

Acute perioperative pain
management in the current
healthcare environment

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Disclosures:
Off label use of local
anesthetic additives

Acute perioperative pain management in the current healthcare environment

- Objectives
- Identify changes in health care environment impacting anesthesia delivery and perioperative economics (PSH, ERAS)
- Benefits of perioperative acute pain management
- Resources and implementation of a regional block and acute pain management service



No surprise: surgery tends to cause pain
Yet....there is little planning.

Perioperative surgical home

- PSH is a patient centered, innovative model of health care delivery during the entire patient surgical experience: from the time of the decision for surgery until the patient has returned to the care of his/her PCP
- PSH provides coordination of care throughout all clinical Microsystems of care and embeds the above strategic principles into its framework

The Perioperative Surgical Home (PSH): A Comprehensive Review of US and Non-US Studies Shows Predominantly Positive Quality and Cost Outcomes

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Policy Points:

- The perioperative surgical home (PSH) is complementary to the patient-centered medical home (PCMH) and defines methods for improving the patient experience and clinical outcomes, and controlling costs for the care of surgical patients.
- The PSH is a physician-led care delivery model that includes multi-specialty care teams and cost-efficient use of resources at all levels through a patient-centered, continuity of care delivery model with shared decision making.
- The PSH emphasizes “prehabilitation” of the patient before surgery, intraoperative optimization, improved return to function through follow-up, and effective transitions to home or post-acute care to reduce complications and readmissions.

Anaesth Crit Care Pain Med. 2016 Feb;35(1):59-66. doi: 10.1016/j.accpm.2015.08.001. Epub 2015 Nov 21.

The perioperative surgical home: An innovative, patient-centred and cost-effective perioperative care model.

Desebbe O¹, Lanz T², Kain Z³, Cannesson M⁴.

+ Author information

Abstract

Contrary to the intraoperative period, the current perioperative environment is known to be fragmented and expensive. One of the potential solutions to this problem is the newly proposed perioperative surgical home (PSH) model of care. The PSH is a patient-centred micro healthcare system, which begins at the time the decision for surgery is made, is continuous through the perioperative period and concludes 30 days after discharge from the hospital. The model is based on multidisciplinary involvement: coordination of care, consistent application of best evidence/best practice protocols, full transparency with continuous monitoring and reporting of safety, quality, and cost data to optimize and decrease variation in care practices. To reduce said variation in care, the entire continuum of the perioperative process must evolve into a unique care environment handled by one perioperative team and coordinated by a leader.

Anaesthesiologists are ideally positioned to lead this new model and thus significantly contribute to the highest standards in transitional medicine. The unique characteristics that place Anaesthesiologists in this framework include their systematic role in hospitals (as coordinators between patients/medical staff and institutions), the culture of safety and health care metrics innate to the specialty, and a significant role in the preoperative evaluation and counselling process, making them ideal leaders in perioperative medicine.

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KEYWORDS: Hospital care; Perioperative surgical home

PSH: individualized approach

- Clinical coordination before, during, after an acute surgical care episode
- Physician led, patient centric
- Adapted to facility, procedure, service line
- Integrated pain management
- Tailored to individual patient needs

ERAS: standard practice for PSH

- Standardization, decreases variability
- Decrease lengths of stay and costs
- Improves outcomes
- Pain: important driver in ERAS/PSH
- Facilitate data collection and interdisciplinary team building and communication
- Anesthesiologist leadership

ERAS: enhanced recovery after surgery

- Aim: improve patient outcomes and accelerate recovery after with benefits to: patients, staff, healthcare system, patient population treated with same available resources
- Maintain physiological function, and decrease surgical stress response

[Br J Surg.](#) 2014 Feb;101(3):172-88. doi: 10.1002/bjs.9394.

Systematic review and meta-analysis of enhanced recovery programmes in surgical patients.

[Nicholson A](#)¹, [Lowe MC](#), [Parker J](#), [Lewis SR](#), [Alderson P](#), [Smith AF](#).

Author information

Abstract

BACKGROUND: Enhanced recovery programmes (ERPs) have been developed over the past 10 years to improve patient outcomes and to accelerate recovery after surgery. The existing literature focuses on specific specialties, mainly colorectal surgery. The aim of this review was to investigate whether the effect of ERPs on patient outcomes varies across surgical specialties or with the design of individual programmes.

METHODS: MEDLINE, Embase, CINAHL and the Cochrane Central Register of Controlled Trials were searched from inception to January 2013 for randomized or quasi-randomized trials comparing ERPs with standard care in adult elective surgical patients.

RESULTS: Thirty-eight trials were included in the review, with a total of 5099 participants. Study design and quality was poor. Meta-analyses showed that ERPs reduced the primary length of stay (standardized mean difference -1.14 (95 per cent confidence interval -1.45 to -0.85)) and reduced the risk of all complications within 30 days (risk ratio (RR) 0.71, 95 per cent c.i. 0.60 to 0.86). There was no evidence of a reduction in mortality (RR 0.69, 95 per cent c.i. 0.34 to 1.39), major complications (RR 0.95, 0.69 to 1.31) or readmission rates (RR 0.96, 0.59 to 1.58). The impact of ERPs was similar across specialties and there was no consistent evidence that elements included within ERPs affected patient outcomes.

