Identifying Gaps in Care in the Geriatric Trauma Patient with Rib Fractures

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DNP Project Defense
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Objectives for Final Defense

1. Review the clinical problem
2. Review the Organizational Assessment
3. Review the Evidence-Based Solutions
4. Propose Evidence-Based Change
Background: The Problem

- Increasing volume of geriatric trauma patients (GTPs)\(^1\)

- Thoracic injury has the second highest mortality rate for the trauma patient in the U.S.\(^2\)

- Rib fracture mortality rate of 20% or higher in GTPs\(^3\)
  - 2 - 5 times higher rate of mortality than do younger trauma patients\(^4\)

- GTPs with rib fractures have had worse outcomes than the younger trauma population\(^5\)
  - Longer hospital lengths of stays
  - Increased ventilator days
  - More frequency respiratory failure
  - Increased pneumonia diagnoses
Organizational Assessment
Project Setting and Resources

- Setting:
  - Large inner-city Trauma Center and Small Urban Clinic

- Resources:
  - Technology involving Electronic Health Record
  - Key stakeholders
    - ED, inpatient and outpatient staff
  - Materials
    - Program to develop dashboard
Burke-Litwin Model

Figure 1: The Burke-Litwin Model of Organizational Performance and Change

From: Burke and Litwin (1992: 528).
Literature Review
Literature Geriatric Trauma Protocol

• Five Articles from CINAHL Review
  – FRAIL questionnaire
  – Geriatric specific protocols
  – Improving nurses’ knowledge through NICHE
    (Nurses Improving Care for Healthsystem Elders)
Literature Rib Fracture Protocol

• Eight Articles from CINAHL Review
  – Monitor Pulmonary Status\textsuperscript{13}
  – Prompt Initiation of Analgesia for Pain (multimodal)\textsuperscript{5}
    • Early Identification of Respiratory Decline
    • Surgical Intervention when indicated
  – Documentation Reminders\textsuperscript{14}
  – Patient Education\textsuperscript{12}
Literature: Trauma Clinic Follow-up

• Six Articles from CINAHL Review
  – Demographics affect follow up\textsuperscript{15,16}
    • Aged 35 years and older
    • Caucasian race
    • Insured by Medicare/Medicaid
    • Post-blunt trauma
    • Discharge to Rehab
    • Lengthy hospital stays
  – Poor Documentation\textsuperscript{17}
# Literature Findings

## Process Outcomes
- Improved Incentive Spirometer Documentation by Nursing\(^{14, 21}\)
- Improved discharge documentation \(^{15, 16}\)
- Standardized Care \(^{9, 10, 11}\)
- Improved knowledge about geriatric trauma care for residents and nursing \(^{12}\)

## Patient Outcomes
- Decreased Hospital Length of Stay\(^{14, 22}\)
- Reduced Narcotic use\(^{13}\)
- Decreased Mortality\(^{5}\)
- Decreased ICU length of stay\(^{5}\)
- Decreased Pneumonia rates\(^{5}\)
- Decreased Respiratory Distress Syndrome\(^{5}\)
- Improved Trauma Clinic Follow-up \(^{13, 15, 17, 23}\)
Disablement Process Framework

Main Pathway

PATHOLOGY
Diagnosis of disease, injury, congenital/developmental condition

IMPAIRMENT
Dysfunctions and structural abnormalities in specific body systems: musculoskeletal, cardiovascular, neurological, etc.

FUNCTIONAL LIMITATIONS
Restrictions in basic physical and mental actions: ambulate, reach, stoop, climb stairs, speak, see standard print, etc.

DISABILITY
Difficulty doing activities of daily life: job, household management, personal care, hobbies, active recreation, socializing, run errands, etc.

RISK FACTORS
Predisposing characteristics: demographic, social, lifestyle, behavioral, psychological

INTRAINDIVIDUAL FACTORS
Overt changes in lifestyle, activity level, and behavior as a reaction to disease diagnoses; psychosocial attributes and coping mechanisms including positive affect, emotional vigor, prayer, locus of control, cognitive adaptation to one’s situation, having a confidant, peer support groups, etc.

EXTRAINDIVIDUAL FACTORS
Medical care and rehabilitation, medicine, external support and assistance, physical and social environments, etc.
Project Design

• IHI Model for Improvement\textsuperscript{18}
  – Form the Team
    • Key stakeholders: TMD, CNS, ED and inpatient managers, nurses, trauma physicians and residents, respiratory therapist
  – Setting Aims
    • Focus on GTP with rib fractures and analyze 12 months of data with focus on process and outcome measures
  – Establishing Measures
    • Define the quantitative measures
  – Selecting Changes
    • Analyze the data to determine recommendations for evidence based change
  – Testing Changes
    • PDSA
Project Type and Purpose

• Quality Improvement Project
  – Determined to be quality by IRB from organization

• Purpose:
  – Gap analysis
  – Recommend evidence based initiatives for practice based on gap analysis
    • Improve process outcomes
    • Improve patient outcomes
Clinical Question

