Sunday, May 10, 2015 **08.30-10.00** **Session Type: ILC** **Duration of lectures: 15 min**

Timing - the key to emergency surgery

Enhanced recovery pathways:

Do they work in emergency surgery?

Carlos Mesquita – Coimbra – Portugal

• U C • TEMPO DE ENCONTRO(S)

725 anos

CENTRAL REGION: ~ 2.400.000 h

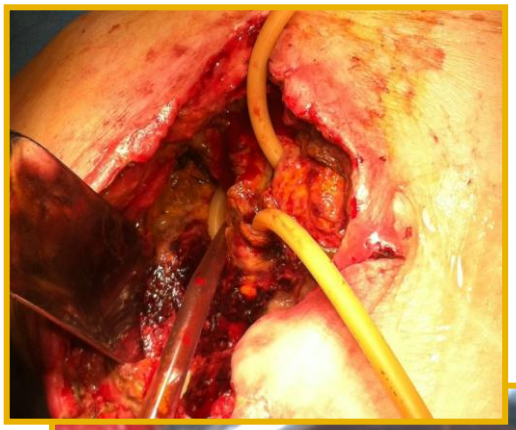
CHUC: ~ 2.500 b

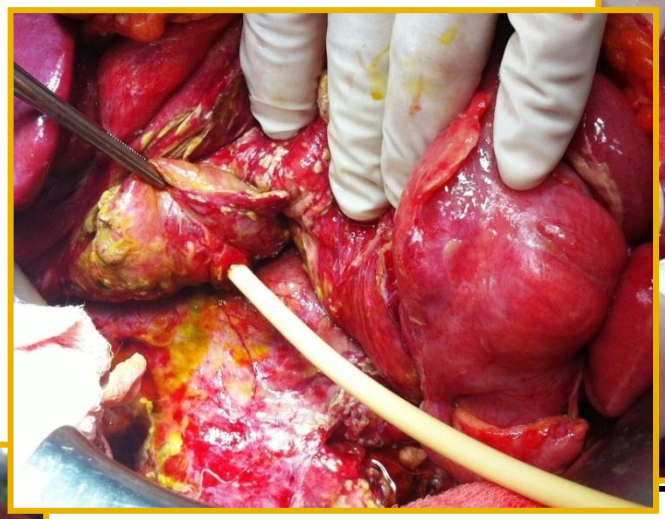
TRAUMA CENTER / EMERGENCY DEPARTMENT (ADULTS):

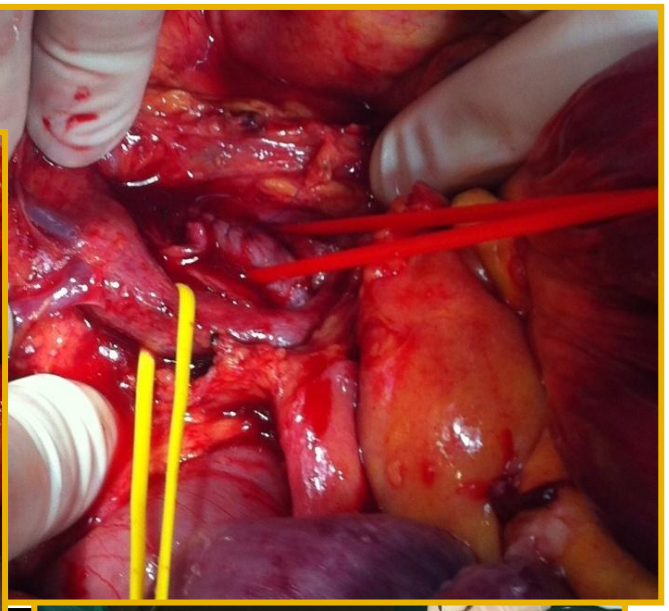
• Admissions / yr	~ 180.000	> 500 / d
• Inpatients / yr	> 18.000	> 50 / d
• Emergencies (Red color) / yr	> 1.800	> 5 / d
• Emergency surgery / yr	~ 4.500	~ 12 / d

