

TITLE

SPINAL MOTION RESTRICTION

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Provincial: Emergency Departments and Urgent Care Centres

DOCUMENT

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NOTE: The first appearance of terms in bold in the body of this document (except titles) are defined terms – please refer to the Definitions section.

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OBJECTIVES

- To assist **health care professionals** when implementing specific diagnostics, therapeutics, and interventions for **patients**, prior to the initial Physician and/or Nurse Practitioner (NP) assessment and in accordance with the patient's continuum of care.
- This protocol is intended for those patients greater than or equal to 14 years of age who present to the Emergency Department (ED) / Urgent Care Centres (UCC) with an actual or suspected spinal injury that may require **spinal motion restriction (SMR)** following a traumatic event.

APPLICABILITY

Compliance with this document is required by all Alberta Health Services employees, members of the medical and midwifery staffs, students, volunteers, and other persons acting on behalf of Alberta Health Services (including contracted service providers as necessary).

ELEMENTS**1. Points of Emphasis**

- 1.1 Spinal motion restriction (SMR) procedures are used to care for patients with actual or suspected spinal injuries. The purpose is to:
 - a) Reduce gross movement by the patient; and
 - b) prevent additional damage/injury to the spine.

- 1.2 If patients with actual or suspected spinal injury present in a private vehicle: do not attempt to extricate unless vital signs are unstable. Follow site procedure or call EMS at 911.
- 1.3 UCC sites shall not accept EMS transports of trauma patients in SMR precautions (refer to AHS *Provincial Emergency Medical Services Urgent Care Centre Transport Criteria* Protocol).
- 1.4 If there is not a treatment space available: follow local site protocol.
- 1.5 For all patients in SMR the **health care provider** shall:
 - a) Locate the patient so they are easily visualized by a health care provider;
 - b) give the patient a call bell and instruct the patient to call if any nausea or vomiting occurs; and
 - c) ensure that suction is readily available.
- 1.6 Within the ED/UCC setting: patients shall not be placed on a long spine board. Long boards are for EMS extrication and transfer. Slider/transfer boards are used only to facilitate transfer to/from Diagnostic Imaging table or Inpatient bed.

2. Inclusion Criteria

- 2.1 Patients presenting with a history of trauma and any neck pain or cervical spine (c-spine) tenderness, with or without neurologic symptoms (such as peripheral tingling or paresthesia).
- 2.2 Also consider SMR in patients presenting with a mechanism of injury (MOI) based on a high index of suspicion. MOI's may include:
 - a) Fall from elevation greater than or equal to one (1) metre [three (3) feet] /5 stairs;
 - b) axial load to head, e.g., diving;
 - c) motor vehicle collision, including but not limited to:
 - (i) Rollover;
 - (ii) ejection of patient;
 - (iii) death of occupant in the same vehicle;
 - (iv) steering wheel deformity; and/or
 - (v) passenger compartment intrusion;
 - d) motorized recreational vehicles;

- e) bicycle struck or collision; or
- f) trauma patient greater than or equal to 65 years old.

3. Assessment

- 3.1 The health care professional shall perform a complete assessment, including full vital signs, oxygen saturation, Glasgow Coma Scale and a neurological assessment, including motor power and sensation assessment of all four (4) extremities (refer to AHS *Assessment and Reassessment of Patients* Guideline).
- 3.2 Immediately notify Physician / NP of any patient with abnormal neurological symptoms.

4. Application of Spinal Motion Restriction

- 4.1 The health care professional shall:
 - a) Stabilize the patient's head manually in position found;
 - b) instruct the patient not to move; and
 - c) if possible, remove jewellery from the patient's ears and neck. Assess for hair ties, pins, clips, extensions, etc., and consider removal.
 - d) two (2) health care professionals shall apply a rigid collar. One (1) health care professional is responsible for managing the patient's head and neck; the other is responsible for fitting and applying the rigid collar and assisting with transfer of the patient.

Exclusion: If the patient presents with deviation of neck alignment and a history of traumatic mechanism of injury, the health care professional shall not attempt to straighten the patient's neck or apply a rigid collar. Notify the Physician and /or NP immediately.

- 4.2 Body alignment shall be maintained and twisting movements avoided when transferring the patient to a stretcher.
- 4.3 The patient should be positioned supine (without a pillow) unless a pre-existing condition prevents this (e.g., COPD, kyphosis). These patients may be placed in a position of comfort (i.e., head of bed raised).
- 4.4 Place a towel roll / head block on either side of patient's head and neck. This acts as a reminder to the patient not to move. Do not tape the patient's forehead down to the stretcher.
- 4.5 Assessment of motor power and sensation of all four (4) extremities shall be completed immediately prior to and immediately following repositioning of the patient.

