

Enhanced Recovery after Surgery

AKA

ERAS



What is Enhanced Recovery (ER)?

- Paradigm shift in surgery and surgical care of the patient
- Philosophy of care
- Perioperative continuum
- Multidisciplinary
- Patient centered



ERAS 1.0 Henrik Kehlet, MD, PhD, 1997

- Five Essential Elements of Enhanced Recovery
 - Pre-op patient education & preparation
 - Epidural analgesia
 - No NG tube
 - Early feeding and ambulation
 - Keep patient normovolemic



ERAS 2.0 Cleveland Clinic, 2014

- 19 Elements of Enhanced Recovery
- Increasing focus on the patient's physical condition prior to surgery
 - Co-morbidities
 - Chronic or acute
 - ASA I-II or III-IV
 - Risk assessment
 - Frailty score



“Why is the patient in hospital today?”

Kehlet, H. 2003, 2008, 2013 & 2016

- Not what brought them in the first place; but why TODAY?
 - Organ dysfunction (surgical stress)
 - Hypothermia-Induced morbidity
 - Pain
 - PONV / Ileus
 - Fluid excess / deficit
 - Cognitive dysfunction (delirium) / sleep deprivation
 - Immobility / semi-starvation
 - Blood management
 - Fatigue
 - Traditions (tubes, drains, restrictions, etc.)
- All reduced by instituting Enhanced Recovery protocols



Old and New

ERAS - Preop

- Extensive pt/family education
- Minimal fasting
- Carb loading
- DVT prophylaxis
- ATB prophylaxis
- Incentive spirometry one week prior 10x/hr/day

Traditional - Preop

- Limited, fragmented education from healthcare providers
- Clears for 24 hrs. then NPO after 0000 DOS
- Remains NPO



Old and New

ERAS - Intraop

- Minimally invasive surgical techniques
 - Laparoscopic/Robotic
- Fluid management
 - Keep pt. normovolemic
- Epidural analgesia

Traditional - Intraop

- Open incisions
- Liberal fluids – 0.9 NS @ 175mL/hr started and maintained x 1-2 day
 - Fluid bolus if UO, BP, HR if not WNL
 - Average 3-7 liters before stopped and pt tolerates po intake
- IV analgesia



Old and New

ERAS – Post op

- Early removal of Foley
- No NG
- Reg. diet
- Multi-modal analgesia
- Walking within hours
- POD 1 in chair 6-8 hr
- Gum chewing

Traditional – Post op

- Foley out POD 2-3
- NG to ILWS
- NPO or clears x 1-2d
- IV narcotics via PCA
- Dangle DOS
- Up to chair for 1-2 hr x 3 pod 1
- 0.9 NS @ 175 mL/hr



The Perfect Storm is Here

- High, unsustainable, and variable rising costs
- Less favorable health statistics
- Government payment models: ACA & CMS
 - VBP
 - Payment reduction programs
- Increasing demand
 - Greater access
 - ACA
 - Aging population
 - Greater disease burden



Why Change What We Do?

- Improve patient experience
 - Decrease LOS
 - Decrease post-op complications
 - Decrease readmissions
 - Increase revenue
-
- HCAPS }
} Government regulations and expectations
 - CMS reimbursement }



Outcomes

- Positive patient experiences
 - Patients expressed they preferred to recover at home rather than hospital
 - Bernard & Foss (2014)
 - Patient satisfaction regarding pain control rose from the 43rd to the 98th percentile according to Press Ganey surveys Thiele et al (2015)
- Other survey data
 - Nurse responsiveness 12th to 73rd
 - Nurse friendliness 18th to 93rd
 - Overall nursing care 14th to 47th
 - Thiele et al (2015)



Outcomes

- LOS decreased in every study done with an average decrease of 2.3 days (**p=0.0002**)
- Quality did not suffer even though patients left sooner
 - 30 day readmissions did not increase
 - SSI rates decreased from 20.4% to 7.3% (**p=0.008**)

- Thiele et al (2015)



Outcomes

- Financial implications

- Mean direct costs decreased from \$20,435 to \$13,306 = (\$7,129) or a total savings for the ERAS study group (n=109) of \$777,061 ($p < 0.001$)
- This saving translated to 261 pt-bed days which would have allowed the hospital to admit 47 more patients in the six month study period
- Not only is there a financial gain from decreased expenses from LOS but also increased revenue from additional patients admitted (~100/yr.)

