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POLICY MEMORANDUM 6611

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REVIEWED/APPROVED BY:

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SUBJECT: SPINAL MOTION RESTRICTION (SMR)

AUTHORITY: California Health & Safety Code Division 2.5, Sections 1797.170, 1797.171, 1797.172, 1797.204, 1797.220
California Code of Regulations Title 22, Division 9, Sections 100063, 100106, 100147

PURPOSE:

To establish criteria as to when Spinal Motion Restriction (SMR) should be performed to reduce unnecessary field immobilizations.

I. DEFINITIONS

A. Spinal Motion Restriction (SMR) – Term used to describe the procedure restrict the movement of the spine for patients with possible unstable spinal injuries with devices such as, but not limited to, full spine boards, cervical collars, head blocks, Kendrick Extrication Device (KED), or full body vacuum splints.

B. Spinal Injury Assessment – Spinal Injury Assessment will include the following elements:

1. Palpation of the entire vertebral column to assess for tenderness or
1. deformities;
2. Wrist and finger extension bilaterally to assess motor function;
3. Plantar flexion (both feet);
4. Dorsiflexion (both feet);
5. Assessing for any abnormal sensations to extremities or loss of sensation to extremities.

Spinal Injury Assessment will be performed on all trauma patients prior to applying/not applying SMR and be documented in the patient care report.

II. INDICATIONS/CONTRAINDICATIONS

A. SMR is indicated in pre-hospital trauma patients who have the potential for spinal injury and have at least one of the following criteria:

1. Altered Mental Status from baseline.
2. Evidence of intoxication.
3. A distracting injury.
4. Any neurological deficit (i.e. paralysis or numbness or tingling in extremities)
5. Midline Spinal pain or tenderness with palpation.

B. SMR is **NOT** indicated and should **NOT** be applied for patients of penetrating trauma to the head, neck or torso unless any of the following are present:

1. Any neurological deficit.
2. Priapism.
3. Neurogenic shock.
4. Visible deformity of the spine.
2. Significant secondary blunt MOI.

C. SMR may be omitted if all assessment criteria are assessed and are normal.

D. For patients experiencing localized cervical spine pain or tenderness **ONLY**, a cervical immobilization device may be used without immobilizing the rest of the spine.

III. SMR METHODS

A. If a patient experiences negative effects of the SMR methods used, alternative methods may be implemented. Alternate SMR methods may include, but not limited to the following:

1. Patient positioning (i.e. lateral, semi-fowlers, fowlers).
2. Pillows.
3. Vacuum splints or mattresses.
4. Car seats.
5. Kendrick Extrication Device (KED).
6. Backboards and head immobilizers.

IV. PROCEDURE

A. Provide manual stabilization restricting gross movement. Alert and cooperative patients may be allowed to limit motion, if appropriate with or without a cervical collar.

B. Apply cervical collar, if clinically indicated.

C. Extricate the patient limiting flexion, extension, rotation, and distraction of the spine.

D. If the decision to use SMR has been made, consider the following:

1. Keeping with the goals of restricting gross movement of the spine and preventing increased pain and discomfort, self-extrication by the patient is allowable.
2. Pull sheets, other flexible devices, scoops or scoop-like devices may be utilized. Hard backboards should have limited utilization.

E. Place the patient in the best position to protect the airway.

F. Regularly reassess motor and sensory function as indicated in the Spinal Injury Assessment.

V. SPECIAL CONDISERATIONS

A. Low risk factors where SMR may be omitted after a complete Spinal Injury Assessment is performed include:

1. Simple rear-end Motor Vehicle Collisions (MVC).
2. Patient ambulatory on scene at any time.
3. No neck pain on scene.
4. Absence of midline cervical tenderness.

B. High risk factors where SMR should be strongly considered include:

1. Patient age greater than 65 years old.
2. Meets Trauma Triage Criteria for mechanism of injury as outlined in Policy 6105.
3. Axial load to the head.
4. Numbness and/or tingling to the extremities.

C. Patients experiencing difficulty breathing in SMR have been found that respiratory function is limited by 17% with the greatest effect experienced by geriatric and pediatric patients restricted to a hard backboard. For patients experiencing difficulty breathing the head of the backboard may be raised slightly to accommodate relief of the respiratory complaint.

D. Pediatric patients in car seats will be immobilized as follows:

1. For rear facing car seats, the patient may be immobilized and extricated in the car seat. The patient may remain in the car seat if the immobilization is secure and as patient condition allows.
2. For front facing car seats with a high back, the patient may be immobilized and extricated in the car seat. Once removed from the vehicle, the patient should be placed in SMR.
3. For booster seats, the patient will be extricated and immobilized following standard SMR procedures.

If the decision is made to apply SMR to patient in a car seat, ensure that a proper Spinal Injury Assessment of the patient's posterior is performed.

E. Football helmets should not be removed; they should be immobilized in place. Be sure to pad around the patient's helmet, neck and shoulders to fill any gaps and maintain inline spinal motion restriction.

1. Football helmets should only be removed if the helmet is interfering with procedures used in securing and maintaining the airway.
2. All other types of helmets can be removed under this policy.

F. Pregnant patients in the third trimester should be transported in the left-lateral position to prevent supine hypotension.

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