MEDICAL CONTROL POLICY STATEMENT/ADVISORY

No. 2015-01
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Re: Spinal Injury Assessment & Spinal Precautions Procedure

Office of the Medical Director
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All SVMCA Providers:

Effective immediately, the SVMCA will be utilizing new State protocols for the treatment and transport of patients with potential spinal injuries. These protocols are attached and represent a significant change to past practices in EMS here; and throughout the State of Michigan.

Multiple pre-hospital studies have been conducted questioning whether spinal immobilization (back-boarding) is an effective treatment of suspected or known traumatic spinal injury. To date, none of these studies have shown a correlation between improved neurologic outcomes or survivability and the use of spinal immobilization. In fact, there is suspicion that spinal immobilization may do more harm than good. This is especially true in penetrating trauma where spinal immobilized patients had worse outcomes either due to the backboard or delays in transport.

These are some of the highlights to the new protocols:

- Cervical collars will continue to be used for patients that have both a mechanism and a positive clinical assessment (Altered MS, distracting injury, intoxicants, CNS deficit, pain/tenderness). As before, patients 65 and over with a mechanism and a negative clinical assessment should have a cervical collar applied.
- Backboards are indicated when patients cannot self-extricate and will be used to move the patient to the cot. Once there, the patient should be removed using a log-roll method and secured using the cot straps. Patients should only remain on the backboard if the crew deems it is safer for the patient considering stability, time, and comfort. Effectively, backboards are now considered "extrication devices" and <u>not</u> a tool for transport.
- Patients that are able to self-extricate should be allowed to do so after the application of a cervical collar. Manual stabilization should be performed while assisting the patient during this process. *Self-extrication means that a patient may move their-self or walk to the stretcher, if there are no other injuries to prohibit this (i.e. leg, pelvis, etc.)*
- Transport of patients with a cervical collar should be done in a position of comfort and will typically done supine or at a 30 degree incline. Be conscious of the patient's respiratory status and effort if transporting supine.

The above changes are largely apply in blunt trauma. The SVMCA supplemental protocol addressing penetrating trauma is still in effect. Patients with isolated penetrating trauma will not be restrained by a cervical collar or backboard. The key to good patient care for patients with critical penetrating trauma is rapid transport.

If you have any questions or concerns, please feel free to contact our office.

Noel Wagner, MD NREMT-P
Medical Director, SVMCA

Attachments: 1-20 Spinal Injury Assessment
1-20(S) Spinal Injury Assessment (Penetrating Trauma)
5-27 Spinal Precautions