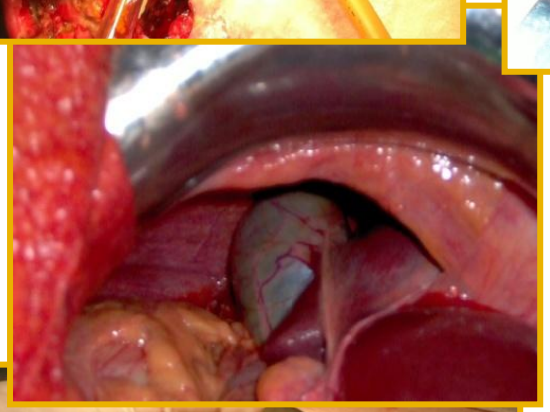
HOSPITAIS DA UNIVERSIDADE DE COIMBRA
SERVIÇO DE URGÊNCIA

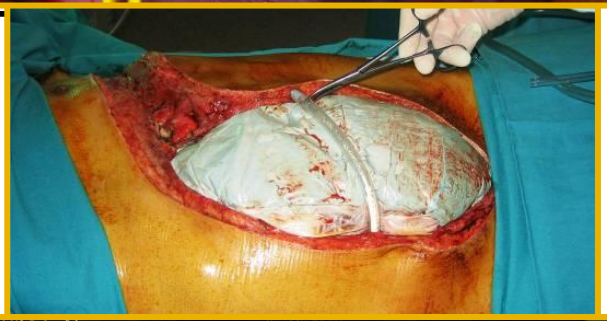
EMERGENCY SURGERY

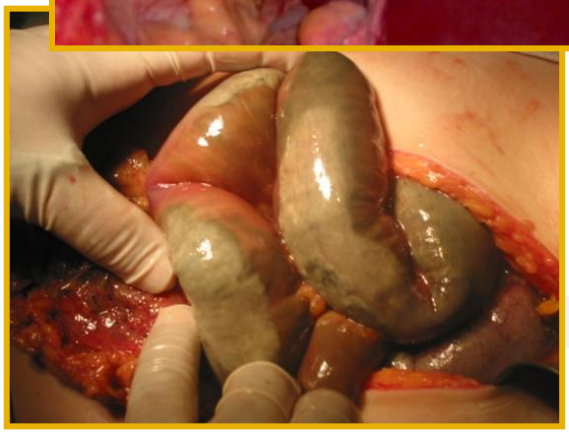


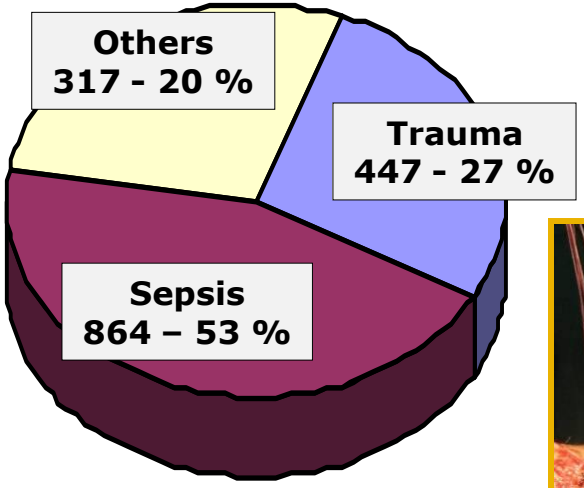












CM, n=1628, 33 years (1982 – 2014)

Enhanced recovery pathways:

Do they work in emergency surgery?