- Thiele et al (2015)



ERAS timeline

- 2014- most ERAS started by new surgeon for bariatric surgery patients.
- 2015- ERAS task force began meeting and planning for additional service lines.
- Spring 2016 Core team members attended the national ERAS meeting.
- Summer 2016 planning and team meetings
- September 2016 GO LIVE!
- FY 2017 1st and 2nd quarter focus on optimization and end user feedback



ERAS interventions for Memorial Health System

- Once decision for surgery, physician starts the order set and provides literature, education, and ERAS “bag” (High Carbohydrate juice, Incentive Spirometer for practice, gum for inpatient stay)
- Pre-Admission testing reinforces education, provides face to face visit with anesthesiologist and provides scripts for Neurontin and Celebrex. Ensures optimization of surgical patient.
- Day of Surgery: patient takes Neurontin, Celebrex, Tylenol along with high carb juice prior to leaving their home.
- Regional anesthesia (TAP block, spinal/epidural)
- Lidocaine, Ketamine, PONV prevention and Toradol (end of case)



ERAS interventions Post-op

Day of Surgery

- OOB to chair
- PCEA analgesia
- Clear liquids
- Incentive Spirometer
- Chew Gum every 30 minutes

POD 1

- Diet as Tolerated
- Incentive Spirometer
- Chew Gum every 30 minutes
- OOB 8 hrs/day
- Walking
- Foley Catheter removed



ERAS interventions Post-op Con't

POD 2

- Regular Diet
- Incentive Spirometer
- Chew Gum every 30 minutes
- OOB 8 hrs/day
- Walking
- Epidural Removed

POD 3

- Regular Diet
- Incentive Spirometer
- Chew Gum every 30 minutes
- OOB 8 hrs/day
- Walking
- Plan to be discharged



Patient Education Brochure

WELCOME

Memorial Health System's surgical services team welcomes you. Thank you for choosing us for your procedure. We are here to ensure you are comfortable and at ease throughout your surgery experience. We realize that even the simplest surgery can be stressful and we want your experience to be the best that it can be. We are trained to meet your needs and are here for you every step of the way.

This guide is designed to help you and your family be prepared for your bowel surgery. Please review this information and follow the instructions. If you have any questions, contact us at (740) 374-1796.



Pre-Op Visit

I WILL POTENTIALLY:

- Have an ECG, if I am older than 50 years of age
- Have a chest x-ray
- Have blood tests

MEET WITH A NURSE WHO WILL:

- Tell me how to get ready for surgery
- Tell me what to expect while I'm in the hospital
- Give me written instructions to take home
- Gather important medical history and medication information

MEET WITH A MEMBER OF MY ANESTHESIA TEAM WHO WILL:

- Give me a prescription for the medication that I will need to take before my surgery
- Perform a physical exam
- Obtain a medical and surgical history



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Day Before Surgery

I WILL:

- Eat and drink anything I wish the day before surgery
- Take my laxative and medication (if any) as prescribed by my surgeon
- Begin Golytely prep at 5 p.m.
- Receive a phone call from the hospital to confirm the time of arrival for my surgery
- Take my showers with the antibacterial soap
- Drink 12 ounces of apple or cranberry juice prior to leaving my home



Day of Surgery

I WILL:

- Take a shower with the antibacterial soap
- Take my medications as prescribed by the doctor
- Have nothing to eat or drink after midnight, as instructed

AT THE HOSPITAL, I WILL MEET WITH A NURSE WHO WILL:

- Go through a checklist with me
- Help me get ready for surgery (change into a hospital gown, put on stockings, etc.)
- Have my surgery; be transferred to the recovery room and then my room

AFTER MY SURGERY I WILL:

- Tell my nurse if my pain reaches 4/10 on the pain scale
- Start my ankle exercises

ONCE IN MY ROOM, I WILL:

- With help, get up and sit in the chair and take a walk
- Start my breathing exercises
- Start drinking liquids
- Chew gum for 30 minutes



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Day After Surgery

I WILL:

