ERAS: Bridging the Gaps in Multimodal Analgesia

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ASPMN
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Target Audience

- The overarching goal of PCSS is to train a diverse range of healthcare professionals in the safe and effective prescribing of opioid medications for the treatment of pain, as well as the treatment of substance use disorders, particularly opioid use disorders, with medication-assisted treatments.
Outline

I. What is ERAS?

II. Components of ERAS
   A. Team
   B. Preoperative Education
   C. Preoperative Patient Care
   D. Intraoperative Patient Care
   E. Postoperative Patient Care
   F. Floor Care

III. Quality Improvement

IV. The Future
Educational Objectives

• At the conclusion of this activity participants should be able to:
  A. Define Enhanced Recovery After Surgery (ERAS)
  B. Compare and contrast multimodal analgesia for the ERAS patient.
  C. Describe the impact of ERAS on the neurospinal patient population.
Enhanced Recovery After Surgery (ERAS)

Developed by surgeon Henrik Kehlet in Denmark in 1990s

Original protocols were colon resections followed by orthopedics

Utilizing evidence based medicine, Swedish surgeon Ollie Ljungvist and colleagues, published and organized the protocols under the Enhanced Recovery After Surgery Society in 2012.

In 2014, the American Society for Enhanced Recovery was launched and now serves as a clearing house for various protocols and a learning guide to building a program - https://www.aserhq.org
What and Why?

• Systematic approach to preparing and providing patient care before, during and after surgery to decrease physiological stress on the body
• Focuses on the following fundamentals:
  Preoperative patient optimization
  Multimodal analgesia
  Perioperative fluid optimization
• Resulting in:
  Decreased pain; decreased opioids
  Increased mobilization
  Decreased length of stay
  Decreased complications/readmissions
Never believe that a few caring people can't change the world. For, indeed, that's all who ever have.

Margaret Meade
Our Team

- Started research in September 2017
- First meeting October 2017
- Reviewed published pathways and clinical guidelines for development
- Nutritional review of preoperative supplements
- Pharmacy review of all meds – IV acetaminophen and Exparel™
- Review of blocks with anesthesia
- Surgeon, staff and patient education
- National Conference Fall of 2018
- First specialities: Colon resections and Prostatectomy

Team members:
- PSC/POH/PACU Educator
- CRNA
- Anesthesiologist
- Surgeons – 2 colorectal
- Nurse Practitioner
- Med-Surg Director/Sr. Director
- POH/OR/PACU Directors/Sr. Director
- Oncology Director/Supervisor
- Pharmacist
- Nutritionist
- Physical Therapist
- Clinical Infomatics Liaison
- Block Nurse
- OR Team Leaders
Focus on Education

<table>
<thead>
<tr>
<th>Who?</th>
<th>What?</th>
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</thead>
<tbody>
<tr>
<td>Office Staff</td>
<td>Physician order sets, patient instructions</td>
</tr>
<tr>
<td>Surgery Scheduling</td>
<td>Notification of ERAS patients</td>
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<tr>
<td>PreSurgery Clinic</td>
<td>Patient Instruction</td>
</tr>
<tr>
<td>Pre-Op</td>
<td>PO fluids and preoperative medications for multimodal analgesia; blocks – single shot and continuous</td>
</tr>
<tr>
<td>Intraoperative</td>
<td>Increase usage of ketamine and decrease usage of fentanyl; noninvasive hemodynamic monitoring</td>
</tr>
<tr>
<td>PACU</td>
<td>Increase usage of ketorolac</td>
</tr>
<tr>
<td>Floor</td>
<td>Multimodal analgesia; limited opioids; PO fluids and ambulation on day of surgery</td>
</tr>
</tbody>
</table>
Sample of Preop Instructions

Enhanced Recovery after Surgery (ERAS)

- **Overview** – Speeds up recovery process including wound healing and spending less time in the hospital
- Enhanced nutrition to promote healing
- Different medications will be used to decrease the use of narcotics during and after surgery. This will help to decrease the groggy (sleepy) feeling after surgery, yet provide good pain control.
- Early movement after surgery to speed up return of bowel function and improve recovery time.
- You will return to your normal diet sooner

**Nutritional Supplements**

- **Impact AR**: nutritional supplement to help rebuild dividing cells; fight infection, promote wound healing, increase gut oxygenation, motility and help manage inflammation.
  - Comes in vanilla flavor. You can add things such as fruit to improve the taste. Most patients feel the taste is very tolerable.
  - You will need to begin drinking either 5 or 6 days before your surgery date (see your personalized calendar): 1 bottle 3 times per day for 5 days.
  - Do not drink on day of bowel prep if applicable.
- **ClearFast**: complex carbohydrate loading drink prior to surgery. May use Gatorade G2 if diabetic. Drink 1 bottle 2 hours before arrival to hospital for surgery.
Sample of Preop Instructions, cont’d.

