

# **EMS SPINAL PRECAUTIONS / SPINAL MOTION RESTRICTION**

## **NJ EMS MICU ADVISORY COUNCIL**

### **POSITION STATEMENT AND GUIDELINES FOR DEVELOPMENT OF PROTOCOLS**

The NJ EMS Mobile Intensive Care Unit Advisory Council (MAC) recognizes the National Association of EMS Physicians (NAEMSP) and American College of Surgeons Committee on Trauma's (ACS-COT) position on *EMS Spinal Precautions and the Use of the Long Backboard*. Guidelines provided for the development of protocols for EMS Spinal Precautions / Spinal Motion Restriction reflects the current medical literature which shows:

- Unproven benefit of use of the long backboard for rigid spinal immobilization in trauma patients
- Potential for long backboard use to induce pain, patient agitation, respiratory compromise and the development of pressure ulcers due to decreased tissue perfusion at pressure points

It is recognized that while the long backboard may have a role in facilitating the safe extrication and movement of unconscious or impaired patients, the risks associated with its routine use for spinal immobilization may outweigh the benefits.

In agreement with the NAEMSP/ACS-COT position, the New Jersey EMS MICU Advisory Council encourages emergency medical services (EMS) systems to have written protocols that allow for the judicious use of spinal motion restriction protocols so that the potential benefits outweigh the risks. The guidelines for development of such protocols include:

- As the risks of the rigid backboard may outweigh its benefits, the use of the long backboard should be limited to the extrication and transfer of patients to the EMS stretcher but not for the transport to the hospital nor for inter-facility transport. If the patient is already found on a long backboard, an appropriate exam should be completed and the long backboard removed as long as it does not delay the transport of the patient to the receiving facility.
- Spinal motion restriction can be maintained by application of a rigid cervical collar and securing the patient firmly to the EMS stretcher in a supine position with the head elevated at approximately 20° to 30° position as applicable.
- Attention to spinal precautions among at-risk patients remains paramount regardless of the use of backboard including the application of a cervical collar, adequate securing to a stretcher, maintenance of in-line stabilization during any necessary movement/transfers and minimizing movement/transfers. This includes the use of the long-axis method as well as the use of slide boards with appropriate awareness and maintenance of spinal precautions during such movement/transfers.

- In circumstances in which the risk of unstable injury is low and the patient meets criteria for spinal motion restriction, the patient may not require movement/transfer using extrication devices including the long backboard and may be able to maneuver themselves onto the EMS stretcher. This may be most appropriate for those patients who are:
  - Found ambulatory at the scene
  - Do not have any other injury/conditions which may preclude the ability of the patient to safely maneuver themselves
  
- Appropriate patients who should undergo spinal motion restriction include those with:
  - Blunt trauma and altered level of consciousness
  - Spinal pain or tenderness
  - Neurologic complaint (e.g., numbness or motor weakness)
  - Anatomic deformity of the spine
  - High-energy mechanism of injury and any of the following:
    - Drug or alcohol intoxication
    - Inability to communicate
    - Distracting injury
  - 65 years of age or older
  
- Patients for whom spinal motion restriction is not necessary include those with all of the following:
  - Normal level of consciousness (Glasgow Coma Score [GCS] 15)
  - No spine tenderness or anatomic abnormality
  - No neurologic findings or complaints (e.g., numbness or motor weakness)
  - No distracting injury (e.g., long bone fractures, significant burns, etc.)
  - No drug or alcohol intoxication
  
- Reliable patients with penetrating trauma to the head, neck, or torso should not need spinal motion restriction provided:
  - demonstrate no evidence of spinal injury including absence of any neurological complaints
  - have no secondary mechanisms of injury that may increase the risk of blunt spinal trauma

Attention to spinal precautions among at-risk patients remains paramount regardless of the use of backboard including the application of a cervical collar, adequate securing to a stretcher, maintenance of in-line stabilization during any necessary movement/transfers and minimizing movement/transfers. Any patient for whom there is concern despite meeting criteria for which spinal motion restriction is not indicated can still have it applied depending on the clinical circumstances and judgment.

For those patients that have been immobilized on a backboard, the receiving facility should be advised of the duration that the patient has been immobilized. Patients should then be removed from backboards as soon as practical at the receiving facility to reduce patient exposure to the risks posed by the backboard.

Protocols to promote judicious use of long backboards and spinal motion restriction during out-of-hospital care should be developed by EMS organizations and include input from the stakeholders in the trauma/EMS system. Education of field EMS personnel should be provided including evaluation of the risk of spinal injury as well as options to provide spinal precautions.

References:

EMS Spinal Precautions and the Use of the Long Backboard. *Prehosp Emerg Care* 2013; 17:392-393

EMS Spinal Precautions and the Use of the Long Backboard – Resource Document to the Position Statement of the National Association of EMS Physicians and the American College of Surgeons Committee on Trauma. *Prehosp Emerg Care* 2014; 18:306-314

Prehospital Trauma Life Support, 7ed., Elsevier/Mosby-JEMS Publishing, 2011

International Trauma Life Support for Emergency Care Providers, 7ed., Campbell, DO, American College of Emergency Physicians, Pearson Publishing, 2012

CDC Trauma Triage Guidelines: <http://www.cdc.gov/fieldtriage/>