Increased survival might be an unexpected additional advantage of enhanced recovery after surgery programs

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Journal of Visceral Surgery (2018)

K. Slim
Service de chirurgie digestive et unité de chirurgie ambulatoire & the Francophone Group for Enhanced Recovery after Surgery (GRACE), 1, place Lucie-Aubrac, 63003 Clermont-Ferrand, France

"We are confronted with an innovative approach that is beneficial for health care teams (improvement of working conditions), for society (lower costs), and above all for patients (improvement of postoperative course and perhaps, also, improved survival in case of cancer). These benefits place ERP as one the best surgical innovations of the last decades, far in front of many technological innovations."

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VBM focuses on **patient value** – **increased life expectancy and increased HRQoL**

Bae JM. Epidemiol Health. (2015).

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JAMA Surgery | Review

'Enhanced Recovery After Surgery A Review

Olle Ljungqvist, MD, PhD; Michael Scott, MD; Kenneth C. Fearon, MD, PhD[1]

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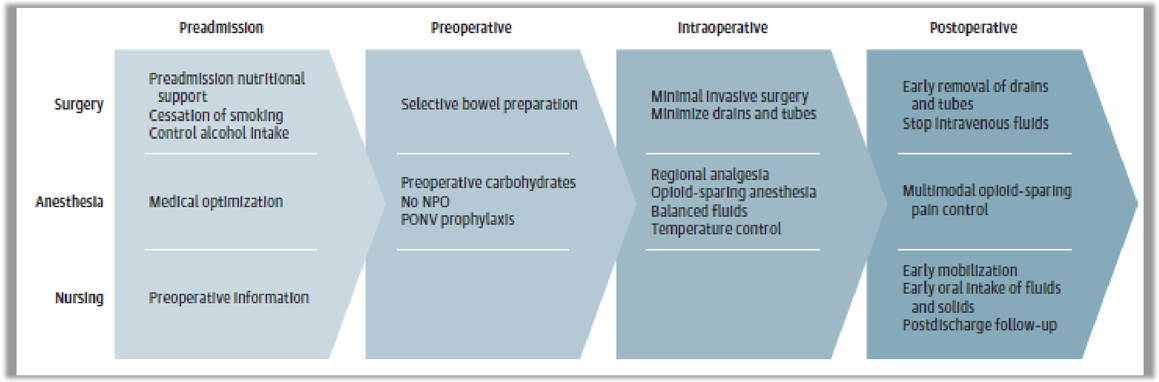
ERAS (Enhanced recovery after surgery) flowchart



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JAMA Surgery | Original Investigation

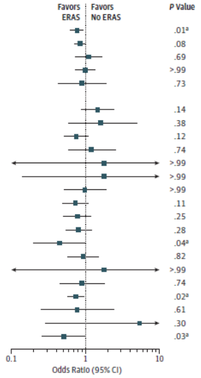
Association Between Use of Enhanced Recovery After Surgery Protocol and Postoperative Complications in Colorectal Surgery

The Postoperative Outcomes Within Enhanced Recovery After Surgery Protocol (POWER) Study

CONCLUSIONS AND RELEVANCE An increase in ERAS adherence appears to be associated with a decrease in postoperative complications.

