

# ERAS—Launching and monitoring a program

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# Disclosure

- Speakers bureau for 3M
- Passionate about ERAS

# Enhanced Recovery

## Active Patient Involvement

<i>Pre-operative</i>	<i>Intra-operative</i>	<i>Post-operative</i>
•Pre-admission education	•Active warming	•Early oral nutrition
•Early discharge planning	•Opioid-sparing technique	•Early ambulation
•Reduced fasting duration	•Surgical techniques	•Early catheter removal
•Carbohydrate loading	•Avoidance of prophylactic NG tubes & drains	•Use of chewing gum
•No/selective bowel prep		•Defined discharge criteria
•Venous thromboembolism prophylaxis	•Pain & nausea management	
•Antibiotic prophylaxis	•Goal directed <u>peri</u> -operative fluid management	
•Pre-warming		

**Audit of compliance & outcomes**

**Whole Team Involvement**



# Measurements

- Outcome measures
  - LOS
  - Morbidity, mortality—30 days, 90 days, time to neoadjuvant Rx
  - Patient reported outcomes (PROMs & PREMs)
- Process Measures
  - Compliance/adherence with the pre-operative, intraoperative and postoperative components of the pathway
  - Pre-operative Hb and iron deficiency anemia\*
  - Pre op HbA1c level and perioperative glycemic control\*
- Balancing Measures
  - Time to attend multidisciplinary meeting
  - Time to educate staff and patients
  - Costs—GDFT monitors, CHO drinks, data collection
  - Readmission rates

## 12 Key ERAS Components

### Pre-operative

- Pre-operative counselling
- Pre-operative anesthesia consultation
- Carbohydrate loading AM of surgery

### Intra-operative

- Normothermia
- Timely antibiotics
- Use of multimodal analgesia
- Use of adequate PONV prophylaxis
- Use of goal directed fluid therapy with a monitor

### Post-operative

- Full fluids started by POD 0
- Solids started by POD 2
- Mobilization once by POD 0
- Mobilization twice by POD 1

○ iERAS, NSQIP ERIN\*\*

○ Enhanced Recovery Canada metrics

○ BC enhanced Recovery—excel spreadsheet\*\*

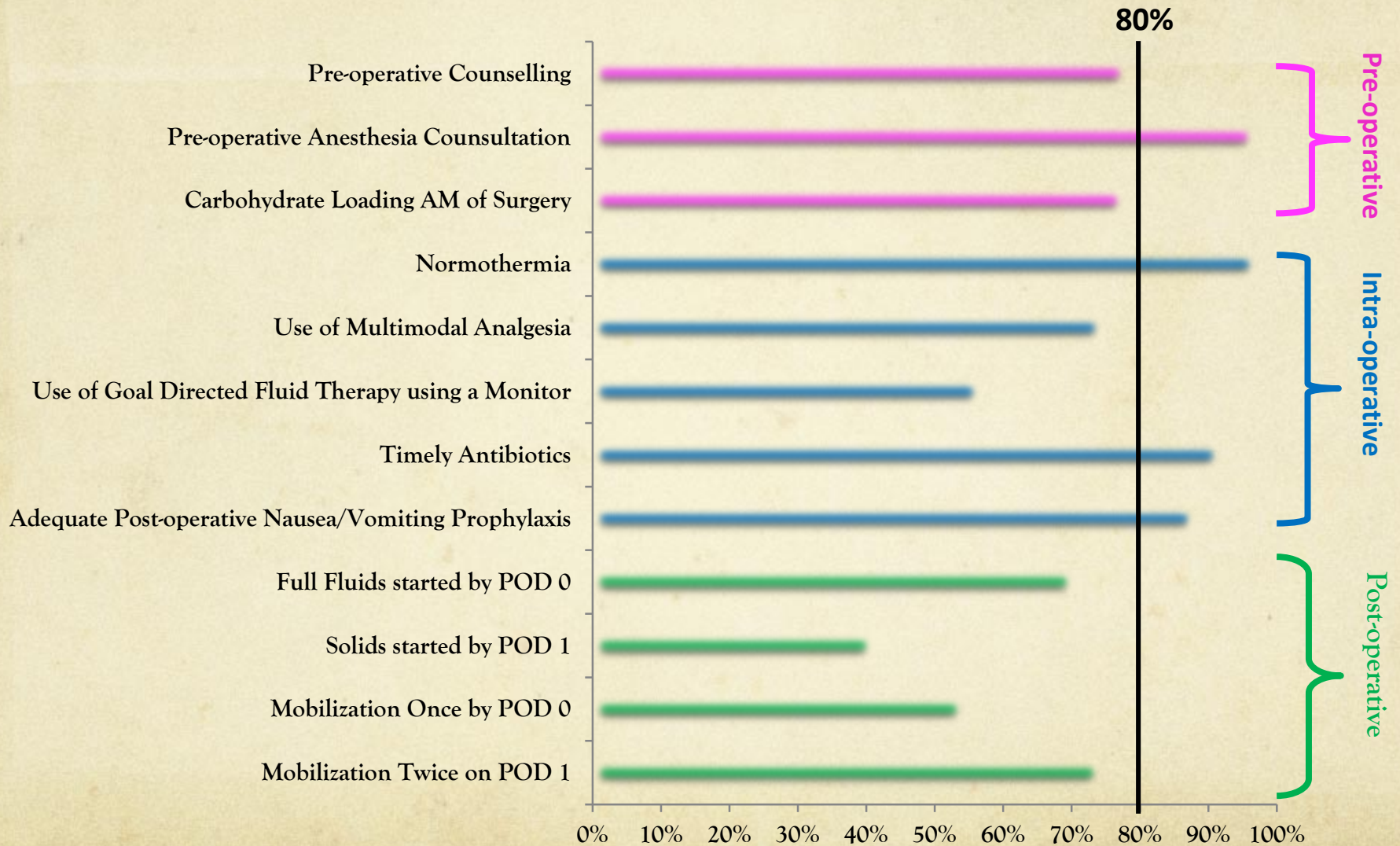
○ <https://enhancedrecoverybc.ca/data-collection-reporting/>





