Scaling Up a Patient-Centric Program to an Institution Wide Initiative: It is a Team Sport

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Project Consultant
Institute for Cancer Care Innovation
Disclosures

• None
What Do We Know

• Shifting to patient-centered, value based care models

• Multidisciplinary approaches to care

• Increase patient engagement and experience

• Improve health outcomes

• Reduce healthcare costs
What Do We Know

• Enhanced Recovery Programs have been successful in providing patient-centered, value-based care

• Enhanced Recovery Programs can be used to overcome silo-based, disjointed, and uncoordinated care in large systems

• A culture shift is needed towards seamless integration of care
Objectives

• Learn about Enhanced Recovery

• Learn the value of an Enhanced Recovery Program

• Learn how to scale an Enhanced Recovery Program to an institution wide initiative
Audience Poll

- How many know what enhanced recovery is?
- How many have an enhanced recovery program in their hospital/clinic?
- How many have participated with an enhanced recovery program?
- What is your title?
  - Physician
  - Nurse
  - Behavioral Health Provider
  - Executive
  - Management
  - Pharmacy
  - Social Work
  - Dietician
  - Other?
What is an Enhanced Recovery Program (ERP)?

Initiative designed to extend the principles of patient-centric, recovery focused, value-based care to all patients.

Principles are aimed at:

• Minimizing symptom burden
• Improving functional capacity
• Return intended oncologic therapies
• Quality of life
What is an Enhanced Surgical Recovery Pathway (ESRP)?

A patient centric, multidisciplinary, perioperative care pathway designed to achieve early recovery after a surgical procedure by optimizing preoperative condition, and reducing the stress response to surgery.
ESRP Foundation

Deliver High Value Care
Enhanced Recovery

Choosing Wisely
Optimal Anesthetic Care
Pathway Based Postop Care
Rapid Rescue

Patient Education, Engagement and Empowerment
Patient Factors: Medical Optimization, functional status

www.mdanderson.org/innovation/cancercarevalue
# Enhanced Recovery v. Conventional Pathway

## MD Anderson Cancer Center Enhanced Surgical Recovery Pathway

<table>
<thead>
<tr>
<th>Pre-operative</th>
<th>Enhanced Recovery Pathway</th>
<th>Conventional Pathway</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td>General peri-operative information (online video). Additional ESRP education provided includes specific information about enhanced recovery principles, patient and caregiver expectations and pain management.</td>
<td>General post-operative information (online video).</td>
</tr>
<tr>
<td><strong>Preoperative Fasting</strong></td>
<td>Clear liquids permissible up to 2hrs before surgery except in cases where there is a higher risk of aspiration (gastroesophageal reflux disease, obesity, etc.).</td>
<td>No oral intake for 8 hours before planned surgery.</td>
</tr>
<tr>
<td><strong>Preventive Analgesia</strong></td>
<td>Tramadol ER, Cefuroxime, Oral Acetaminophen, Gabapentinoids and scopamide patch (if there are no contraindications, doses are adjusted for age, and renal and liver function).</td>
<td>No.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intra-operative</th>
<th>Enhanced Recovery Pathway</th>
<th>Conventional Pathway</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perioperative Steroids</strong></td>
<td>Dexamethasone 4mg intravenously on induction of anesthesia for PONV</td>
<td>Yes. Dexamethasone 10 mg IV for PONV</td>
</tr>
<tr>
<td><strong>Opioid Sparing Anesthesia</strong></td>
<td>Yes. Procedure and patient specific</td>
<td>No. Fentanyl (or similar agent) routinely administered.</td>
</tr>
<tr>
<td><strong>Goal Directed Therapy</strong></td>
<td>Yes. Non-invasive pulse wave monitoring used to monitor stroke volume in real-time with fluid replacement guided according to validated algorithm.</td>
<td>No. Empirical fluid replacement based on estimated blood loss and insensible loss.</td>
</tr>
<tr>
<td><strong>Regional Analgesia</strong></td>
<td>Preincisional procedure and patient specific regional block, or local wound infiltration with long-acting liposomal bupivacaine (Exparel).</td>
<td>Epidural analgesia or IV patient controlled analgesia (PCA).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Post-operative</th>
<th>Enhanced Recovery Pathway</th>
<th>Conventional Pathway</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opioid Sparing Analgesia</strong></td>
<td>Yes. Protocol-based procedure specific multimodal opioid sparing approach to post-operative analgesia. Opioids used for severe pain.</td>
<td>No. Regional analgesia with or without IV PCA. Additional intravenous narcotics administered if needed.</td>
</tr>
<tr>
<td><strong>Early Ambulation</strong></td>
<td>Yes. Patients routinely ambulating on day of surgery. Out of bed to chair encouraged and ambulation at least 6 times daily.</td>
<td>Yes. Patients routinely ambulating day after surgery. Out of bed to chair encouraged and ambulation at least 4 times daily.</td>
</tr>
<tr>
<td><strong>Early Oral Intake</strong></td>
<td>Patients allowed clear liquids on day of surgery. Diet advanced as tolerated.</td>
<td>Patients begin clear liquids the day after surgery and diet advanced as tolerated thereafter.</td>
</tr>
<tr>
<td><strong>Minimisation of drains</strong></td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Post-discharge</th>
<th>Enhanced Recovery Pathway</th>
<th>Conventional Pathway</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Follow-up</strong></td>
<td>Yes. Procedure specific for symptom burden, recovery pattern (MDASI), early signs of infections and thrombotic complications.</td>
<td>Yes. On first postop visit.</td>
</tr>
<tr>
<td><strong>Return to baseline function and IOT</strong></td>
<td>Yes.</td>
<td>No.</td>
</tr>
<tr>
<td><strong>30, 60 and 90 D MDASI</strong></td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>
ESRP Process Map