Figure 2. Postoperative Outcomes

Patients With at Least 1	Total (N = 2084) Events, No. (%)	ERAS (n = 1304) Events, No. (%)	No ERAS (n = 780) Events, No. (%)	Odds Ratio (95% CI)	P Value
Moderate or severe complication	566 (27.16)	92 (7.06)	59 (7.56)	0.77 (0.63-0.94)	.01[a]
Complication	879 (42.18)	531 (40.72)	348 (44.62)	0.85 (0.71-1.02)	.08
Readmission	116 (5.57)	75 (5.75)	41 (5.26)	1.1 (0.73-1.67)	.69
Reintervention	205 (9.84)	128 (9.82)	77 (9.87)	0.99 (0.73-1.36)	>.99
Mortality rate	35 (1.68)	21 (1.61)	14 (1.79)	0.9 (0.43-1.92)	.73
Type of moderate or severe complications					
Acute kidney injury	85 (4.08)	60 (4.6)	25 (3.21)	1.46 (0.89-2.45)	.14
Acute respiratory distress	22 (1.06)	16 (1.23)	6 (0.77)	1.6 (0.59-5.02)	.38
Anastomotic breakdown	139 (6.67)	78 (5.98)	61 (7.82)	0.75 (0.52-1.08)	.12
Arrythmia	1 (0.05)	26 (1.99)	13 (1.67)	1.2 (0.59-2.56)	.74
Cardiopulmonary edema	4 (0.19)	1 (0.08)	0	1.80 (0.07-44.15)	>.99
Deep vein thrombosis	45 (2.16)	3 (0.23)	1 (0.13)	1.8 (0.14-94.38)	>.99
Gastrointestinal bleeding	112 (5.37)	28 (2.15)	17 (2.18)	0.98 (0.52-1.93)	>.99
Infection (surgical site, superficial)	102 (4.89)	62 (4.75)	50 (6.41)	0.73 (0.49-1.09)	.11
Infection (surgical site, deep)	118 (5.66)	58 (4.45)	44 (5.64)	0.78 (0.51-1.19)	.25
Infection (surgical site, organ space)	30 (1.44)	68 (5.21)	50 (6.41)	0.8 (0.54-1.2)	.28
Infection (uncertain source)	82 (3.93)	13 (1)	17 (2.18)	0.45 (0.2-0.99)	.04[a]
Infection (bloodstream)	1 (0.05)	50 (3.83)	32 (4.1)	0.93 (0.58-1.52)	.82
Myocardial infarction	40 (1.92)	1 (0.08)	0	1.80 (0.07-44.15)	>.99
Pneumonia	309 (14.83)	24 (1.84)	16 (2.05)	0.9 (0.45-1.82)	.74
Paralytic ileus	16 (0.77)	174 (13.34)	135 (17.31)	0.74 (0.57-0.95)	.02[a]
Postoperative hemorrhage	3 (0.14)	9 (0.69)	7 (0.9)	0.77 (0.25-2.44)	.61
Pulmonary embolism	41 (1.97)	3 (0.23)	0	5.40 (0.29-100.4)	.30
Urinary tract infection	Total (n = 2084)	19 (1.46)	22 (2.82)	0.51 (0.26-0.99)	.03[a]



Moderate or severe complications and type of complication in all included patients and in patients with and without the Enhanced Recovery After Surgery (ERAS) protocol.

[a] Statistically significant.

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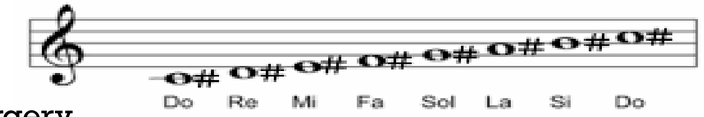
ERAS



Minor surgery

Major surgery

ERPs allow standardization of perioperative care, which minimizes variability and improves perioperative outcomes.

Most likely, the implementation of ERP principles have allowed migration of complex surgical procedures from inpatient setting to the outpatient setting (e.g. major joint arthroplasty, spine surgery, mastectomy, hysterectomy, prostatectomy, and thyroidectomy).

Joshi GP. et al. Anesth Analg (2019)

Why implement ERAS programs in minor surgery?

- Implementing the ERP principles in the ambulatory surgical practice should reduce postoperative complications and alleviate the concerns of moving invasive surgical procedures and complex patients (older and sicker) from the hospital to ambulatory facility.
- Ambulatory surgical facilities may not always have resources to manage complications after invasive surgical procedures in complex patients. In addition, there is a concern of delayed diagnosis and treatment of complications after discharge home on the day of surgery.
- Adverse outcomes such as unplanned hospital transfers from an ambulatory surgical facility, acute care or emergency department visits after discharge home, and hospital readmission may increase healthcare costs.

Joshi GP. Curr Opin Anaesthesiol. (2020)

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REVIEW

Table 3. Postoperative outcomes measures to assess recovery after ambulatory surgery

CURRENT OPINION

Morbidity
Pain, nausea, vomiting
Respiratory: inability to extubate, bronchospasm, laryngospasm, airway obstruction, respiratory depression, reintubation
Cardiac: arrhythmia, hypotension, hypertension, myocardial ischemia/infarction, heart failure, pulmonary edema
Neurological: cerebrovascular event (stroke/transient ischemic attack), delirium and cognitive dysfunction, residual neurological deficit from regional analgesia
Significant blood loss requiring blood transfusion
Surgical complications (e.g. wound-related, bleeding and hematoma, infection, and tissue ischemia)
Delayed recovery and discharge home
Unplanned hospital admission
Readmission after discharge home