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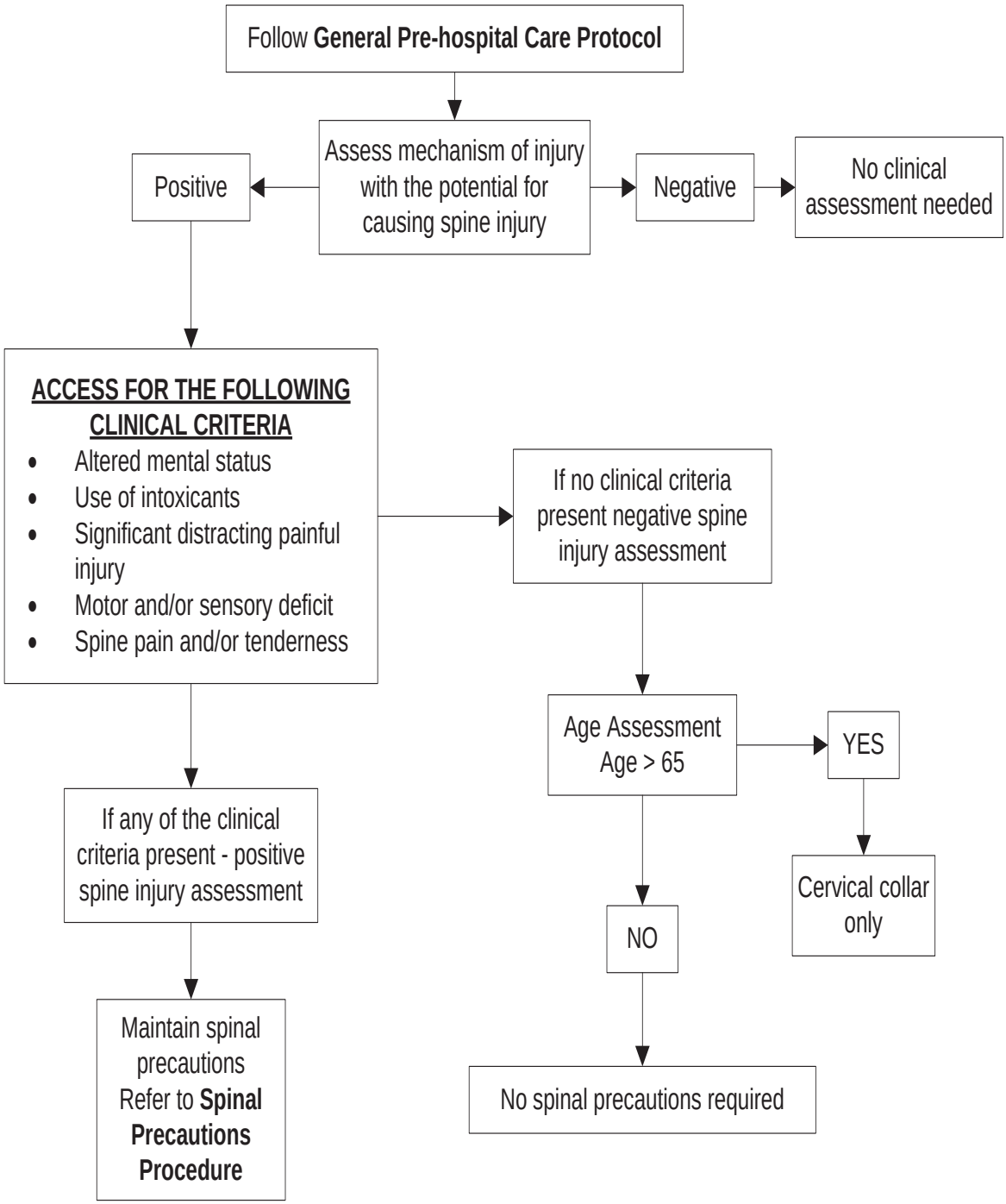
Spinal Injury Assessment

Pre-Medical Control

MFR/EMT/SPECIALIST/PARAMEDIC

1. Follow **General Pre-hospital Care protocol**.
2. Assess the mechanism of injury.
3. A patient with a negative mechanism does not need a spine injury clinical assessment
4. Patients with mechanism of injury with the potential for causing spine injury shall have a spine injury clinical assessment performed.
5. Clinical criteria are used as the basis for assessment. If any of the clinical criteria are present or if the assessment cannot be completed, the patient has a positive spine injury assessment.
6. If the mechanism of injury with the potential for causing spine injury exists, the following clinical criteria are assessed:
    A. Altered mental status
    B. Use of intoxicants
    C. Significant distracting painful injury
    D. Motor and/or sensory deficit
    E. Spine pain and/or tenderness
7. If any of the clinical criteria are present the patient has a positive spine injury assessment. If none of the clinical criteria are present the patient has a negative spine injury assessment.
8. Patients with a positive spine injury assessment should have spinal precautions maintained during movement and transport. Refer to **Spinal Precautions Procedure.**
9. Patients over the age of 65 with a mechanism of injury with the potential for causing spine injury will have a cervical collar applied even if the spinal injury clinical assessment is negative. Refer to **Spinal Precautions Procedure.**


