patient</th>
<th>ERAS</th>
<th>Date of Birth</th>
<th>Sex</th>
<th>OR Room</th>
<th>Time</th>
<th>Procedures</th>
<th>Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Augnineteen, Willowtest</td>
<td>No [1]</td>
<td>09/06/67</td>
<td>F</td>
<td>GOR 01</td>
<td>1030</td>
<td>Laparoscopic Cholecystectomy - Right</td>
<td>Turner, Md</td>
</tr>
<tr>
<td>02</td>
<td>Optime, Cranberry</td>
<td></td>
<td>01/13/81</td>
<td>M</td>
<td>GOR 01</td>
<td>1230</td>
<td>Amputation Knee Above - Left</td>
<td>Turner, Md</td>
</tr>
<tr>
<td>03</td>
<td>Optime, Surgadmit</td>
<td></td>
<td>06/16/81</td>
<td>M</td>
<td>GOR 01</td>
<td>1500</td>
<td>Laparoscopic Cholecystectomy - Right</td>
<td>Turner, Md</td>
</tr>
<tr>
<td>04</td>
<td>Optime, Storyboard</td>
<td></td>
<td>06/17/79</td>
<td>F</td>
<td>GOR 02</td>
<td>1100</td>
<td>Resection Colon - N/A</td>
<td>Turner, Md</td>
</tr>
<tr>
<td>05</td>
<td>Checklist, Tester</td>
<td></td>
<td>12/05/67</td>
<td>F</td>
<td>GOR 02</td>
<td>1125</td>
<td>Appendectomy - Right</td>
<td>Turner, Md</td>
</tr>
<tr>
<td>06</td>
<td>Test, Eraspt</td>
<td></td>
<td>07/20/77</td>
<td>M</td>
<td>GOR 03</td>
<td>1300</td>
<td>Laparoscopic Assisted Colon Resection -</td>
<td>Turner, Md</td>
</tr>
<tr>
<td>07</td>
<td>Test, Dextor</td>
<td></td>
<td>08/20/89</td>
<td>M</td>
<td>GOR 02</td>
<td>1200</td>
<td>Laparoscopic Appendectomy - N/A</td>
<td>Flowers, Md</td>
</tr>
<tr>
<td>08</td>
<td>Optime, Doxtor</td>
<td></td>
<td>08/10/93</td>
<td>M</td>
<td>GOR 03</td>
<td>1200</td>
<td>Laparotomy Exploratory - N/A</td>
<td>Turner, Md</td>
</tr>
<tr>
<td>09</td>
<td>Gtournahiotic, Test</td>
<td></td>
<td>04/03/80</td>
<td>M</td>
<td>GOR 05</td>
<td>0740</td>
<td>Replacement Knee Total - Right</td>
<td>Schmidt, Md</td>
</tr>
<tr>
<td>10</td>
<td>Gsixhourtest, Kenny</td>
<td></td>
<td>04/09/72</td>
<td>M</td>
<td>GOR 03</td>
<td>0800</td>
<td>Resection Colon Sigmoid - Left</td>
<td>Rotolo, Md</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

“To every patient, every time, we will provide the care that we would want for our own loved ones.”
Specific Pre-Op Checklist Questions

- Only required if the patient is an ERAS patient
# Anesthesia Intra-Op Checklist

## ERAS CHECKLIST

### ERAS PATIENT CHECKLIST

#### ERAS FLUID MANAGEMENT

- Non-Invasive Monitor
- Goal-Directed Fluid Management
- CVP
- Esophageal Doppler
- Albumin
- None

#### Anesthetic

- Volatile Anesthetic
- Propofol Drip
- Precedex Drip
- Other (See Comment)

#### Multi-Modal Pain Management

- Yes
- No

#### Regional Anesthesia

- Thoracic Epidural
- Spinal Anesthesia
- TAP Blocks
- QL Blocks
- Adductor Canal Block
- PEC Block
- Other - See Comments
- No Regional Anesthesia ...

#### Reason Regional Anesthesia Not Given

- Pt Pref = Patient Preference
- Surg Pref = Surgeon Preference
- Anti-Coag = Anticoagulation
- Failed Admin = Attempted but unable to administer
- 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

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

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

"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.
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
Value Derived

“To every patient, every time, we will provide the care that we would want for our own loved ones.”
The top 5 employed and non-employed Colorectal Surgeons with the highest caseload. These surgeons were responsible for 63% of all colorectal cases.
Post-ERAS Data

ALOS

9.71

4.89

Average of LOS

Physician

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

Percent to ICU

32.50% 😞

11.17% 😊

Percent to ICU

<table>
<thead>
<tr>
<th>Physician</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>APOSTOLIDES, GEORGE Y, MD</td>
<td>17.33%</td>
</tr>
<tr>
<td>WINKOFF, STEPHEN E, MD</td>
<td>16.67%</td>
</tr>
<tr>
<td>DIOCCO, JOSEPH D, MD</td>
<td>8.51%</td>
</tr>
<tr>
<td>ROTOLO, FRANCIS, MD</td>
<td>3.70%</td>
</tr>
<tr>
<td>NJ, MINGWEI, MD</td>
<td>0.00%</td>
</tr>
</tbody>
</table>
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

Colorectal → Gyn/Onc → Ortho → Gyn → TBD

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

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

Reporting Tools and Development for Enhanced Recovery After Surgery Programs

5 Reasons Enhanced Recovery After Surgery Pathways Are Becoming Standard