SPINAL MOTION RESTRICTION (SMR)

1. INTRODUCTION: The term spinal motion restriction (SMR) better describes the procedure used to care for patients with possible unstable spinal injuries. SMR includes:
   ► Reduction of gross movement by patient
   ► Prevention of duplicating the damaging mechanism to spine
   ► Regular reassessment of motor/sensory function

2. PURPOSE: To decrease the risk of negative effects caused by traditional spinal immobilization while still providing appropriate care to patients with possible spinal injury by implementing alternative methods to achieve SMR

3. INDICATIONS: Any patient identified by Alameda County’s Spinal Injury Assessment to warrant spinal motion restriction. The spinal injury assessment should be performed prior to application of SMR.

4. PROCEDURE: If patient experiences negative effects of SMR methods used, alternative measures should be implemented.
   4.1 Methods/tools to achieve SMR that are allowable: (less invasive to more invasive) lateral, semi-fowler’s or fowler’s position with cervical collar only, soft collars, pillows, vacuum splint or mattress, children’s car seats, KED, backboards with adequate padding, head immobilizers and straps
   4.2 Provide manual stabilization restricting gross motion. Alert and cooperative patients may be allowed to self-limit motion if appropriate with or without cervical collar
   4.3 Apply cervical collar
   4.4 If needed, extricate patient limiting flexion, extension, rotation and distraction of spine
   4.5 Considerations for patient movement when decision to SMR has been made:
      ► Keeping with the goals of restricting gross movement of spine and preventing increased pain and discomfort, self-extrication by patient is allowable
      ► Pull sheets, other flexible devices, scoops and scoop-like devices can be employed if necessary. Hard backboards should only have limited utilization
   4.6 Apply adequate padding or vacuum mattress to prevent tissue ischemia and increase comfort
   4.7 Place patient in position best suited to protect airway
   4.8 Regularly reassess motor/sensory function (include finger abduction, wrist/finger extension, plantar/dorsal flexion and sharp/dull exam if possible)
   4.9 Consider the use of SpO₂ and EtCO₂ to monitor respiratory function

5. SPECIAL CONSIDERATIONS
   5.1 Patients with acute or chronic difficulty breathing: SMR has been found to limit respiratory function an average of 17% with the greatest effect experienced by geriatric and pediatric subjects restricted to a hard backboard.
      ► Use SMR with caution with patients presenting with dyspnea and position appropriately
   5.2 Pediatric patients:
      5.2.1 Consider use of padded pediatric motion restricting board
      5.2.2 Avoid methods that provoke increased spinal movement
      5.2.3 If choosing to apply SMR to patient in car seat, ensure that proper assessment of patient posterior is performed
   5.3 Combative patients: Avoid methods that provoke increased spinal movement and/or combativeness