# Results: Adherence to 12 Key ERAS Components

## Oct 2013-Dec 2016 (n=439)



# Results: Patient Outcomes

Colorectal Surgery	Pre ERAS n=99	Post ERAS n=497	<75% Adherence n=179	≥75 Adherence n=260
All complication	28.2%	15.3% 45.7% ↓ from Pre-ERAS	18.2%	12.8% 54.6% ↓ from Pre-ERAS
Pneumonia	5.1%	3.2%	5.9%	1.5% 70.5% ↓
Vent > 48 hrs	4.0%	2.5%	4.1%	0.8%
Intubation	5.1%	2.8%	5.0%	0.8%
Pooled SSI	20%	11.4% 43% ↓	14%	8.8% 56% ↓
Sup SSI	11.1%	7%	10.5%	4.2%

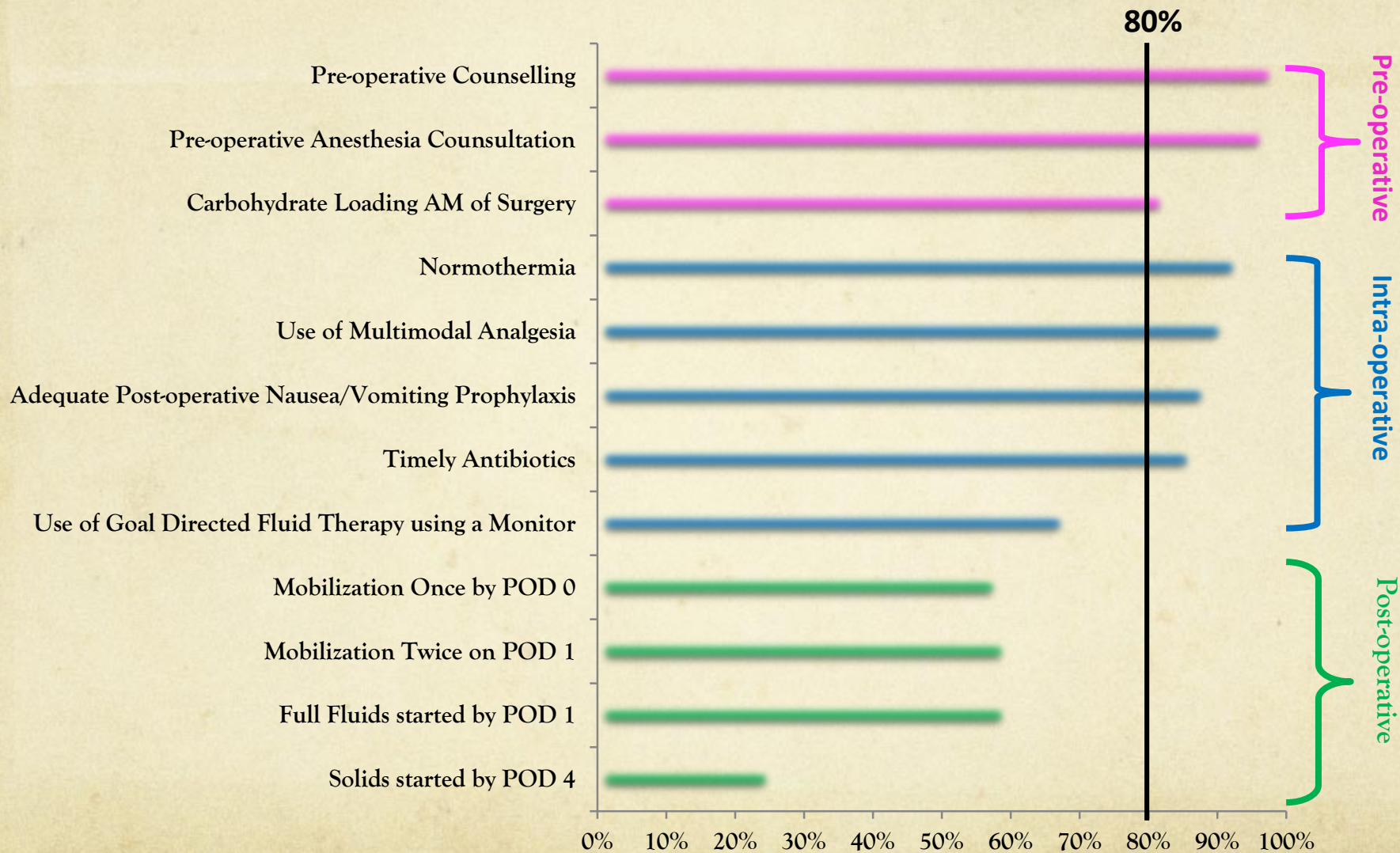
# Methods: 12 Key ERAS Components for Radical Cystectomy