Joshi GP. Curr Opin Anaesthesiol. (2020)

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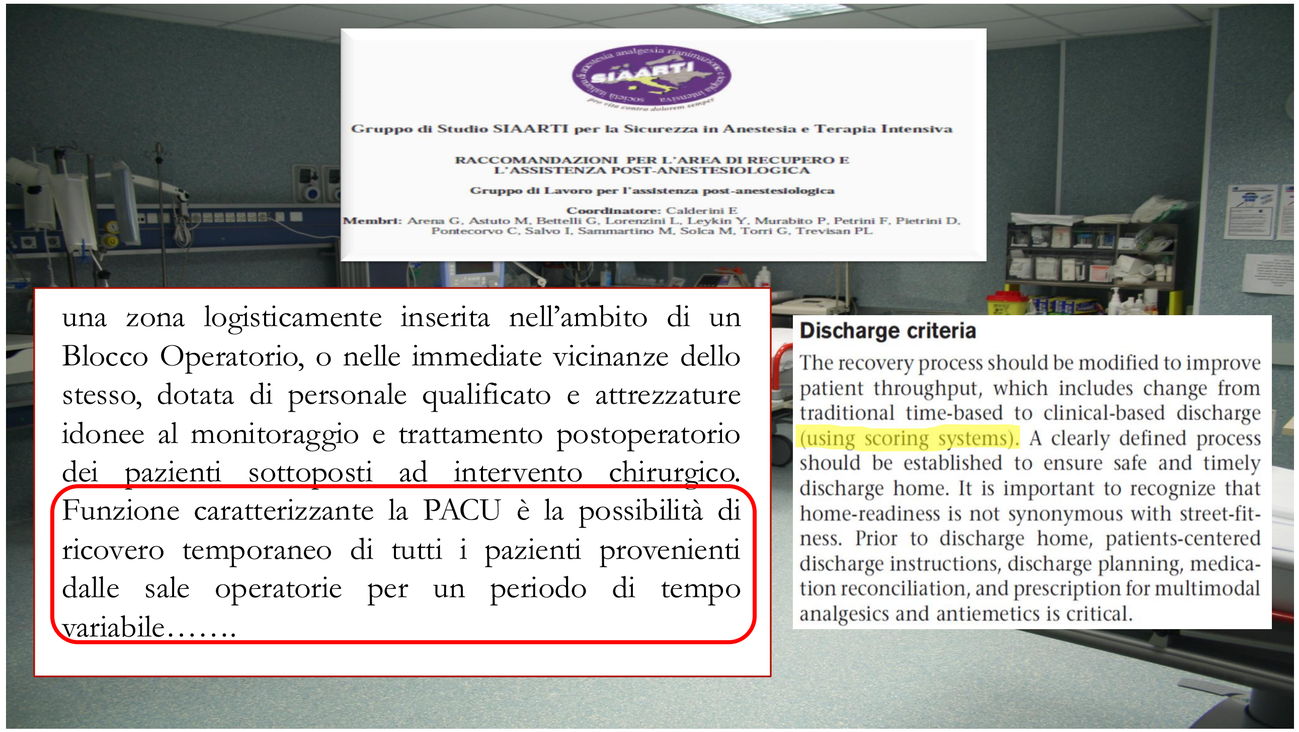

una zona logisticamente inserita nell'ambito di un Blocco Operatorio, o nelle immediate vicinanze dello stesso, dotata di personale qualificato e attrezzature idonee al monitoraggio e trattamento postoperatorio dei pazienti sottoposti ad intervento chirurgico. Funzione caratterizzante la PACU è la possibilità di ricovero temporaneo di tutti i pazienti provenienti dalle sale operatorie per un periodo di tempo variabile…….

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ERAS e chirurgia ciclo breve

Si deve fare!

- Ridurre eventi avversi ed al contempo garantire assistenza a pazienti più complessi
- Ridurre il numero di riammissioni e di trasferimenti verso ospedali più strutturati
- Garantire al paziente una miglior assistenza anche in termini di qualità percepita del percorso stesso

Grazie!!

e-mail: duccio.conti@uslcentro.toscana.it

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