**ABSTRACT**

**Purpose:** To improve patient outcomes and determine the effectiveness of early backboard removal by the Registered Nurses (RN) among adult, conscious patients who arrive in the Emergency Department (ED) with full spinal immobilization.

**Background:** A review of the literature revealed long wait times for low acuity trauma patients arriving at full spinal immobilization before a physician assessment and removal of the backboard. Complications of long wait times on backboards include skin breakdown, iatrogenic pain, respiratory compromise, increased patient satisfaction and mortality. Numerous hospitals successfully implemented protocols for RNs to initiate early backboard removal for those patients.

**Methods:** Following review of current practice, policy, and literature, nurse residents proposed a policy to ED leadership, staff and hospital administration to lead interdisciplinary group efforts for practice change.

**Results:** Hospital leadership approved the new policy for nurse driven change.

**Conclusion:** RN removing backboard with assistance of 3 staff members in ED

---

**OBJECTIVES**

1. Discuss evidence that nurse mediated early backboard removal in an emergency department setting improves patient satisfaction and comfort without compromising spinal integrity.

2. Relate the importance of early trauma assessment by the RN to patient safety and other nurse sensitive quality indicators including skin breakdown and iatrogenic pain.

3. Describe mechanisms impacting skin damage as a result of sustained pressure to the firm surface of backboards and nursing interventions which mitigate skin damage.

**INCORPORATION OF NEW POLICY**

The new policy included educating and supporting RNs to change practice. Proper removal of backboard by RN. Barriers identified for successful use of new policy include educating and supporting RNs to change practice.

- **RESULTS:**
  - Hospital leadership approved the new policy for nurse driven change.
  - RN removing backboard with assistance of 3 staff members in ED

---

**BACKGROUND**

**Themes from the literature**

- **Long wait times**
- **Complications from backboards**
  - Decreased patient satisfaction
  - Pressure-related skin breakdown
  - Acute pain
  - Anxiety
  - Compromised cognitive function
  - Aspiration

- **Financial implications related to hospital acquired skin breakdown and poor patient management**

- **Barriers identified for RN backboard removal practice change**
  - RNs believing not in their scope of practice
  - Workload
  - Education and support
  - Communication with healthcare teams

**National Recognition**

- Support by Emergency Nurses Association
  - Included in Trauma NURSE Core Curriculum (TNCC)

- Support by Consortium for Spinal Cord Medicine
  - To the Emergency Department, transfer patient with a potential spinal injury as soon as possible off the backboard onto a firm, padded surface while maintaining spinal alignment (2008)

**RESULTS**

**Inclusion Criteria:**
- Patients who arrive in full spinal immobilization
- Age group: 18 years old or less
- Four risk mechanism of injury (MOI) with low index of suspicion

**Exclusion Criteria:**
- Pediatric and elderly patients
- Nonmechanical and/or nonmechanism patients
- Glasgow Coma Scale less than 15
- High risk mechanism of injury (MOI)*
- Unusual or patients with known drug use
- Unconscious or high risk mechanism of injury (MOI)*
- Paralytic/loss of movement/sensation to any extremity
- Anxiety/insignificant shortness of breath or uncontrolled bleeding

**In-Hospital spine immobilization**
- High risk MOI include but not limited to:
  - Fall from height > 3 feet
  - Motorized vehicle accident
  - Bicycle accident
  - Motorized recreational vehicle or ejection speed > 60 mph
  - Fall from height > 3 feet
  - Intoxicated patients or patients with known drug use

**Outcomes:**
- Decreased patient satisfaction
- Pressure-related skin breakdown
- Acute pain
- Anxiety
- Compromised cognitive function
- Aspiration

**RESULTS**

**In-Hospital spine immobilization**
- High risk MOI include but not limited to:
  - Fall from height > 3 feet
  - Motorized vehicle accident
  - Bicycle accident
  - Motorized recreational vehicle or ejection speed > 60 mph
  - Fall from height > 3 feet
  - Intoxicated patients or patients with known drug use

**In-Hospital spine immobilization**

**METHODS**

- **Timeline**
  - February 24: Assign CBL to all ED nursing staff
  - March 3–21: March 3: CBL due
  - March 28: CBL due
  - March 31: Go live with policy and practice
  - June 1: Survey sent to ED staff

**NEXT STEPS**

- Overcoming barriers
  - Interdisciplinary and multi-media approach to education
  - Computer-based learning (CBL) presentation and test
  - Video demonstrating correct procedure for backboard removal by RN and 3 additional staff
  - Electronic medical record documentation education
  - ID badge cards with inclusion/exclusion criteria listed
- Evaluation
  - Follow up using education chain
  - Survey to evaluate comfort with practice change

**REFERENCES**


Kerriann Dooley, RN BSN and Julia Smith, RN BSN
University of Virginia Emergency Department, Charlottesville, VA

**CLINICAL QUESTION**

Among adult, conscious patients who arrive in the ED with full spinal immobilization, does early removal of backboards by the RN improve patient comfort and satisfaction without compromising spinal integrity?

**METHODS**

- **Review of Practice**
  - Nurse residents found no current policy for backboard removal in a level one trauma center
  - Patients wait for physician assessment prior to backboard removal
  - High acuity patients: MD and RN both receive emergency transport services (EMS) report and work together to get patient off backboard immediately
  - Low acuity patients: RN receives EMS report and triages patient; patient waits up to an hour for MD to assess and remove backboard. Patients often complain of pain and feeling anxious while lying on backboard.

- **Policy Proposal**
  - Nurse residents created a policy to detail appropriate backboard removal with appropriate staff
  - Policy was presented to ED nurse manager, nurse educator, nursing director, medical director, 35 staff members at 2 staff meetings (day and night shift), as well as hospital adult critical care administrator, and 80 nurse residents and nurse managers at evidence-based practice project presentation

**RESULTS**

**Effects September 2013 ED RNs can remove backboards for patients who arrive in full spinal immobilization as long as they meet certain inclusion criteria and do not meet any exclusion criteria.**

**REFERENCES**