Preoperative medications

• You will be given the medications when you arrive to the hospital in preop holding. These medications include: non-narcotic pain medications (Tylenol, gabapentin, and/or Celebrex); anti-nausea medications, and a medication (Entereg) to help restore stomach function after colon surgery.
• Anesthesia will perform a block for post-operative pain. This block will help to control your pain after surgery. The specific type of block will be discussed with you by the anesthesiologist on the morning of surgery.

After Surgery

• You will receive pain medication as scheduled and as needed
• You will be up walking 2-3 hours after surgery
• You will not have any drains or tubes but you will have a dressing
• Most patients will start on a clear liquid diet after surgery and advanced to a regular diet as tolerated.
• You will be given Impact to drink 1 bottle 3 times per day for 5 days after your surgery.
Patient Calendar

We appreciate you choosing North Kansas City Hospital for your upcoming surgery. We have created this tool to help you prepare for your surgery and for your recovery. It is very important that you follow each step according to the directions. If you have any questions, please do not hesitate to contact your surgeon or the PreSurgery Clinic at 816-691-1344.

1. Your surgery is scheduled for __________________ at ____________.

2. Five days before your surgery on ____________
   drink one bottle of Impact in the morning, afternoon, and evening. You have been given enough Impact drink to prepare you for surgery and this can be refrigerated. You may use this calendar as a guide to help keep track:

<table>
<thead>
<tr>
<th></th>
<th>5 days before</th>
<th>4 days before</th>
<th>3 days before</th>
<th>2 days before</th>
<th>1 day before</th>
<th>Day of surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning</td>
<td></td>
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<tr>
<td>Afternoon</td>
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<tr>
<td>Evening</td>
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</table>

3. On the morning of your surgery at _______________ (2 hours before your arrival time to the hospital), drink one bottle of Clearfast (you can refrigerate this). If you are diabetic, you may drink 12 ounces of water. You may use this calendar as a guide to help keep track:

<table>
<thead>
<tr>
<th>2 hours before arrival time:</th>
<th>Clearfast 1 bottle or water if diabetic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clearfast 1 bottle or water if diabetic</td>
</tr>
</tbody>
</table>

4. On the morning of surgery be at the Preop Holding Unit at:
   __________Second Floor of the Main Hospital (816-691-1759)
   __________Third Floor of the Pavilion. (816-691-1758)

5. If you have questions on the morning of surgery, contact the number listed above.

Your North Kansas City Hospital Surgical Team.
# Day of Surgery: Preoperative Care

<table>
<thead>
<tr>
<th>At Home</th>
<th>Preop Medications on Arrival</th>
<th>Anesthesia Blocks – performed in Preop</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle of Clearfast 3 hours prior to surgery time, example surgery scheduled for 0800, drink at 0500</td>
<td>Acetaminophen 1000 mg PO (all patients)</td>
<td>Transverse Abdominus Plane (TAP) – used in general surgery, urology, gynecology</td>
</tr>
<tr>
<td>If diabetic, may drink 12 ounces water or Gatorade G2 3 hours prior to surgery time</td>
<td>Gabapentin 300, 400, 600 mg PO (dependent upon physician and/or patient)</td>
<td>Single shot or continuous: adductor canal, femoral (knees); scalene (shoulders); fascia iliaca (hips); popliteal (distal lower leg or combination with other blocks)</td>
</tr>
<tr>
<td></td>
<td>Celecoxib (Celebrex) 200 mg PO for orthopedics, gyn, neurospinal patients</td>
<td></td>
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<tr>
<td></td>
<td>Alvimopan (Entereg) 12 mg PO for colorectal, prostatectomy patients</td>
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<tr>
<td></td>
<td>Scopolamine patch 1.5mg topically (bariatrics and patients with history of N&amp;V)</td>
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</tbody>
</table>
TAP Block