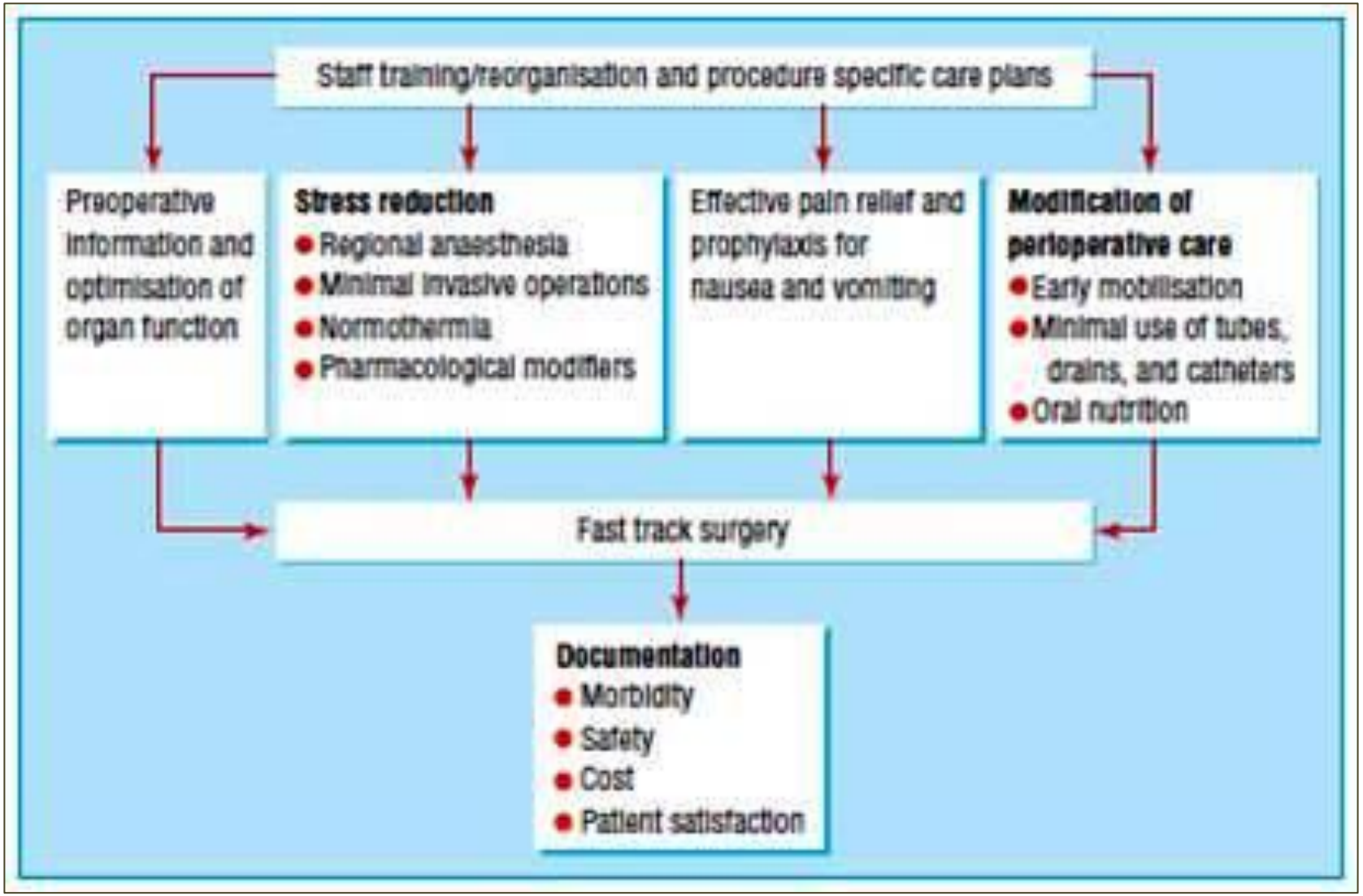
Ingraham AM, Cohen ME, Raval MV, Ko CY, Nathens AB.
Comparison of hospital performance in emergency versus elective general surgery operations at 198 hospitals.
J Am Coll Surg. 2011 Jan;212(1):20-28.

- **Surgical quality improvement** has focused on **elective general surgery (ELGS)** outcomes despite the substantial risk associated with **emergency general surgery (EMGS)** procedures
- Differences in the quality of care provided to EMGS versus ELGS patients are not well described.
- EMGS patients are at substantially greater risk than ELGS patients for adverse events
- **Processes of care that afford improved outcomes to EMGS patients need to be identified and disseminated**

Wilmore DW, Kehlet H.

Management of patients in fast track surgery.

BMJ. 2001 Feb 24;322(7284):473-6



Wilmore DW, Kehlet H.