START

1. Patient arrives at MD Anderson for continued care
   - Involvement: Pain Med, PT, OT, Integrative Med, cancer care

2. Is surgery indicated?
   - Yes: Anesthesia Assessment Center and IMPAC if needed
     - Involvement: Anesthesiology
   - No: Follow up clinics visits as needed

3. Patient visits clinic 2 weeks – 4 months in advance of surgery
   - Involvement: Pain Med, PT, OT, Integrative Med

4. Patient in holding area
   - Involvement: Surgeons and Anesthesiologist

5. Surgery complete and patient delivered to post surgical team

6. Which level of post care needed?
   - Involvement: Surgeons and Anesthesiologist

7. ICU
   - Involvement: Dieticians

8. PTU or PT Room?
   - PTU
   - PTU, Rehab, or Floor?
     - PTU
     - Inpatient Room

9. Discharge

END

Activities: Ambulation, PT/OT, Rehab, PT

10. Treatment Complete

11. Period of RIOT or other follow up

12. Patient at home
perioperative changes in functional capacity

surgery

multi-modal intervention (pain relief, exercise, feeding, stress-reduction)

functional capacity

days

weeks

Kehlet Br J Anaesth 1997;78: 606-17
Enhanced Recovery

PROs: Symptom Interference

ERP Elements

Return to Normal Function/IOT ASAP

Reduce Anxiety, Narcotics, and Fluids

Surgery – Nursing - Anesthesiology

Manso/Aloia, JSO, 2017
What are the most important components of an ERP?

- Preoperative patient education
- Limitation of bowel preparation
- Reduced preoperative fasting
- Preoperative carbohydrate loading
- Preoperative non-narcotic analgesic medications
- Withholding sedative medications before surgery
- Post op nausea/vomiting prophylaxis
- MIS approach
- Intraoperative warming
- Narcotic limitation

- Increased $Fio_2$
- NGT management/avoidance
- Epidural/regional analgesia use
- Intraoperative fluid restriction
- Postoperative fluid restriction
- Routine laxative or prokinetic use
- Postoperative protein supplements
- Postoperative carbohydrate supplements
- Early postoperative diet
- Early postoperative mobilization
- Urinary catheter management/avoidance
- Intra-abdominal drain management/avoidance
- Other:
## Enhanced Recovery Measures of Performance