Follow **General Pre-hospital Care Protocol**
Assess mechanism of injury with the potential for causing spine injury
Positive
Negative
No clinical assessment needed
ACCESS FOR THE FOLLOWING CLINICAL CRITERIA
• Altered mental status
• Use of intoxicants
• Significant distracting painful injury
• Motor and/or sensory deficit
• Spine pain and/or tenderness
If no clinical criteria present negative spine injury assessment
Age Assessment Age > 65
YES
Cervical collar only
NO
No spinal precautions required
If any of the clinical criteria present - positive spine injury assessment
Maintain spinal precautions Refer to **Spinal Precautions Procedure**

Spinal Injury Assessment (Penetrating Trauma) – Supplemental Protocol

This protocol is meant as a supplement to the **Spinal Injury Assessment Protocol** (1-20)

All patients sustaining possible spinal injury as a result of blunt trauma should be evaluated and treated as per the **Spinal Injury Assessment Protocol**. This supplemental protocol is specific to patients who have sustained isolated penetrating trauma; regardless of velocity.

Current studies specific to penetrating trauma have shown that spinal immobilization in the setting of isolated penetrating trauma (even to the head, neck, or torso) is of no benefit to patient outcome and may possibly increase the risk of mortality. There is also no data showing that spinal immobilization will prevent or minimize a neurological injury that has been caused by penetrating trauma. Thus, the Saginaw Valley Medical Control Authority has adopted the following supplemental protocol:

Pre-Medical Control
MFR/EMT/SPECIALIST/PARAMEDIC

1. Patients who have sustained *isolated* penetrating trauma shall not be restrained by a cervical collar or backboard as a means of stabilization.
    a. If there is coexisting blunt trauma, then spinal immobilization may be considered as per the **Spinal Injury Assessment Protocol**.
    b. Simply falling to the ground after being shot or stabbed does not qualify as coexistent blunt trauma *in this setting*.
2. Backboards may be used for movement, but only as a last resort.
    a. Simple lifts, "Mega Movers", tarps or other devices are simpler means of movement and should be considered first.
    b. If a backboard must be used for movement, the patient should be slid off once extrication is complete or as the patient is placed on the stretcher.
3. Rapid Transport is the key to treatment in penetrating and in any severe traumatic injury. Delays are detrimental to patient outcome.
4. As with any other traumatic situation; IV attempts should be done while en route to the destination and cannot be the cause of a delayed transport.

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Spinal Precautions

Pre-Medical Control
MFR/EMT/SPECIALIST/PARAMEDIC
Indications & General Guidance

1. Refer to the **Spinal Injury Assessment Protocol.** Patients with a positive spinal injury assessment should have spinal precautions maintained during transport.
2. Major trauma patients who require extrication should have spinal precautions maintained using an extrication device (long backboard or equivalent) during extrication. If sufficient personnel are present, the patient may be log rolled from the extrication device to the ambulance cot during loading of the patient.
3. Patients may remain on the extrication device if the crew deems it safer for the patient considering stability, time and patient comfort considerations. This decision will be at the discretion of the crew.
4. Patients with penetrating traumatic injuries do not require spinal precautions unless a focal neurologic deficit is noted on the spinal injury assessment.
5. An ambulatory patient with a positive spinal injury assessment should have an appropriately sized cervical collar placed. Place the patient directly on the ambulance cot in a position of comfort, limiting movement of the spine during the process.
6. Patients, who are stable, alert and without neurological deficits may be allowed to self-extricate to the ambulance cot after placement of a cervical collar. Limit movement of the spine during the process.
7. Patients over the age of 65 with a mechanism of injury with the potential for causing cervical spine injury will have a cervical collar applied even if the spinal injury clinical assessment is negative.

Specific Techniques

1. Cervical Collars
    A. Cervical collar should be placed on patient prior to patient movement, if possible.
    B. If no collar can be made to fit patient, towel, blanket rolls, head block or similar device may be used to support neutral head alignment.
    C. The cervical collar may be removed if interfering with airway management or airway placement, or if causing extreme patient distress.
2. Self-Extrication Procedure
    A. Patients, who are stable, alert and without neurological deficits may be allowed to self-extricate to the ambulance cot after placement of a cervical collar.
    B. Limit movement of the spine during the process.
3. Emergency Patient Removal
    A. Indicated when scene poses an imminent or potential life threatening danger to patient and/or rescuers, (e.g. vehicle or structure fire).