CONCLUSION: ERPs are effective in reducing length of hospital stay and overall complication rates across surgical specialties. It was not possible to identify individual components that improved outcome. Qualitative synthesis may be more appropriate to investigate the determinants of success.

Factors attenuating surgical stress response

- Subarachnoid block > epidural block
- Peripheral nerve blocks complete > partial
- Intrathecal morphine >> intravenous opiates
- What happens when neural blockade dissipate
- Continuation well into postoperative period

Traditional perioperative pain management

Decision to operate:
minimal pre procedure planning

Pre operative
Variable expectations, some planning for opiate tolerant patients

Intraoperative:
provider choice, no protocol

Postoperative: surgeon control, few protocols, no handoff

Post discharge: variable support, ER admissions for pain

Goal: integrated perioperative
continuum



PSH/ERAS

- Seamless integration, protocol driven, yet individual patient centric approach

Acute pain management guide

• ESTABLISH A MECHANISM FOR PREOPERATIVE ANALGESIA PLANNING

- Set expectations with the patient
- Adapt level of care: patient/procedure
- Determine: opiate use, addiction, chronic pain
- Determine expected course for postoperative pain
- Formulate a plan, and communicate it to the team

APMS guide

PREOPERATIVE PLANNING IS
CRITICAL

SEE PATIENT IN

PRE-ADMISSION CLINIC

- REVIEW SCHEDULE, PLAN IN ADVANCE
- Build a process/ flow adapted to institute
- Preoperative medication: presets, specific
- Epidural analgesia: place before OR
- Regional analgesia

APMS guide

- Anesthetic management- protocol driven; include specifics for type of surgery/patient: ketamine, lidocaine, adjuvants, local anesthetic, alpha agonists, etc
- Tailor anesthetic to expected postoperative course: target stage two for same day surgery

High risk patients

- Morbidly obese
- Chronic pain
- Addiction
- Sleep apnea
- Chronic systemic disease

Unmet needs in acute pain: you have to be there!

- 80% of life is just showing up
- Difficult if you're stuck in the OR (lounge)
- 24/7/365 coverage is a reality for acute care hospital based pain services
- Nurse staffed, physician and protocol driven
- There will be patients that don't meet pathway

Planning for Acute Pain Management

- Nociceptive
- Visceral
- Neuropathic
- Inflammatory
- Muscle spasm

Pain is not a
number

- Opiate is not best analgesic

Pain is multifactorial: treatment should rationally target all components. No single drug can adequately treat each of these...

ASA 2012 guidelines for perioperative pain management

- Whenever possible, a multimodal analgesic approach should be employed
- Around the clock acetaminophen and selective or non-selective NSAIDs should be used routinely when possible
- Opioids become the supplemental treatment

Practical approach to multimodal analgesia

- **SPECIAL CONSIDERATIONS:** opiate tolerant, abuse, procedures amenable to epidural or regional
- **PREADMISSION:**
- **PREOPERATIVE** (1-2 hours prior): celecoxib 200-400mg, acetaminophen 1000 mg, prefab alin 75-100 mg.
- **INTRAOPERATIVE:** i.v. ketamine, lidocaine infusion

Practical approach to multimodal POSTOPERATIVE analgesia TIVE:

- Celecoxib 200mg q 12 h
- Pregabalin 75-150 mg q 12 h
- Acetaminophen 1000 mg q 6 h
- Ketamine infusion 24-48 hours until oral opioid conversion (opiate tolerant)
- Supplement with opioids IR, or I.V. PCA
- Early mobilization and PT
- Early nutrition, transition to orals

PACU

- With a well executed pathway, patient should arrive to PACU relatively comfortable:
optimize epidural/regional catheter, treat side effects, non-opioids first, lowest effect opioid dose
- Establish comfort before discharge

Postoperative phase

- Is pain adequately controlled to permit early mobilization?
- Are there side effects limiting mobilization: motor block, nausea, pruritus, hemodynamics
- When can the patient tolerate oral intake?
- Constipation? Driver for increased length of stay...
- Proactive management: nurse driven at point of care
- Establish an early warning system when goals not met, prioritize rounds based on need.

Post discharge: routine care

- Continue non-opioids around the clock
- Opioids as adjuncts: avoid large quantities, avoid combination products
- Continuous delivery of local anesthetic when possible: liposomal or catheter and pump
- Can be easily managed with a protocol

Post discharge: complicated care

- Chronic pain/opiate use Avoid escalation beyond baseline, communicate with team, do opiate accounting
- Opioid abuse Non-opioids, no more than 5 days, transfer care to addiction management
- Require our care and team communication

Summary: structural and functional support

- Organizational support: hospital administrators, nursing therapists
- Physical space to allow for process and flow and follow up
- Staffing: physician available for rounds 365
- Nursing coverage around the clock
- Protocols and pathways
- Assessment and data collection tools for feedback and improvement initiatives

SUMMARY

- Pain: a major determinant for:
 - Patient satisfaction
 - Improved outcomes
 - reduced healthcare costs (LOS, ER, read mission)
- Process starts with design to operate and continues until patient is functional in their baseline environment
- PSH is a partnership between anesthesiologists, surgeons, nurses, therapists, etc
- Anesthesiologists are best positioned to lead these care pathways

“PACU is not the finish line.”

-Johnny Appleseed