

## Spinal Immobilization Protocol

### Intent and Principles

#### I. Purpose:

This protocol is to provide guidelines for the spinal immobilization of pre-hospital patients in Whitman County. This protocol is not designed to remove spinal immobilization and it should be emphasized that a patient with a suspected spinal injury should be moved as little as possible.

#### II. Core Principles:

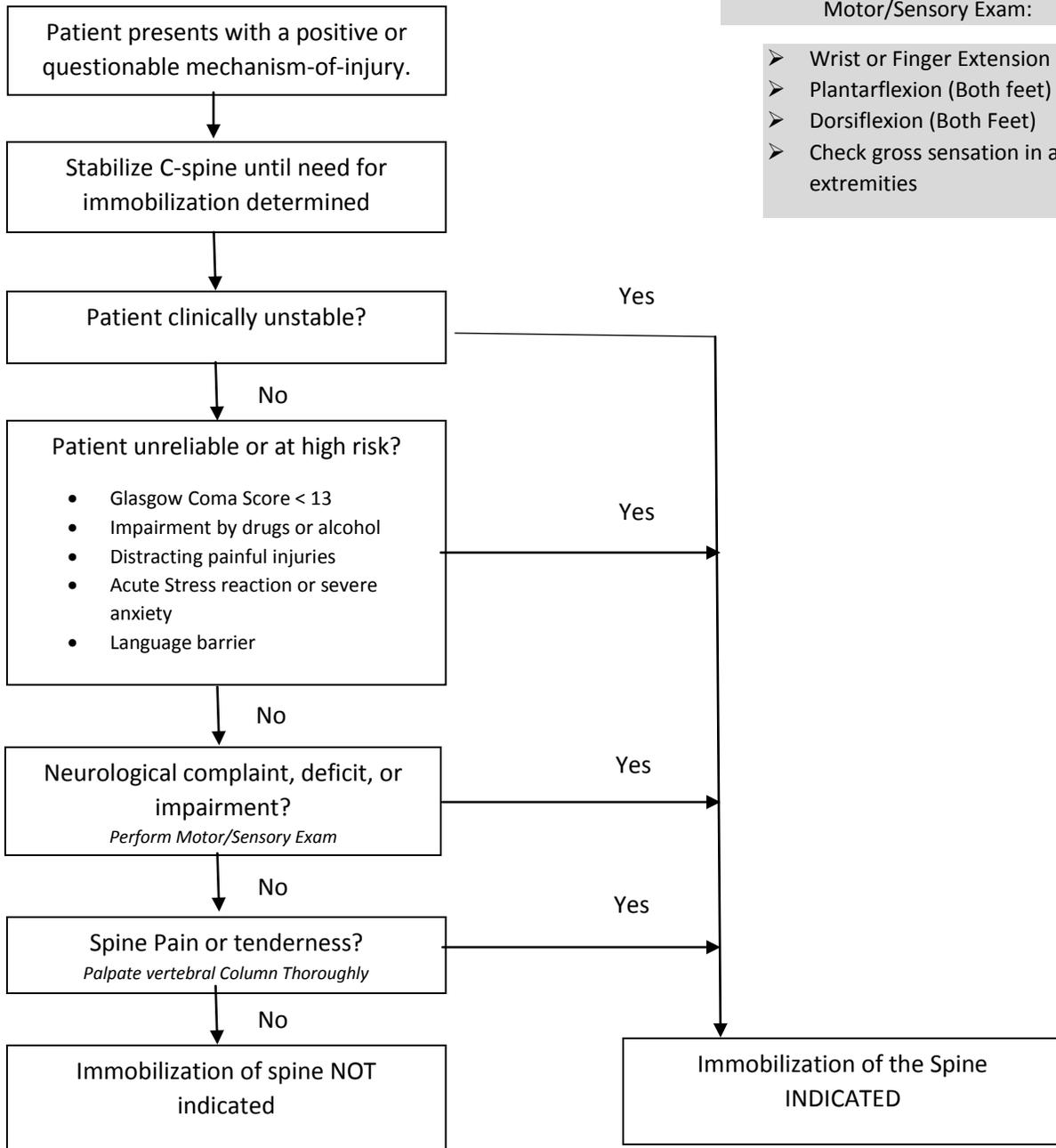
- A. The best candidates for full head-to-toe immobilization are victims of a high impact mechanism with multi-system injuries.
- B. Most significant spinal injuries present with mid-line cervical spine tenderness upon palpation. Alert and oriented patients with significant spinal injuries generally self-splint.
- C. The best method to determine if a patient has a potential spinal injury is with a diligent physical exam. In general, ambulatory patients do not have serious spinal injuries.
- D. The goal of spinal immobilization should be to reduce, rather than increase, patient discomfort. Immobilization techniques that increase patient discomfort should be avoided if possible.
- E. Patients with suspected spinal injuries should be maintained in the “neutral” in-line position. Remember that this “neutral” position changes from patient to patient. Never attempt to move a patient into a “neutral” position if this movement increases pain, neurologic deficits, or neck spasms.
- F. Immobilization can and should be accomplished using the most appropriate tools for the patient and scenario being evaluated. Never use equipment that does not fit that patient correctly. For example, more damage can be caused by using a c-collar that hyperextends the patient’s neck than by not using a c-collar at all.
- G. Full Spinal immobilization of penetrating thoracic trauma patients increases mortality and morbidity. Alert, neurologically intact victims of penetrating thoracic trauma without spinal pain do not need spinal immobilization.
- H. If there is any doubt whether the patient has a c-spine injury or not, it is always better to immobilize the patient.