T10 – T12 and first lumbar nerve between the transverse abdominus and internal oblique muscles. Responsible for sensation to the abdominal wall, not the organs themselves.
Day of Surgery: Intraoperative Care

Fluid monitoring (non-invasive)
Decreased opioid use with increased use of multimodal medications:
- Local infiltration of surgical site (Exparel)
- Ketorolac (Toradol)
- Acetaminophen IV if not given preoperatively
- Ketamine
- Dexamethasone (Decadron)
- Low dose lidocaine infusion

Maintenance of normothermia:
- Warm air flow blankets
- Warmed parenteral fluids
Day of Surgery: PACU Care

- No drains
- No Foley catheter
- No nasogastric tube
- Opioids only as needed (fentanyl or hydromorphone)
- Ensure all NSAIDs are administered, especially ketorolac (Toradol), if not given in preop or OR administer in PACU
- No patient controlled analgesia (PCA)
- Sips and chips
### Routine Nursing Floor Care

<table>
<thead>
<tr>
<th>Medications</th>
<th>Activity</th>
<th>Activity Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetaminophen 1000mg PO every 6 hours (all patients)</td>
<td>Oxycodone 5-15mg PO q 4 hours for pain</td>
<td>Ambulate within 2-3 hours of arrival to floor</td>
</tr>
<tr>
<td>Ketorolac 15 or 30 mg IV every 6 hours (may not be used in orthopedics)</td>
<td>Tramadol (Ultram) 50-100 mg PO q 6 hours for pain</td>
<td>Advance diet to regular diet day of surgery; up to chair to eat</td>
</tr>
<tr>
<td>Gabapentin 400 or 600 mg BID PO (age and physician dependent)</td>
<td></td>
<td>Impact, nutritional supplement, TID times 5 days postop</td>
</tr>
<tr>
<td>Alvimopan 12 mg PO until return of bowel sounds (colorectal and prostatectomy)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Celebrex 200 mg PO daily for gyn and ortho</td>
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</tr>
</tbody>
</table>
**Enhanced Recovery After Surgery (ERAS)**

A means of preparing patients optimally for surgery and providing care postoperatively decreasing length of stay and opioid (narcotic) usage. Elements include:

- **Nutritional supplements**: Impact 5 days before surgery; and Clearfast 3 hours prior to surgery
- **Multimodal analgesia in POH, OR and PACU including blocks**
- **Floor elements**: RTC IV toradol and PO acetaminophen for pain; no PCA; opioid (narcotic) use for severe pain only,
- **Floor elements continued**: up walking 3 hours after arrival to floor; may or may not be NPO after surgery; up in chair for meals; nutritional supplement, Impact, TID times 5 days postop

TAP blocks may be used for analgesia. A TAP block is performed by anesthesia and provides analgesia by blocking the sensory nerves of the anterior abdominal wall. A long acting local anesthetic is placed between the internal oblique and transversus abdominis muscles. It does not affect the diaphragm.

For questions call:
Laura Habighorst ext. 1797 or 816-729-8446
Jodi Myers ASCOM 8983 or
Amy Taylor ASCOM 8201

For more information regarding ERAS, you can go to:
American Society for Enhanced Recovery
[http://aserhq.org](http://aserhq.org)
Multimodal Analgesia

Pain Pathway - 4 processes involved
1. Transduction
2. Transmission
3. Perception of pain
4. Modulation

1. Peripheral tissues
2. Spinal cord
3. Brain
4. Descending modulation
Multimodal Analgesia

Mechanism of Action of Selected Analgesics

- Ascending pathway
- Descending pathway
- TCAs, SNRIs, Anticonvulsants
- Opioids
- Nerve Blocks, Anticonvulsants
- NSAIDS, COX-2s
Our Surgical Specialties

- Colorectal
- Prostatectomy
- Urology
- General surgery
- Orthopedic
- Gynecology
- Neurospinal
- Bariatrics
In God we trust; all others bring data.