<table>
<thead>
<tr>
<th>Patient Reported Outcomes</th>
<th>Frequency/Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perioperative pain/others on MDASI – all teams</td>
<td>Daily until full week &lt; 3 on MDASI</td>
</tr>
<tr>
<td>End-of-surgery to 90% functional recovery time -(assist from R01 if awarded &amp; goals reached)</td>
<td>Days from surgery to patient 90% feedback score</td>
</tr>
<tr>
<td>Postoperative morbidity</td>
<td>Index every 2 weeks for 6 months post surgery</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clinical Outcomes</th>
<th>Frequency/Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post operative complications</td>
<td>Count, frequency, grade</td>
</tr>
<tr>
<td>Readmissions</td>
<td>Count within time period</td>
</tr>
<tr>
<td>Return to Intended oncological therapy (RIOT) or medical readiness assessment for discharge (MRFD)</td>
<td>Days from surgery to OT start or MRFD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business Outcomes</th>
<th>Frequency/Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of hospital stay</td>
<td>Days from surgery to discharge</td>
</tr>
<tr>
<td>Episode or total TDABC cost for patient</td>
<td>Total true MDACC costs / total patient costs</td>
</tr>
</tbody>
</table>
ERP at MD Anderson
Where Is ERP Now?

- 16 Teams
- Over 7,000 Patients Treated
- National Leader
- Over 40 Publications

www.mdanderson.org/innovation/cancercarevalue
ESRP Is A Partnership

Anesthesiology

Institute for Cancer Care Innovation

Nursing

Surgery

Patients & Caregivers

Nutrition

Pharmacy

Information Technology/Systems

Leadership

Finance
## MD Anderson Cancer Center Team Progress

<table>
<thead>
<tr>
<th>ESRP Team</th>
<th>Start Date</th>
<th>Anesthesiology</th>
<th>Surgery</th>
<th>Patients</th>
<th>Opioids</th>
<th>Pain</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liver</td>
<td>8/1/2013</td>
<td>Gottumukkala</td>
<td>Aloia</td>
<td>713</td>
<td>↓</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td>Thoracic</td>
<td>10/1/2014</td>
<td>Mena</td>
<td>Rice</td>
<td>1,062</td>
<td>↓</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td>Gynecologic</td>
<td>11/1/2014</td>
<td>Lasala</td>
<td>Ramirez</td>
<td>1,783</td>
<td>↓</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td>Bladder</td>
<td>7/1/2014</td>
<td>Williams III</td>
<td>Navai</td>
<td>567</td>
<td>↓</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td>Colorectal</td>
<td>4/1/2014</td>
<td>Speer</td>
<td>Bednarski</td>
<td>851</td>
<td>tbd</td>
<td>tbd</td>
<td>↓</td>
</tr>
<tr>
<td>Spine</td>
<td>5/1/2015</td>
<td>Popat</td>
<td>Tatsui</td>
<td>407</td>
<td>↓</td>
<td>tbd</td>
<td>↓</td>
</tr>
<tr>
<td>Pancreatic</td>
<td></td>
<td>Soliz</td>
<td>Katz</td>
<td>1,060</td>
<td>↓</td>
<td>↓</td>
<td>↓</td>
</tr>
<tr>
<td>Neuro</td>
<td>10/1/2015</td>
<td>Ferson</td>
<td>tbd</td>
<td>40</td>
<td>tbd</td>
<td>tbd</td>
<td>tbd</td>
</tr>
<tr>
<td>Breast</td>
<td>8/1/2016</td>
<td>Ifeanyi</td>
<td>Miggins</td>
<td>20</td>
<td>tbd</td>
<td>tbd</td>
<td>tbd</td>
</tr>
<tr>
<td>Head &amp; Neck</td>
<td>8/1/2016</td>
<td>Lewis</td>
<td>Zheng</td>
<td>393</td>
<td>tbd</td>
<td>tbd</td>
<td>tbd</td>
</tr>
</tbody>
</table>

*Reduction increases value*
ERP: A Model for Patient-Centered, Value Based Care
Value in healthcare is measured by how well your hospital meets your patient’s goals of recovery from illness
Key Questions?

How well does your organization recover patients?

