Development of Guidelines for Early Implementation of Regional Anesthesia in United States Personnel with Peripheral Injuries

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Abstract

Problem Statement

- Peripheral extremity injuries present a significant problem for anesthesia providers.
- Addressing acute pain with opioids (traditionally) can cause:
  - Respiratory depression
  - Hemodynamic instability
  - Dependency

Introduction

- Peripheral extremity wounds have been recorded since BC 3200.
- Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) were 20-year war campaign.
- Improvement in military technology causes:
- Long-term opioid use causes:
- Regional anesthesia (RA) is a proven alternative to opioid exposure in combat.

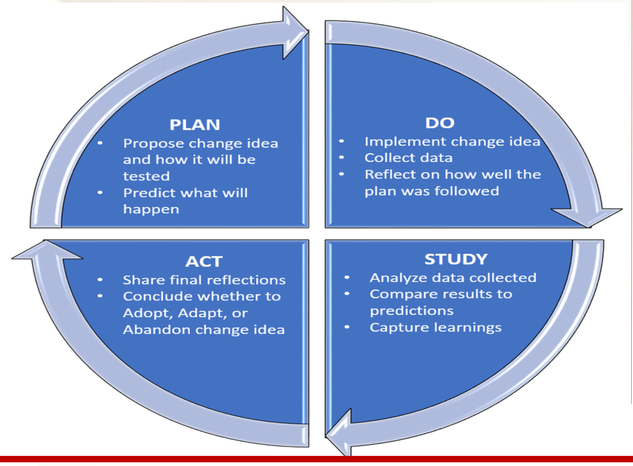
Background

- American Association for the Surgery of Trauma (n.d.) explains that trauma in the U.S. accounts for over 150,000 deaths and over a three million non-fatal injuries annually.
- A multimodal approach to traumas can decrease recovery time, opioid consumption, and healthcare cost.
- Implementing RA early can decrease opioid consumption & side effects, and ease of transportation.
- Ultrasound (US) has improved application of RA in the perioperative setting.

Significance to Nurse Anesthesia

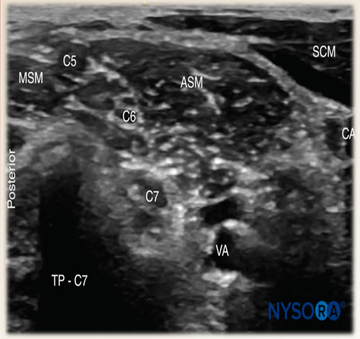
- RA is an impactful change anesthesia providers can utilize to improve long-term outcomes for injured service members.
- Military units stand to gain from this Evidence-Based Practice (EBP) project, also:
- Establishing EBP guidelines can significantly impact practice.
- This EBP project will not only improve quality of life for DoD service members but all physical trauma patients.

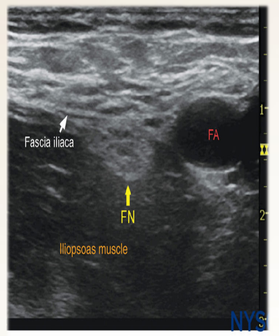
Plan-Do-Study-Act Model

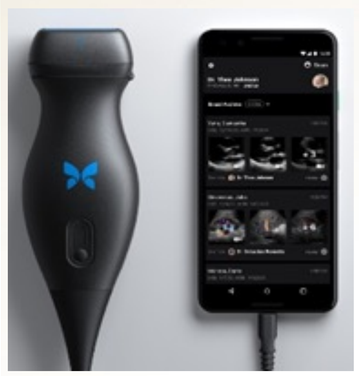


Project Guidelines

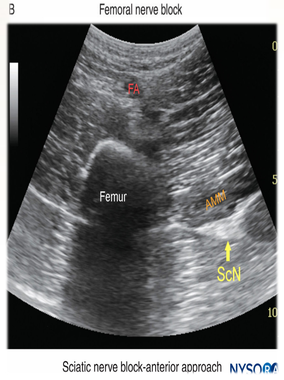
1. Notification of injury
2. Placement of RA within 2 hours
4. Record OR review narcotic use
5. Transportation personnel use







B Femoral nerve block



Sciatic nerve block-anterior approach NYSORA

Implementation

- The EBP project implements a two-week training course and a medical cart.
- Two-Week Training
- Medical Cart

PICO (T) Question

- In U.S. Personnel who sustain peripheral extremity injuries during combat (P), how would the development and implementation of early regional anesthesia evidenced-based practice guidelines (I) as compared to traditional practices (C) impact acute post-surgery opioid consumption and ease of transportation (O)?

Objectives

- EBP guidelines for early RA improve early and long-term recovery.
- Develop EBP guidelines for RA during combat operations.
- Develop a comprehensive plan to implement
- Develop a plan to monitor EBP guidelines.
- Develop a comprehensive plan to adjust EBP guidelines.

Timeline

- Project timeline is two years.
- Training phase will take one month
- PDSA cycles will be conducted in three-month cycles for two years.
- After-Action Reviews (AARs) will be conducted.

Budget

- The budget for this project is separated into two categories:
  - Training
  - Operational
- Total: $22,250
- Consolidating equipment from military units and schoolhouses will mitigate costs.

Outcome Analysis

- Analysis medical records and AARs every PDSA
- Medical charts flagged by Information Technology (IT)(S6).
- Medical charts will provide essential metrics
- AARs:
- Accurate and timely feedback
- Adjustments and sustainment of current practices

Conclusion

- Traditional approaches lead to more opioid consumption and medical personnel transporting injured service members.
- The DoD recognizes the need to find alternative pain management and better utilize scarce resources in the combat setting.
- RA can improve the quality of life for U.S. service members with peripheral extremity.

References

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