B. Remove the patient from danger while best attempt is made to maintain spinal precautions.
C. Rapid Extrication is indicated when patient condition is unstable (i.e.: airway or breathing compromise, shock, unconsciousness, or need for immediate intervention).

4. Long Extrication Device (e.g. long Backboard, scoop stretcher, basket stretcher)
   A. Indicated when patient requires spinal precautions and the patient condition prevents self-extrication.
   B. Patient's head and cervical spine should be manually stabilized.
   C. Rescuers should place the patient in a stable, neutral position where space is created to place backboard or other long extrication device in position near the patient.
   D. Move the patient to supine position on the long extrication device.
   E. The patient is secured to the device with torso straps applied before head stabilization.
   F. Head stabilization material should be placed to allow for movement of the lower jaw to facilitate possible airway management.
   G. The extrication device is used to move the patient to the ambulance cot.
5. Log Roll Procedure
   A. Cervical collar should be placed when indicated.
   B. Place the backboard or equivalent behind the patient.
   C. Patient is log rolled, maintaining neutral alignment of spine and extremities.
   D. Log roll procedure requires 2 or more personnel in contact with the patient.
   E. If log roll is not possible, patient should be moved to board or equivalent while attempting to maintain neutral alignment spinal precautions.
   F. Patient is secured to the backboard or equivalent for movement to the ambulance cot.
   G. Head stabilization materials such as foam pads, blanket rolls may be used to prevent lateral motion. Pad under the head when feasible.
   H. If sufficient personnel are present, the patient should be log rolled from the extrication device to the ambulance cot during loading of the patient.
   I. When log roll on to the ambulance cot is impractical, secure the patient to the extrication device and ambulance cot for transport.
6. Spinal Precautions
   A. Once the patient is placed on the ambulance cot, if no extrication device is still in place, secure the patient with seatbelts in a supine position, or in position of comfort if a supine position is not tolerated.
   B. Head may be supported with head block or similar device to prevent rotation if needed. Padding should be placed under the head when practical. Do not tape the head to the ambulance cot.

Special Considerations

1. Hypoventilation is likely to occur with spinal cord injury above the diaphragm. Quality of ventilation should be monitored closely with support offered early.
2. Spinal/neurogenic shock may result from high spinal cord injury. Monitor patient for signs of shock. Refer to **Shock Protocol.**
3. Spinal precautions in the patient wearing a helmet should be according to the **Helmet Removal Procedure.**
4. Manual spinal precautions in the obtunded patient must be initiated and continued until the patient is secured to the ambulance cot.
5. Patients who are markedly agitated, combative or confused may not be able to follow commands and cooperate with minimizing spinal movement. Rigid immobilization should be avoided if it contributes to patient combativeness. Patients may remain on the backboard if the crew deems it safer for the patient, and this will be at the discretion of the crew.
6. Manual in line stabilization must be used during any procedure that risks head or neck movement, such as endotracheal intubation. If manual cervical stabilization is hampering efforts to intubate the patient, the neck should be allowed to move as needed to secure the airway. An unsecured airway is a greater danger to the patient than a spinal fracture.
7. Document spinal precautions techniques utilized.
8. Document the patient's neurologic status before and after establishing spinal precautions when possible.
9. Pediatric Patients and Car Seats:
    a. Infants restrained in a rear-facing car seat may be immobilized and extricated in the car seat. The child may remain in the car seat if the immobilization is secure and his/her condition allows (no signs of respiratory distress or shock).
    b. Children restrained in a car seat (with a high back) may be immobilized and extricated in the car seat; however, once removed from the vehicle, the child should have spinal precautions maintained as for an adult.
    c. Children restrained in a booster seat (without a back) need to be extricated and immobilized following standard procedures.