What is your patient’s experience with recovery?
Porter’s Tiers of Value

• Tier 1 - Health Status Achieved with Treatment
  – No complications
  – Degree of health or recovery

• Tier 2 - Process of Recovery
  – Time to recovery and return to function
  – Disutility of care

• Tier 3 - Sustainability of Health
  – Freedom from Recurrence of Disease
  – Long-term consequences of therapy
Value Equation v1.0

\[ \xmark \quad \text{Value} = \frac{\text{Quality/Safety}}{\text{Cost}} \]
The “New” Value Equation

\[
\text{Value} = (\text{Survival} + \text{Patient Exp}) - (\text{Harm} + \text{Disability})
\]

Patient and System Cost

Aloia/Gottumukkala, 2017
Value = \frac{\text{Quality} - (\text{Tx Related Disability} + \text{Harm})}{\text{Cost}}
ERP: An Institution Wide Initiative
Implementation

- Leadership Support (Signed Documentation)
- Anesthesiology lead
- Surgery lead
- Multidisciplinary team member identification/engagement (nursing, dietician, IT, palliative care, supportive services, PT/OT, etc.)
- Identification of ERP goal for team
- Nursing/Provider education
- Care pathway development
- Structured documentation
- EMR enhancements
- Baseline metrics
- Data resource
- REDCap database
- Funding
- Order sets
- Patient education
- Compliance tracking and auditing
Key Components

01 Multi-Disciplinary Partnership
02 Shared Common Goals
03 Data Governance
04 Leadership Support
Which is most important when scaling an ERP to an institutional initiative?

- Multi-Disciplinary Partnership
- Shared Common Goals
- Data Governance
- Leadership Support
Standardization Needed

Clinical Care Pathways
- Preoperative
- Prehabilitation
- Intraoperative
- Postoperative
- Post Discharge

Pathway Education
- Nursing
- Provider
- Nutrition
- Patient
- Caregiver

Data Collection, Extraction & Reporting
- Outcomes Metrics
- Compliancy Metrics
- Financial Metrics

ERP Order Sets
- Preoperative
- Intraoperative
- Postoperative
- Post Discharge

www.mdanderson.org/innovation/cancercarevalue
### Data Collection / Measurement

<table>
<thead>
<tr>
<th>Core Dataset (all patients)</th>
<th>Core Dataset – comprised of easily recordable routine administrative data.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Improvement Dataset (representative sample of 20% caseload)</td>
<td>Quality Improvement Dataset – More comprehensive with recommended collection at regular intervals.</td>
</tr>
<tr>
<td>DREAMS – Process measures used as a surrogate of outcome.</td>
<td>- DREAMS – Process measures used as a surrogate of outcome.</td>
</tr>
<tr>
<td>Patient-Centered outcomes consistent with restoration of normal physiological state</td>
<td>- Patient-Centered outcomes consistent with restoration of normal physiological state</td>
</tr>
<tr>
<td>Early attainment should be considered markers of successful ESRP.</td>
<td>- Early attainment should be considered markers of successful ESRP.</td>
</tr>
<tr>
<td>Best Practice Dataset (All patients)</td>
<td>Best Practice Dataset – Aspirational, comprehensive measurement and monitoring system.</td>
</tr>
<tr>
<td>Tendency to focus on individual elements of the pathway</td>
<td>- Tendency to focus on individual elements of the pathway</td>
</tr>
<tr>
<td>Each element should be evidence based</td>
<td>- Each element should be evidence based</td>
</tr>
<tr>
<td>The package should be the focus</td>
<td>- The package should be the focus</td>
</tr>
</tbody>
</table>

Measurement Matrix for colorectal enhanced recovery pathways

*Moonesinghe et al. Perioperative Medicine (2017) 6:6*
*Levy et al. Anesthesia (2017) 71*
• Promote a patient-centered and holistic approach
• Facilitate pervasive and sustained change adoption
• Embrace and expedite the process of change
• Support the functioning and development of change teams
• Assist in identifying and managing barriers to change
• Assist in engaging and educating all staff members
• Provide structure and support for responsible local adaptation
• Build a structure for implementation of future change
Best Practices