- Do my deep breathing and coughing exercises
- Use my spirometer every hour while awake
- Sit in a chair for all my meals
- With assistance, get up and walk the length of the hallway three times during the day
- Be out of bed, on and off, for at least eight hours during the day
- Tell my nurse if my pain reaches 4/10 on the pain scale
- Have the urine tube that was inserted during the surgery removed so that I can urinate on my own
- Get up and walk to the bathroom to urinate (I will not use the bedpan or urinal)
- Continue to drink liquids and if this goes well, I will be given solid food with three protein drinks to have during the day
- Chew gum for 30 minutes, three times today



Brochure Checklist



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Days After
Surgery

I WILL:

- Do my deep breathing and coughing exercises
- Use my spirometer every hour while awake
- Sit in a chair for all my meals
- With assistance, get up and walk the length of the hallway three times during the day
- Be out of bed, on and off, for at least eight hours during the day
- Tell my nurse if my pain reaches 4/10 on the pain scale
- Get up and walk to the bathroom to urinate (I will not use the bedpan or urinal)
- Have the tiny tube (epidural) in my back removed
- Eat solid foods
- Continue to drink protein drinks
- Continue to drink liquids
- Chew gum for 30 minutes, three times today
- Tell my nurse or doctor if I start passing gas
- Plan to go home tomorrow



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Days After
Surgery

I WILL:

- Do my deep breathing and coughing exercises
- Use my spirometer every hour while awake
- Sit in a chair for all my meals
- With assistance, get up and walk the length of the hallway three times during the day
- Be out of bed, on and off, for at least eight hours during the day
- Tell my nurse if my pain reaches 4/10 on the pain scale
- Get up and walk to the bathroom to urinate (I will not use the bedpan or urinal)
- Continue eating solid foods
- Continue to drink protein drinks
- Continue to drink liquids
- Chew gum for 30 minutes, three times today
- Review the written discharge instructions with my nurse
- Go home before lunch
- Leave the hospital with a prescription for pain medication and a follow up appointment



Quality Dashboard

Marietta Memorial HospitalQual

Quality Dashboard

RAS - Enhanced Recovery After Surgery

FY 2017

INDICATOR	BASELINE	GOAL	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	TOTAL
Colon Surgeries (Elective only)	131		10	16	12	13	17								
Average Length of Stay	6.56		7.10												
open	6.80		4.90	7	7	5									
laparoscopic	5.70			2.5	3	12									
robotic	4.40	3-3.9	5.20	2.5	3	3.7									
Readmission rate	22%	<22%	0%				32%								
Surgical Site Infections (Colon SSI NHSN SIR Rate)	4.31		3.22	0	0	0	0								
NRC picker (Overall facility rating Div F)	26th	90th	33rd				33rd								



Sample ERAS Dashboard

Memorial Health System

ERAS Dashboard

FY 2017

FY'17 (Oct'16- Sep'17)	Pain Medication			VTE Prophylaxis			Antibiotics Given			Nausea/Vomiting			Ambulation			Education - Office		
	Total # Patients	# Receiving Treatment	% Given Meds	Total # Patients	# Receiving Treatment	% Receiving Treatment	# Total patients	# Receiving Treatment	% Given Antibiotics	# Total patients	# Receiving Treatment	% Given Meds	# Total patients	# Receiving Treatment	% Ambulated	# Total patients	# Receiving Education	% Educated
Oct	16	7	44%	16	15	94%	16	16	100%	16	3	19%	16	16	100%	16	9	56%
Nov	12	10	83%	12	11	92%	12	12	100%	12	6	50%	12	12	100%	12	8	67%
Dec	13	11	85%	13	13	100%	13	13	100%	13	6	46%	13	10	77%	13	9	69%
Jan	17	13	76%	17	17	100%	17	17	100%	17	12	71%	17	14	82%	17	11	65%
Feb	0	0		0	0		0	0		0	0		0	0		0	0	
Mar	0	0		0	0		0	0		0	0		0	0		0	0	
Apr																		
May																		
Jun																		
Jul																		
Aug																		
Sep																		
YTD Total	58	41	71%	58	56	97%	58	58	100%	58	27	47%	58	52	90%	58	37	64%



Questions?