	ERAS Components
Pre-operative	<ul style="list-style-type: none"><li>• Pre-operative counselling</li><li>• Pre-operative anesthesia consultation</li><li>• Carbohydrate loading AM of surgery</li></ul>
Intra-operative	<ul style="list-style-type: none"><li>• Normothermia</li><li>• Timely antibiotics</li><li>• Use of multimodal analgesia</li><li>• Use of adequate PONV prophylaxis</li><li>• Use of goal directed fluid therapy with a monitor</li></ul>
Post-operative	<ul style="list-style-type: none"><li>• Full fluids started by POD 1 **</li><li>• Solids started by POD 4**</li><li>• Mobilization once by POD 0</li><li>• Mobilization twice by POD 1</li></ul>



# Results: Adherence to 12 Key ERAS Components

## Oct 2014-Sep 2016 (n=152)



# Results: Patient Outcomes

Radical Cystectomy	Pre ERAS n=90	Post ERAS n=152	<75% Adherence n=73	≥75% Adherence n=79
NSQIP Overall Morbidity	31.1%	21.1% <b>32% ↓</b> from Pre ERAS	27.4%	15.2% <b>51% ↓</b> from Pre ERAS
Superficial SSI	12.2%	5.9%	9.6%	2.5%
Organ Space SSI	3.3%	5.3%	8.2%	2.5%
Urinary Tract Infection	10%	5.5%	5.1%	5.3%
Sepsis/Septic Shock	14.4%	6.6%	9.6%	3.8%
Transfusions within 72 hr of OR start time	43.3%	25.7%	27.4%	24.1%
Ileus	10%	10.5%	13.7%	5.1%
Readmission	16.7%	13.2%	13.7%	12.7%
Mean LOS (SD)	10.0 (8.5)	9.5 (6.7)	11.1 (8.7)	7.9 (3.3)
Median LOS (IQR)	8 (7-9)	7 (6-10)	8 (7-12)	7 (6-8)