#### III. Spinal Immobilization Guidelines:

- A. Methods to achieve spinal immobilization will vary depending on the severity of the injury and also mental status of the patient. The following methods are allowable to achieve immobilization, least invasive to the most invasive. Lateral, semi-fowler’s, or fowlers position with cervical collar only, soft collar, pillows, vacuum splint or mattress, children’s car seats, KED, backboards with adequate padding, head immobilizers and straps.
- B. Partial immobilization of a patient with an isolated neck injury is acceptable, and encouraged. This may include a stiff or soft collar, use of vacuum splinting, pillows, the KED, etc. Patients with isolated cervical pain may be placed in the position of comfort, semi-fowlers, fowlers, etc.

- C. Provide manual stabilization restricting movement. Alert and cooperative patients may be allowed to self-limit motion if appropriate with or without c-collar.
  - D. Apply cervical collar.
  - E. If the patient must be moved, keep in mind the overall goal of restricting gross movement of the spine while preventing additional discomfort / pain. Self-extrication of the patient is allowable.
    - a. Allowing patients to self-extricate and place themselves onto gurneys and spinal immobilization devices is acceptable. Back-boarding patients from standing position, "standing take-down," is discouraged.
    - b. Pull sheets, flexible devices, KED, can be deployed if necessary. Hard backboards should have limited utilization.
  - F. Always apply adequate padding or use vacuum mattress to prevent tissue damage.
  - G. Place patient in position best suited to protect the airway.
- IV. Out of Hospital Spinal Clearance
- A. Applies to reliable patients only.
    - a. Patient is oriented, cooperative, sober, without:
      - i. Significant distracting injuries
      - ii. Language Barrier
  - B. Pre-hospital personnel shall apply cervical spine immobilization to patients injured from blunt force trauma in the following circumstances:
    - a. Conscious patients exhibiting one or more of the following signs or symptoms:
      - i. Posterior midline cervical tenderness or pain
      - ii. Distal numbness, tingling, weakness, or paresthesia
      - iii. Paralysis
      - iv. Neck guarding or restricted range of motion;
      - v. Glasgow Coma Scale (GCS) of less than 13 as a result of blunt force trauma
    - b. Unconscious adult patients suffering a blunt force mechanism of injury, except ground level falls.
  - C. Prehospital personnel shall not apply cervical spine immobilization to patients in the following circumstances:
    - a. Patients injured solely from penetrating trauma, unless evidence of spinal injury.
    - b. Unconscious adult patients experiencing a ground level fall
    - c. Patients in Cardiac Arrest
    - d. NOTE: Use of backboards / c-collars to assist in movement, CPR, intubation, etc, is acceptable.
  - D. In patients without neck or spinal mid-line back pain or tenderness, altered level of consciousness, intoxication, or distracting injury, spinal immobilization may be withheld as long as the patient can be accurately evaluated. The following algorithm should be utilized when deciding whether or not to immobilize a patient's spine:

Spinal Immobilization Decision Algorithm



**Motor/Sensory Exam:**

- Wrist or Finger Extension
- Plantarflexion (Both feet)
- Dorsiflexion (Both Feet)
- Check gross sensation in all extremities

**High Risk Factors:**

- Age ≥ 65 or ≤ 8
- Axial Load to the head (e.g. – diving injury)
- Numbness or tingling in extremities

*•If any one of the high risk factors are present, strongly consider Spinal Motion Restriction.*