Implementing Bedside Regional Anesthesia: Improving Clinical Effectiveness

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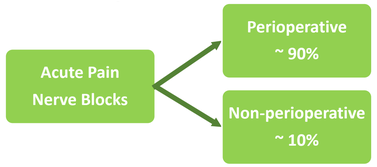
BACKGROUND

- The opioid epidemic poses challenges for inpatient pain management
- Nerve blocks reduce opioid usage in acute pain
  - Improved patient satisfaction
  - ↓↓ opioid side effects & addiction risk
- Blocks had to be done in post-anesthetic care unit (PACU) or Intensive Care Unit
  - Delays were due to lack of transport, PACU beds etc.



- Acute Pain Service (APS) unable to meet ↑↑ demand for blocks

OBJECTIVES

In October 2018, we started planning a 'Mobile Block Team' (MBT) with the goals of:

- Reducing delays to block non-perioperative patients
  Improving efficiency of the Acute Pain Service

METHODS

- In January 2019, we piloted the MBT, comprising of
  - Attending Acute Pain Anesthesiologist
  - Anesthesiology Resident
  - 2 Registered Nurses
- Safety protocols agreed with Nursing Leadership
- Equipment: 2 backpacks, portable ultrasound & monitor
- Success of service assessed in two phases
  - Phase I – Prospective case-control
  - Phase II – Retrospective analysis

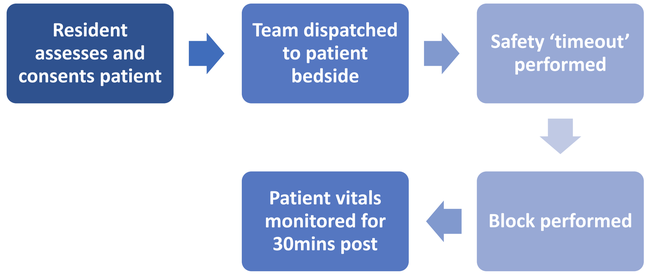


Figure. Process of block administration with the MBT

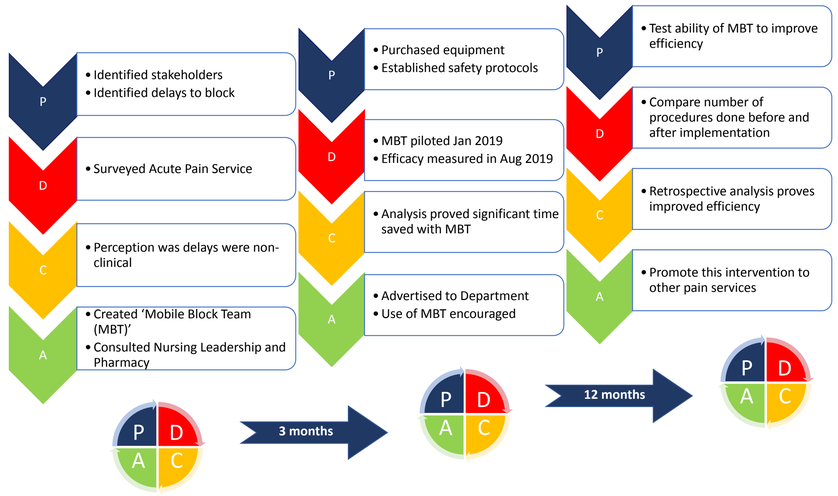


Figure. Plan-Do-Check-Act cycles of planning and development

METHODS (CONTINUED)

- Phase I – **Prospective Case-Control**
  - 12 non-perioperative patient encounters in August 2019
    - 6 Control : PACU blocks
    - 6 Case : Mobile blocks
  - Non-clinical time per case recorded
- Phase II – **Retrospective Analysis**
  - Number of cases from October 2018 to December 2019

BACKPACK 1
Pre-procedure Bedside Checklist
Consent Forms
Surgical caps and face masks
Emergency rescue medication • Atropine and Glycopyrrolate • Epinephrine • Phenylephrine • Ephedrine
Local Anesthetic • Lidocaine 1% • Ropivacaine 0.25/0.5% • Bupivacaine 0.25%/0.5%

BACKPACK 2
Sterile drapes & ultrasound probe cover
Sterile surgical gloves (assorted sizes)
Block needles and Catheters (assorted sizes) and needles for skin infiltration of local anesthetic
Dressing pack: • Clear adhesive dressings • Benzoin • Biopatch • Dermabond
Chlorhexidine or Betadine for skin preparation
Infusion lines

RESULTS

- Phase I
  - PACU block delays **triple** Mobile blocks
  - **61 minutes** vs **19.5 minutes** (p = 0.004)
- Phase II
  - Average increase of **217%** in non-perioperative blocks per month (6.7 to 20.9; p = 0.009)
  - Average increase of **155%** in total blocks per month (138.3 to 215; p = 0.004)

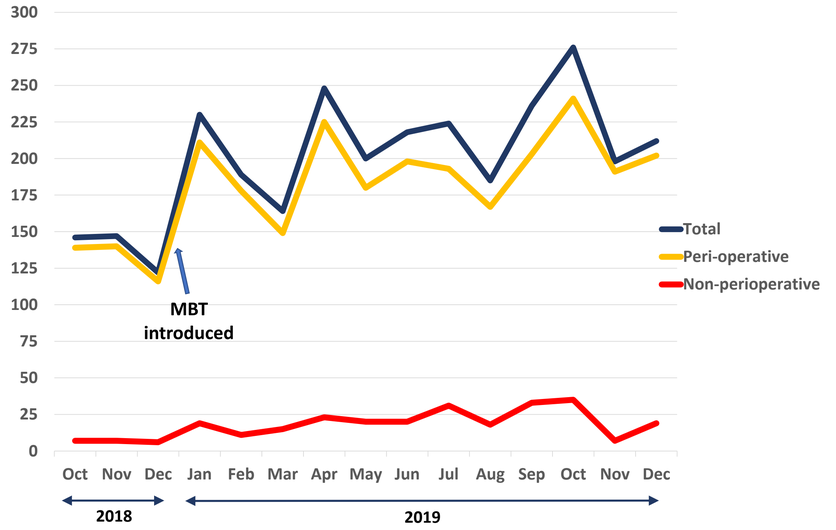


Figure. Number of regional blocks performed from Oct 2018 to Dec 2019

CONCLUSIONS

- Bedside blocks reduced waiting time for patients needing blocks
- Improved efficiency translated to more blocks done overall
- Successful program that is replicable in other institutions

ACKNOWLEDGEMENTS

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