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BMJ. 2001 Feb 24;322(7284):473-6

Interventions for major improvement in surgical outcome

1. **Staff training / reorganisation / procedure specific care plans**
   - **Preoperative information and optimisation of organ function**
   - **Stress reduction**
     - *Regional anaesthesia / Minimal invasive operations / Normothermia / Pharmacological modifiers*
   - **Effective pain relief and prophylaxis for nausea and vomiting**
   - **Modification of perioperative care**
     - *Early mobilization / Minimal use of tubes, drains, and catheters / Oral nutrition*
2. **Fast track surgery**
   - **Documentation**
     - *Morbidity / Safety / Cost / Patient satisfaction*

World Congress of Enhanced Recovery After Surgery and Perioperative Medicine

A COLLABORATION BETWEEN

ASER (America Society for Enhanced Recovery) - hosting
ERAS Society - Enhanced Recovery After Surgery Society
and **EBPOM** - Evidence Based PeriOperative Medicine

aser ERAS Society EBPOM

WASHINGTON DC – USA

May 9 – 12, 2015

SAVE THE DATE!

For more information, please contact the Congress Secretariat

ERAS Congress
c/o MCI Suisse SA
Rue de Lyon 75
1211 Geneva 13 - Switzerland
Tel.: +41 22 33 99 726
Fax: +41 22 33 99 601
E-mail: eras2015@mci-group.com

mci

NHS Institute for Innovation and Improvement.

Enhanced Recovery Programme.

2008.

- NHS Institute closed on 31 March 2013. Publicly available content at http://webarchive.nationalarchives.gov.uk/*/http://institute.nhs.uk

Enhanced Recovery Programme

What is it about?

- **Improving patient outcomes**
- **Speeding up patient's recovery after surgery**
  - Reduced length of stay
  - Reduced level of resources necessary
  - Increased numbers of patients being treated
- **Benefits to both patients and staff**
  - Patients as active participants
  - Better staffing environment
- **Evidence based care at the right time**

NHS Institute for Innovation and Improvement.

Enhanced Recovery Programme.

2008.

- NHS Institute closed on 31 March 2013. Publicly available content at http://webarchive.nationalarchives.gov.uk/*/http://institute.nhs.uk

Enhanced Recovery Programme

What is it about?

- Planning and preparation before admission
- Reducing the physical stress of the operation
- Structured approach to peri-operative management (pré-per-post), including pain relief
- Early mobilisation

- Staff learning and training
- Improved processes and room layout
- Procedure specific care plans

Allen D, Rixson L.
How has the impact of 'care pathway technologies' on service integration in stroke care been measured and what is the strength of the evidence to support their effectiveness in this respect?
Int J Evid Based Healthc. 2008 Mar;6(1):78-110.

Integrated care pathways (ICP)

- map out a patient's journey, providing **coordination**
- they aim to have: **'the right people, doing the right things, in the right order, at the right time, in the right place, with the right outcome'**
  - supporting the delivery of care across organisational boundaries,
  - providing greater consistency in practice,
  - improving service continuity and increasing collaboration
- there is **little evidence to support their use**, and the **need for systematic evaluations** in order to measure their effectiveness has been widely identified
- to the best of our knowledge, no such systematic review of the literature exists

Khan S, Gatt M, Horgan A, Anderson I, MacFie J.
Guidelines for implementation of enhanced recovery protocols.
Issues in professional practice. Association of Surgeons of Great Britain and Ireland. December 2009.

SUMMARY OF RECOMMENDATIONS

1. Pre-operative recommendations

- Pre-operative counselling and training
- Curtailed fast (6 hours to solids and 2 hours to clear liquids)
- Pre-operative carbohydrate loading
- Avoidance of mechanical bowel preparation
- Deep vein thrombosis prophylaxis using low molecular weight heparin.
- Single dose of prophylactic antibiotics

Khan S, Gatt M, Horgan A, Anderson I, MacFie J.
Guidelines for implementation of enhanced recovery protocols.
Issues in professional practice. Association of Surgeons of Great Britain and Ireland. December 2009.

SUMMARY OF RECOMMENDATIONS

2. Per-operative recommendations

- High (80%) inspired oxygen concentration in the per-operative period
- Prevention of hypothermia
- Goal directed intra-operative fluid therapy
- Preferable use of short and transverse incisions for open surgery
- Avoidance of post-operative drains and nasogastric tubes
- Short duration of epidural analgesia and local blocks

Khan S, Gatt M, Horgan A, Anderson I, MacFie J.
Guidelines for implementation of enhanced recovery protocols.
Issues in professional practice. Association of Surgeons of Great Britain and Ireland. December 2009.