5. Log-rolling Patient and Removal of Long Board

- 5.1 As soon as practical, the receiving ED is responsible for removal of a long board, unless there is need for immediate clinical intervention, which shall take priority.
- 5.2 The health care professional shall assess motor power and sensation to all four (4) extremities immediately prior to and immediately following the log-roll.
- 5.3 When log-rolling a patient for examination and/or removal of backboard, a minimum of two (2) health care professionals, one of which assumes the lead role, and two (2) health care providers are required.
- 5.4 If the patient has significant injury to extremities, additional health care providers may be required to immobilize the patient's limbs.
- 5.5 The health care professional is the person in charge during the log-roll procedure and is responsible for managing the patient's head and neck. They maintain neutral alignment of the patient's head during positioning and log-rolling, and lead team members throughout the procedure.

Note: Only health care professionals competent in SMR procedures may assume the lead role.

- a) One (1) health care professional shall lead the procedure and manage the patient's head; and maintain cervical spine control;
 - (i) Health care professionals who may lead the procedure include:
 - Registered Nurse (RN);
 - Licensed Practical Nurse (LPN);
 - Advanced Care Paramedic (ACP);
 - Primary Care Paramedic (PCP);
 - Physician; or
 - Nurse Practitioner.
- b) In addition to the lead in (a) above, one (1) health care professional competent in airway management shall be available to suction; manage, and protect the patient's airway:
 - (i) if the patient has an airway device (i.e., endo-tracheal tube, laryngeal mask airway) inserted, additional qualified health care providers may be required to manage and protect the patient's airway.

- 5.6 Health care providers shall take direction from the health care professional in charge of the log-roll (see Section 5.5) and understand the correct steps in positioning and log-rolling.
- a) Four (4) health care providers are required to log-roll the patient. In addition to the health care professional leading the procedure, one (1) health care provider manages the patient's shoulders and hips; one (1) health care provider manages the patient's hips and legs; and one (1) health care professional is required to remove the backboard and should observe the patient's back for bruising, swelling, and palpate for deformity and/or pain.
 - b) To log-roll the patient, the health care professional leading the procedure shall maintain alignment of the patient's head and coordinate the team's movement. They shall keep the patient's nose in line with the umbilicus during movement.
- 5.7 Following removal of the backboard, the patient is log-rolled onto their back. The rigid collar should remain in place, with towel rolls / head blocks on both sides of the head, and maintained in this position until the Physician / NP assessment. (Do not tape the patient's forehead down to the stretcher). The patient should be informed regarding the need to remain in this position.
- 5.8 Consider for pregnant patients greater than 20 weeks gestation, that the patient may need to remain on the backboard to maintain neutral alignment and tilt the board to the left using a wedge or blanket. This will reduce compression of the inferior vena cava by the uterus.
- 5.9 Patients on SMR should be log-rolled every two (2) hours to provide skin care and to relieve pressure areas.

6. Transferring Patients within the Facility

- 6.1 Immediately prior to transport, ensure the patient is placed on a slider / transfer board using proper log-rolling technique, as outlined above. This will facilitate transfer within the facility. The patient should be transported with both bed side rails up.
- 6.2 Patients shall be removed from the slider / transfer board as soon as possible using proper log-rolling technique to prevent tissue damage over bony prominences and to improve comfort for the patient.
- 6.3 When transporting patients within the facility the health care provider shall coordinate with the receiving department. This minimizes the time the patient remains outside of the receiving department.

7. Documentation

- 7.1 The health care professional shall document implementation of this protocol, including all assessments and interventions on the patient's **health record**.

DEFINITIONS

Health care professional means an individual who is a member of a regulated health discipline, as defined by the *Health Disciplines Act* of the *Health Professions Act*, and who practices within scope or role.

Health care provider means any person who provides goods or services to a patient, inclusive of health care professionals, staff, students, volunteers and other persons acting on behalf of or in conjunction with Alberta Health Services.

Health record means the Alberta Health Services legal record of the patient's diagnostic, treatment and care information.

Patient means an adult or child who receives or has requested health care or services from Alberta Health Services and its health care providers or individuals authorized to act on behalf of Alberta Health Services. This term is inclusive of residents, clients and outpatients.

Spinal Motion Restriction (SMR) means the procedure used to care for patients with actual or suspected unstable spinal injuries. SMR includes: reduction of gross movement by the patient; prevention of additional injury to the spine; and regular reassessment of motor/sensory function.

REFERENCES

- Alberta Health Services Governance
 - *Assessment and Reassessment of Patients* Guideline (#HCS-181-01)
 - *Calgary Zone Emergency Department Trauma Patients Requiring Extrication from Private Vehicles* Protocol (T-2)
 - *Provincial Emergency Medical Services Urgent Care Centre Transport Criteria* Protocol (#HCS –EMS-OP-02).
- Alberta Health Services Forms:
 - Nursing Policy and Procedure. Positioning of an Adult Patient with a Known or Suspected Acute Spinal Injury: C-spine, L-spine, T-spine – “logrolling”, L-1.
- Alberta Health Services Resources:
 - *ED Unit Manual Trauma Patients Requiring Extrication from Private Vehicle, number 1-2*

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