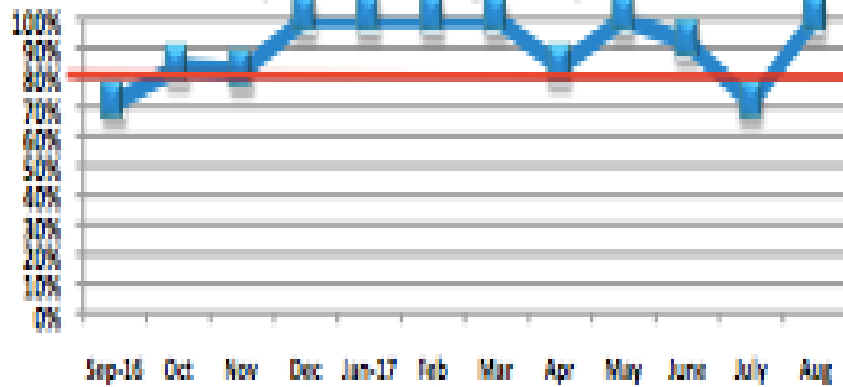
# Lessons Learnt—Keys to success

- Involve key stakeholders at the planning phase to facilitate commitment, engagement and ownership
- Have clear and robust definition of the ERAS components and outcome measures
- Conduct real-time audits and share results with frontline team on a regular basis to foster engagement and seek feedback from the team—motivates changes and highlights problem areas
- Patient engagement in their own care and also in the co-creation of new resources
- It takes time to change culture so tenacity is vital.

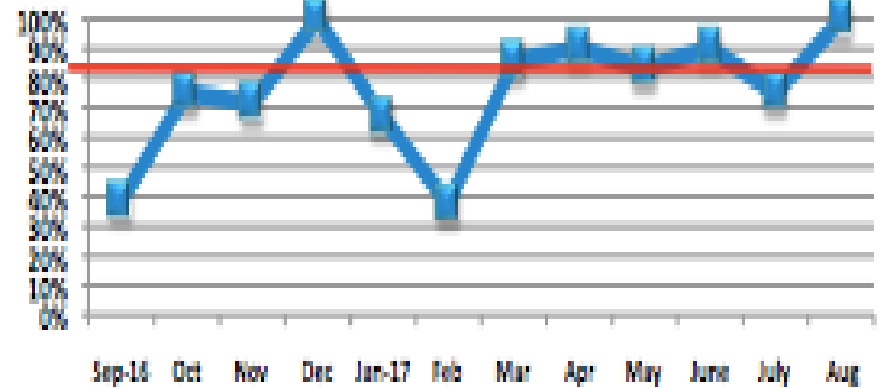




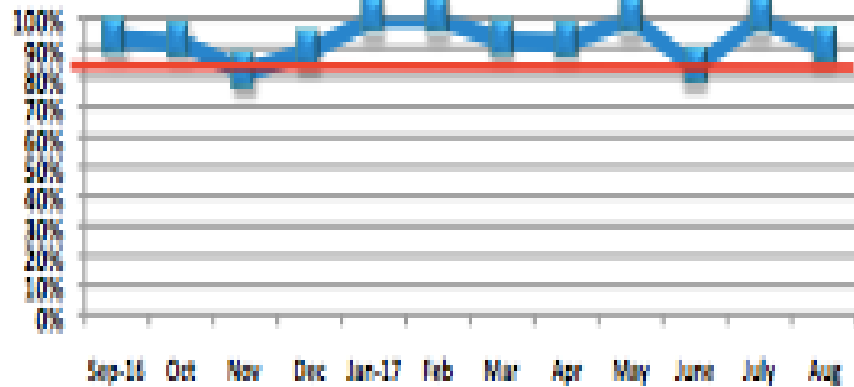
### Pre-op Counselling Completed



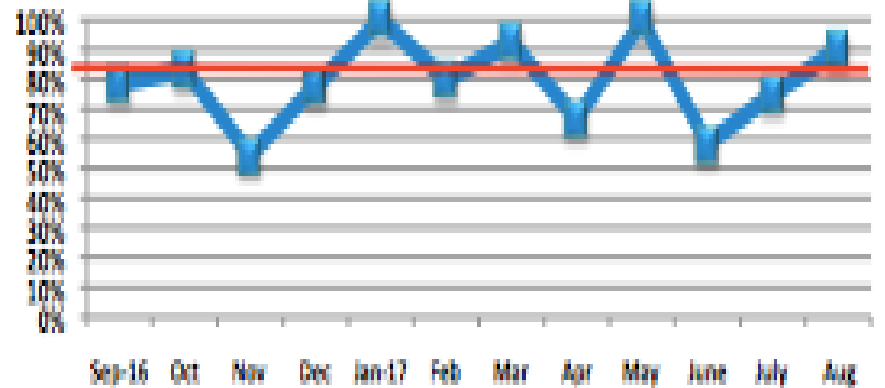
### MBP with Oral Abx Taken



### CHO Drink taken at HS



### CHO Drink taken at AM of OR



# “Dose” response relationship