SUMMARY OF RECOMMENDATIONS

3. Post-operative recommendations

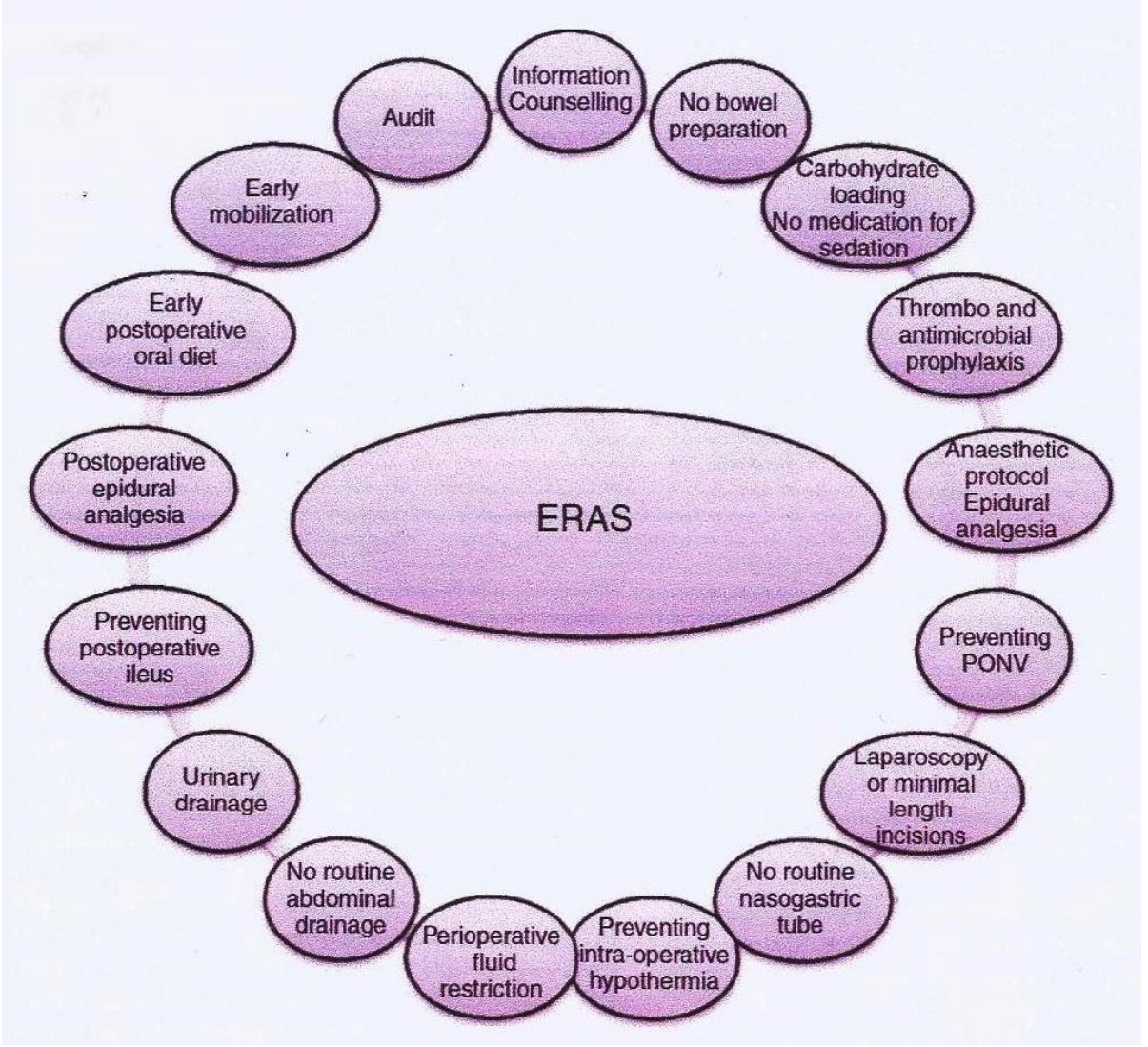
- Avoidance of opiates and the use of Paracetamol and NSAIDS
- Early commencement of post-operative diet
- Early and structured post-operative mobilisation
- Administration of restricted amounts of intravenous fluid
- Regular audit

Lassen K, Soop M, Nygren J, Cox PB, Hendry PO, Spies C, von Meyenfeldt MF, Fearon KC, Revhaug A, Norderval S, Ljungqvist O, Lobo DN, Dejong CH**; Enhanced Recovery After Surgery (ERAS) Group.**

Consensus review of optimal perioperative care in colorectal surgery: Enhanced Recovery After Surgery (ERAS) Group recommendations.