- Keep it patient-centered
- A coalition of change leadership teams
- Get a lay of the land
- Responsible local adaptation
- Make compliance easy
- Educate everyone
- Consensus & commitment
- Support
- Data collection & dissemination
- Keep going!
# Motivators for Change

| 1. Patients | Improves patient experience (symptom control and functional recovery), improves surgical and oncological outcomes (minimizes complications and enhances RIOT). **Patient functional status and quality of life is key.** |
| 2. Institution | Reasonable “cost avoidance enabler”. Improved HCAHPS scoring and hospital rankings due to PRO use. Reductions in perioperative risk, harm and complications. |
| 3. Providers | Improves provider engagement and satisfaction from working in patient centered effective teams, individual participation/leadership of ERP multidisciplinary collaborative efforts enables notoriety for clinicians, and offers a path for professional development and career advancement. |
| 4. Payers | Reduced complication rates, reductions in average length of stay and readmission rates help in controlling costs for episodes of care. |
| 5. Employers | Patients return to work sooner, with a reduction in absenteeism and better health status of employees. |
| 6. Society | Improved population health and a reduction in overall health care costs by improving efficiency (minimizing waste) and minimizing complications. |
To Date

High impact on:
- Patient outcomes and functional recovery
- Value-based care strategies
- Culture (team) of team based perioperative care

Current State

- Leading cancer focused ESRP program in the World
- Expanding beyond surgery and across service lines
- Continuously improving and optimizing program
- Innovative approach to patient-centric care

Future State

MDA Center of Excellence
- Expansion to all patients at MDACC
- Expand program within the University of Texas network
- Be a global leader in Perioperative Care of the Cancer Patient
It Is a Team Based Sport

WHAT IS TEAMWORK?

“Teamwork is the ability to work together toward a common vision. The ability to direct individual accomplishments toward organizational objectives. It is the fuel that allows common people to attain uncommon results.”

-Andrew Carnegie
# ERP Surgical Team Leads

<table>
<thead>
<tr>
<th>ESRP Team Leads (Surgical)</th>
<th>Program Co-Chairs: Anesthesiology/Perioperative Medicine – Dr. Vijaya Gottumukkala; Surgical Oncology – Dr. Thomas Aloia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team</td>
<td>Anest Lead</td>
</tr>
<tr>
<td>Liver Surgery</td>
<td>Vijaya Gottumukkala</td>
</tr>
<tr>
<td>Thoracic Surgery</td>
<td>Gabriel Mena</td>
</tr>
<tr>
<td>GYN Surgery</td>
<td>Javier Lasala</td>
</tr>
<tr>
<td>Bladder Surgery</td>
<td>Wendell Williams III</td>
</tr>
<tr>
<td>Pancreatic Surgery</td>
<td>Jose Soliz</td>
</tr>
<tr>
<td>Colorectal Surgery</td>
<td>Bryce Speer</td>
</tr>
<tr>
<td>Spine Surgery</td>
<td>Keyuri Popat</td>
</tr>
<tr>
<td>Neuro Surgery</td>
<td>David Ferson</td>
</tr>
<tr>
<td>Breast Surgery</td>
<td>Gabriel Mena</td>
</tr>
<tr>
<td>Head/Neck Surgery</td>
<td>Zheng Gang</td>
</tr>
<tr>
<td>MRPEC Surgery</td>
<td>Pascal Owusu-Agyemang</td>
</tr>
<tr>
<td>Autologous Breast Re/W Free Flap</td>
<td>Bryce Speer</td>
</tr>
<tr>
<td>Gastrectomy</td>
<td>Ravish Kapoor</td>
</tr>
<tr>
<td>Hip/Knee Arthroplasty</td>
<td>Thomas McHugh</td>
</tr>
</tbody>
</table>

*Project Consultant: Brittany Kruse, DBH | Nursing: Luisa Gallardo | Carla Baker APN | Alita Campbell RN*
## ESRP Team Leads (Non-Surgical)

<table>
<thead>
<tr>
<th>Team</th>
<th>Anest Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Center</td>
<td>Adriana Wechsler</td>
</tr>
<tr>
<td>Medical Oncology</td>
<td>Marina George</td>
</tr>
<tr>
<td>Stem Cell Transplantation</td>
<td>Uday Popat</td>
</tr>
</tbody>
</table>

Project Consultant: Brittany Kruse, DBH | Nursing: Luisa Gallardo
Thank You!