W. Edwards Deming
ERAS Lives on DATA

<table>
<thead>
<tr>
<th>MRN</th>
<th>Last Name</th>
<th>First Name</th>
<th>PSC Visit Date</th>
<th>Procedure Date</th>
<th>Age</th>
<th>Gender</th>
<th>BMI</th>
<th>Surgeon</th>
<th>Procedure Type</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Discipline</th>
<th>HgA1C</th>
<th>Glucose mg/dL</th>
<th>Glucose mg/dL POD1</th>
<th>Nutritional Supplement</th>
<th>Hours NPO Prior to Surgery</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Preop</th>
<th>Intraop</th>
<th>PACU</th>
<th>Postop Day 0</th>
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</thead>
<tbody>
<tr>
<td>Medications</td>
<td>Dose</td>
<td>Medications</td>
<td>Dose</td>
</tr>
<tr>
<td>Fluid mL</td>
<td>EBL mL</td>
<td>Zofran mg</td>
<td>Medications</td>
</tr>
<tr>
<td>Fluid mL</td>
<td>Medications</td>
<td>Dose</td>
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<table>
<thead>
<tr>
<th>Postop Day 1</th>
<th>Postop Day 2</th>
<th>Postop Day 3</th>
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<tbody>
<tr>
<td>Medications</td>
<td>Dose</td>
<td>Medications</td>
</tr>
<tr>
<td>Medications</td>
<td>Dose</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Ambulation</th>
<th>Fluids After Surgery</th>
<th>Avg Pain Score</th>
<th>Morphine Equivalents</th>
<th>Regular Diet</th>
<th>LOS</th>
<th>Other Notes</th>
</tr>
</thead>
</table>

PCSS Providers Clinical Support System
One Surgical Specialty - Neurospinal

ERAS Cases

<table>
<thead>
<tr>
<th></th>
<th>Sep-18</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan-19</th>
<th>Feb</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
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<tbody>
<tr>
<td># cases</td>
<td>1</td>
<td>4</td>
<td>10</td>
<td>9</td>
<td>14</td>
<td>19</td>
<td>14</td>
<td>14</td>
<td>22</td>
<td>17</td>
</tr>
<tr>
<td>LOS</td>
<td>1</td>
<td>1.75</td>
<td>1.5</td>
<td>1.7</td>
<td>1.7</td>
<td>1.7</td>
<td>2.3</td>
<td>1.9</td>
<td>1.9</td>
<td>2.5</td>
</tr>
<tr>
<td>Pain Scores</td>
<td>2.5</td>
<td>5.5</td>
<td>3.65</td>
<td>4.9</td>
<td>3.65</td>
<td>4.32</td>
<td>4.2</td>
<td>3.8</td>
<td>4</td>
<td>4.2</td>
</tr>
</tbody>
</table>
Neurospinal, cont’d.
What’s to Come?

For us:
• Preop orders to be standardized with ERAS
• Acute Pain Service ????
• Clinical Coordinator
• Potential for Cardiovascular to join ERAS
• Working with IT to make data collection easier
• More education – always more
Thank YOU!

This presentation is dedicated to

Ellyn Schreiner, RN
Past President of ASPMN
Member of PCSS
Mentor to Many

Passed away from complications of COVID-19
April 14, 2020
References


References, cont’d.


PCSS Mentoring Program

- PCSS Mentor Program is designed to offer general information to clinicians about evidence-based clinical practices in prescribing medications for opioid addiction.

- PCSS Mentors are a national network of providers with expertise in addictions, pain, evidence-based treatment including medication-assisted treatment.
  
  - 3-tiered approach allows every mentor/mentee relationship to be unique and catered to the specific needs of the mentee.
  
  - No cost.

For more information visit: pcssnow.org/mentoring
PCSS Discussion Forum

Have a clinical question?

Ask a Colleague

A simple and direct way to receive an answer related to medication-assisted treatment. Designed to provide a prompt response to simple practice-related questions.

Ask Now
PCSS is a collaborative effort led by the American Academy of Addiction Psychiatry (AAAP) in partnership with:

| American Academy of Family Physicians | American Psychiatric Association |
| American Academy of Neurology | American Society of Addiction Medicine |
| Addiction Technology Transfer Center | American Society of Pain Management Nursing |
| American Academy of Pain Medicine | Association for Medical Education and Research in Substance Abuse |
| American Academy of Pediatrics | International Nurses Society on Addictions |
| American College of Emergency Physicians | American Psychiatric Nurses Association |
| American College of Physicians | National Association of Community Health Centers |
| American Dental Association | National Association of Drug Court Professionals |
| American Medical Association | Southeastern Consortium for Substance Abuse Training |
| American Osteopathic Academy of Addiction Medicine | |
Educate. Train. Mentor

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