Arch Surg. 2009 Oct;144(10):961-9.

Item	Guideline
Preadmission information and counseling	Patients should receive oral and written preadmission information describing what will happen during hospitalization, what they should expect, and what their role is in the recovery process.
Preoperative bowel preparation	Patients undergoing elective colonic resection above the peritoneal reflection should not receive routine oral bowel preparation (grade A). Bowel preparation may be considered in patients scheduled for low rectal resection where a diverting stoma is planned.
Preoperative fasting and preoperative carbohydrate loading	The duration of preoperative fasting should be 2 hours for liquids and 6 hours for solids (grade A). Patients should receive carbohydrate loading preoperatively (grade A).
Preanesthetic medication	Patients should not receive medications known to cause long-term sedation, from midnight prior to surgery. Short-acting medications given to facilitate insertion of epidural catheter are acceptable (grade A).
Prophylaxis against thromboembolism	The preferred methods for prophylaxis in patients undergoing elective colorectal surgery are subcutaneous low-dose unfractionated heparin or subcutaneous low-molecular-weight heparin (grade A).
Antimicrobial prophylaxis	Patients undergoing colorectal resection should receive single-dose antibiotic prophylaxis against both anaerobes and aerobes about 1 hour before surgery (grade A).
Standard anesthetic protocol	Long-acting opioids should be avoided in patients undergoing anesthesia. Patients should receive a midthoracic epidural commenced preoperatively and containing local anesthetic in combination with a low-dose opioid (grade A).
Preventing and treating postoperative nausea and vomiting	Prevention of postoperative nausea and vomiting should be induced if ≥2 risk factors are present. Treatment should be immediate, with combinations of the drugs discussed.
Laparoscopy-assisted surgery	Laparoscopic colonic resection is recommended if the surgeon or department is proficient with the technique and prospectively validated outcomes show at least equivalence to open surgery (grade A).
Surgical incisions	A midline or transverse laparotomy incision of minimal length should be used for patients undergoing elective colorectal resection.
Nasogastric intubation	Nasogastric tubes should not be used routinely in the postoperative period (grade A). They should be inserted if ileus develops.
Preventing intraoperative hypothermia	Intraoperative maintenance of normothermia with an upper-body forced-air heating cover should be used routinely (grade A).
Perioperative fluid management	Intraoperative and postoperative fluid restriction in major colonic surgery with avoidance of hypovolemia is safe (grade A). When compared with excessive fluid regimens, normovolemic regimens in major colonic surgery lead to more favorable outcomes (grade A). Intraoperative goal-directed therapy (eg, with transesophageal Doppler monitoring) is superior to a non-protocol-based standard with respect to outcome (grade A) and should be considered on an individual basis.
Drainage of peritoneal cavity following colonic anastomosis	Drains are not indicated following routine colonic resection above the peritoneal reflection (grade A). Short-term (<24-hour) use of drains after low anterior resections may be advisable.
Urinary drainage	Suprapubic urinary drainage for pelvic surgery is recommended (grade A). For colonic surgery, both suprapubic and urethral techniques are appropriate.
Prevention of postoperative ileus	Midthoracic epidural analgesia and avoidance of fluid overload are recommended to prevent postoperative ileus (grade A). A laparoscopic approach is recommended if locally validated (grade A). A low-dose postoperative laxative such as magnesium oxide may also be considered.
Postoperative analgesia	Patients should receive continuous epidural midthoracic low-dose local anesthetic and opioid combinations (grade A) for approximately 48 hours following elective colonic surgery and approximately 96 hours following pelvic surgery. Acetaminophen (paracetamol) should be used as a baseline analgesic (4 g/d) throughout the postoperative course. For breakthrough pain, epidural boluses should be given while the epidural is running. Nonsteroidal anti-inflammatory drugs should be started at removal of the epidural.
Postoperative nutritional care	Patients should be encouraged to commence an oral diet at will after surgery (grade A). Oral nutritional supplements should be prescribed (approximately 200 mL, energy dense, 2-3 times daily) from the day of surgery until normal food intake is achieved. Continuation of oral nutritional supplements at home for several weeks is recommended for nutritionally depleted patients (grade A).
Early mobilization	Patients should be nursed in an environment that encourages independence and mobilization. A care plan that facilitates patients being out of bed for 2 hours on the day of surgery and 6 hours thereafter is recommended.
Audit	A systematic audit should be performed to allow direct comparison with other institutions.