• Are there gaps in care for the GTP with rib fractures, compared to evidence based practice, that can be changed to improve patient outcomes?
Participants

– Subjects:
  • Geriatric trauma patients aged 65 years and older with ISOLATED rib fractures

– Staff/Key stakeholder support:
  • Project mentor (TMD)
  • Trauma database coordinator
  • Clinical Nurse Specialists
  • Trauma physicians and residents
  • Nurses
  • Respiratory therapist
  • ED and inpatient managers
Measurement: Sources of Data

• Data sources
  – Electronic Health Record
  – Trauma Database

• Observation of Staff

• Display Data
  – Dashboard
Project Objectives and Strategies

• Identified best practices through literature review
• Collected baseline data for specific process and outcomes measures:
  – ED
  – Inpatient setting
  – Trauma Services/Outpatient setting
Project Objectives and Strategies Continued

• Analyzed the baseline data and identify measures that need improvement
• Performed cost benefit analysis
• Presented data in a dashboard format to each department leader by February 1, 2019
• Created a sustainability plan for data abstraction and analysis by February 1, 2019
• Provided a recommended evidenced based improvement plan to each department based on the gap analysis findings
Project Evaluation Plan

• Distributed dashboard to key areas
  – monthly
  – Plan to transition to quarterly

• Identified key measure outliers for each department

• Recommended evidence based practice change
Sustainability

• Focused on Outcomes that are valuable and important to each department

• Decreased manual labor to obtain data measures

• Provided standardized reports for dashboard
Implications for Practice

• Proper treatment plans for GTP with rib fractures is important for survival
• Evidence supports protocols focused on patient care improves outcomes
• Identifying the gaps in care for GTP with rib fractures will allow each department to focus on evidence-based change
Results

Number of Geriatric Trauma Patients with Isolated Rib Fractures Per Month

- Dec-17: 5
- Jan-18: 8
- Feb-18: 7
- Mar-18: 3
- Apr-18: 3
- May-18: 3
- Jun-18: 7
- Jul-18: 10
- Aug-18: 9
- Sep-18: 5
- Oct-18: 6
- Nov-18: 5
Results

ED Return Visits Within 30 Days

ED Return Visits With 31-90 Days
Results

Baseline IS Documentation in the ED

Inpatient Q4 Documentation of IS
Results

FRAIL Documentation Completed

Trauma Clinic Follow-up within 2 weeks
Results

GTP with Pneumonia

Unplanned ICU admits
Results

Hospital Readmission within 30 days

Hospital Readmission 31-90 days
Results

Mortality Rate for GTP with Rib Fractures
Key Findings

• Poor documentation of IS by nursing in the ED and inpatient setting

• FRAIL assessment was rarely utilized in ED for evaluation for ICU vs. general medical admission

• No standard process for follow-up plan
Evidence Based Recommendation

• Baseline IS documentation by the ED nurse
• Documentation of the IS by the inpatient nurse at least every 4 hours
• Utilization of the FRAIL assessment on admission
• Implementation of follow-up plan within 2 weeks of discharge whether to PCP or trauma clinic
## Cost vs Benefit

<table>
<thead>
<tr>
<th></th>
<th>Cost/hour</th>
<th>Time to Spend on Project</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td><strong>Trauma Database Coordinator</strong></td>
<td>$22.06/hour</td>
<td>2 hours/month for 4 months</td>
<td>$176.50</td>
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<td><strong>Hospital Information Technologist</strong></td>
<td>$30.67/hr</td>
<td>20 hours to build reports</td>
<td>$613.42</td>
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<td><strong>Clinical Nurse Specialists</strong></td>
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<td><strong>Student</strong></td>
<td>Time donated</td>
<td>Time donated</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>$1,138.14</td>
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<tr>
<td><strong>Cost of Hospital Readmission for Pneumonia</strong></td>
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<td>n/a</td>
<td>$23,400</td>
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<tr>
<td><strong>Cost of ED Return Visit</strong></td>
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<tr>
<td><strong>Total</strong></td>
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<td>$46,400</td>
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<tr>
<td><strong>Savings:</strong></td>
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<td>$45,261.86</td>
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Sustainability

• Improving Rib Fracture Care is a focus for the organization
  – Resident team developed a rib fracture protocol
• Choosing concise variables important to each department
• Majority of variables pulled from the trauma registry
• Variables unable to be pulled from the registry were strategically assigned to trauma staff during initial abstraction
DNP Essentials

- I- Scientific Underpinnings: health care phenomena
- II- Leadership: quality health care
- III- Evidence-Based Practice: literature
- IV- Information Technology: dashboards
- V- Health Care Policy: advocacy day
- VI- Collaboration: key stakeholders
- VII- Population Health: rib fracture care in the elderly
- VIII- Advanced Nursing Practice: excellence in care
Summary
Summary

- Providing evidence-based care is KEY to improving patient outcomes
- Tracking and trending of key measures helps to recognize areas in need of improvement
- Improving Geriatric Trauma care is a MUST
“The Fall that Saved my Life”
References