Slim, K.
Fast-track surgery: the next revolution in surgical care following laparoscopy.
Colorectal Disease 2011; 13: 478–480.

- Fast-Track Surgery, also named **Enhanced Recovery After Surgery (ERAS)**, is **the most important innovation after the advent of laparoscopy** (in the 1990s) in the field of colorectal surgery as in other fields of surgery
- ERAS is defined as a **multimodal pathway aiming to reduce surgical stress** by using pain-free procedures with less organ dysfunction, less morbidity and better recovery
- The ultimate goal of ERAS is **stress-free, pain-free and risk free surgery**

Slim, K.
Fast-track surgery: the next revolution in surgical care following laparoscopy.
Colorectal Disease 2011; 13: 478–480.

- **Writing** a procedure is not enough to guarantee **implementation**
- The **time** from publication of a new concept (even with a high level of evidence) until it becomes routine is **too long**
- There is a real **gap** between evidence-based medicine and daily practice that should be overcome
- We have to **teach** individuals
  - how to organize a **multidisciplinary group** with committed heathcare professionals working together in the setting of a **single programme**
  - how to have the **hospital administration as a committed part** of this pathway

Grocott MP, Martin DS, Mythen MG
Enhanced recovery pathways as a way to reduce surgical morbidity.
Curr Opin Crit Care. 2012 Aug;18(4):385-92.

- **Effectiveness of enhanced recovery programmes** in improving outcome following major elective surgery
- The majority of this literature derives from the study of patients undergoing colorectal surgery, but increasingly **enhanced recovery is spreading to other surgical specialties**
- Combination of **reduced length of hospital stay** (a surrogate for morbidity) with no increase in readmissions suggests **reduced morbidity** with enhanced recovery
- Patients adhering to an enhanced recovery programme **return to normal function faster** than those following traditional care pathways

Gonenc M, Dural AC, Celik F, Akarsu C, Kocatas A, Kalayci MU, Dogan Y, Alis H.
Enhanced postoperative recovery pathways in emergency surgery: a randomised controlled clinical trial.
Am J Surg 2013

- The application of enhanced postoperative recovery pathways in **selected patients with perforated peptic ulcer disease who undergo laparoscopic Graham patch** repair seems feasible

Comments (adapted from Karem Slim)

- ***First randomized trial in this field***
- *It shows that* ***with an adapted protocol a formal ERAS protocol is feasible to reduce significantly hospital stay***

Lohsiriwat V.
Enhanced recovery after surgery *vs* conventional care in emergency colorectal surgery.
World J Gastroenterol. 2014; 20(38): 13950-13955

- Emergency surgery defined as an **unplanned operation performed within 24 h after patients were admitted or consulted** for acute colonic obstruction (duration of obstruction not longer than 1 wk)
- Compared with those having a conventional care pathway, **patients within an ERAS programme had a shorter length of hospital stay, faster bowel recovery and shorter time to start adjuvant therapy**.

In conclusion

- The feasibility and effectiveness of an ERAS programme in the setting of emergency surgery is unknown
- There is low level of evidence because of the lack of randomized or even non-randomized comparative trials
- Many components of ERAS cannot be applied
- ERAS programme seems feasible in selected patients

http://altec-lates.pt 10TH ANIVERSARY 2005 - 2015

8º EITCE – COIMBRA 2015

NOVEMBER 10 – 21

8º ENCONTRO INTERNACIONAL DE TRAUMA E CIRURGIA DE EMERGÊNCIA

8º ENCUENTRO INTERNACIONAL DE TRAUMA Y CIRUGIA DE EMERGENCIA

8 ° INCONTRO INTERNAZIONALE DI TRAUMA E CHIRURGIA DI EMERGENZA

8TH INTERNATIONAL MEETING OF TRAUMA AND EMERGENCY SURGERY

8. INTERNATIONALES TREFFEN VON TRAUMA UND NOTFALLCHIRURGIE

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