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| DEPARTMENT: Collaborative Practice | POLICY TITLE: Spine Precautions for Immobilization of the Trauma Patient |
| Page 1 of 11 | REPLACES POLICY DATED: 2/95, 3/96, 2/99, 4/01, 4/02, 11/04, 4/05, 780-030, 9/06, 10/09, 7/12; 2/2013 600-201 |
| EFFECTIVE DATE: 1/2016 | REFERENCE NUMBER: 900-TX-201 |

PURPOSE:

To provide a procedural guideline to maintain stabilization and/or preserve neuromotor function of all patients presenting with complaints or injuries consistent with a possible injury to the cervical, thoracic, and/or lumbar spine when undergoing surgical, imaging, or other procedures requiring mobilization of the patient.

POLICY:

1. All patients presenting with complaints or injuries consistent with a possibly injury to any part of the spine shall be assessed upon arrival to determine the need for placement of a rigid cervical collar.
2. All patients presenting with complaints or injuries consistent with a possible injury to any part of the spine shall be assessed upon arrival and placed in strict spinal precautions for spinal immobilization. Strict spinal precautions are defined as:
 - a. Head is maintained in neutral alignment.
 - b. HOB remains flat or the bed is placed in reverse trendelenberg.
 - c. If the patient has pre-existing thoracic kyphosis (as is commonly seen in the elderly or patients with kyphoscoliosis), they can be maintained in their usual neutral position, or with HOB up to 30°.
 - d. A pillow may be placed under the legs to off-load pressure on the lower spine if needed for patient comfort, as long as not contraindicated due to other injuries.
 - e. Any movement or transferring of the potentially or known spinal injured patient should consist of proper log rolling/transfer technique; maintaining neutral spinal alignment at all times.

CERVICAL SPINE:

1. Based upon assessment by the RN, a rigid cervical collar should be applied if the patient complains of any of the following:
 - a. Neck pain
 - b. Point tenderness over the Cervical Spine, Lumbar Spine, or Thoracic Spine areas
 - c. Complaint related to neurovascular deficit
 - d. History of loss of consciousness and or/head trauma
 - e. Presence of any severe distracting pain, or shooting pain into extremities
 - f. Trauma associated with signs and symptoms of ETOH, drug intoxication or altered mental status including dementia
 - g. High-mechanism injuries meeting activation criteria
 - h. Any penetrating trauma to the head, neck, thoracic or lumbar spine

PLACING C-COLLAR PROCEDURE:

1. If the patient does not arrive with a stabilization device in place, the rigid cervical collar should be applied in the following manner:
 - a. Approach the patient in the patient's line of vision. Position your hands on each side of the patient's head, with thumbs alongside the mandibles and fingers behind the head on the occipital ridge. Maintain gentle but firm stabilization of the neck throughout the entire procedure (head in neutral alignment with the body). Explain to the patient not to move

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his/her neck or head.

- b. Motor and sensory function should be assessed and documented prior to and after application of the rigid cervical collar. Any changes in motor or sensory function should initiate immediate notification of the ED physician, Trauma Surgeon, and/or Spine Surgeon involved in the care of the patient.
 - c. While the first person is maintaining immobilization, an assistant should remove all jewelry, especially earrings and necklaces.
 - d. While the first person continues to maintain immobilization, the assistant applies the appropriate size of rigid cervical collar. An appropriately fitted collar will fit between the point of the chin and the suprasternal notch, resting on the clavicles and supporting the lower jaw. The back part of the collar should be slid under the patient's neck first, followed by placing the front part of the collar on top of the patient's neck under the chin, and then securing the two pieces together by the Velcro tabs. The Velcro tabs should be of equal length at the front to ensure the back piece is midline. The arrows on the front and back halves of the collar should be pointing upward.
2. The nurse should instruct the patient not to move the neck, turn the head, or move any portion of the spine any fashion until further instruction is given.
 3. Maintaining C-spine immobilization, the patient should be assisted to remain in the supine position on a stretcher in reverse Trendelenberg to prevent potential aspiration.
 4. When appropriate clearance of the C-spine is unable to be obtained in the ED, the patient should be admitted with a cervical collar in place. A cervical collar may be discontinued-only after written/verbal order of the ED physician, Trauma Services physician, orthospine or neurospine surgeon assigned to the patient. Clearance of the cervical spine and removal of the cervical collar should be documented in the nursing notes.

THORACIC AND LUMBAR SPINE:

1. When the patient arrives to the ED via the EMS system with a rigid cervical collar and backboard in place, the ED physician should remove the backboard utilizing the log-roll technique as soon as possible after the primary and secondary survey.
2. Based on the mechanism of injury and patient assessment, the Emergency Department or Trauma Surgeon will determine the need for spine imaging studies.
3. The patient will be maintained with strict spinal precautions until the thoracic and lumbar spine have been cleared by a physician.
4. If a spinal injury has been identified, the patient **will remain** in strict spinal precautions until further directed by the trauma, neurospine or orthospine physicians.
5. Until the T/L spine is cleared, any movement of the patient will be performed by the log-rolling and transfer technique outlined below.
6. Other orthosis, such as TLSO will be used according to physician order. For example at all times or when HOB elevated or with ambulation.

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LOG ROLLING AND TRANSFER TECHNIQUES

(Refer to “Log Rolling and Transfer Technique for Spinal Injured Patient” video.

<http://hcapodcasting.medcity.net/HCAPODCASTWEBSETUP/Videocast/1415/player.htm>)

1. Log Roll:
 - a. Instruct the patient to cross his or her arms across his or her chest if possible. Inform the patient to remain still and allow the health care team members to do the movement of his or her body.
 - b. Minimum of four people are required with three of the people on the side of the patient being rolled towards:
 - First person to hold head/neck maintaining cervical alignment/stability. This person is the leader and verbally directs, on his/her count when to roll the patient in one solid movement.
 - Second person to hold shoulder and hip.
 - Third person to hold hip and knee.
 - Fourth person to hold the raised leg straight; supporting the knee and ankle underneath.
2. Transfer technique:
 - a. Transfer of the patient from bed to bed or imaging table requires log rolling onto a “slider board.”
 - b. The patient is placed on the slider board and the actual board is then used to maneuver the patient to the other bed or imaging table.
 - c. **DO NOT USE THE SLIDER BOARD AS A SURFACE TO DRAG THE PATIENT FROM THE BED TO THE TABLE BY PULLING ON THE SHEET**
 - d. Repeat appropriate log rolling technique to remove the slider board.

PLACING TLSO or LSO PROCEDURE:

1. The TLSO should be applied in the following manner:
 - a. While the patient is lying supine, log roll the patient into the brace, keeping the spine in neutral alignment at all times. Once the straps are secured tightly, the patient’s head of bed may be raised to the parameters set by the spine surgeon.
 - b. The patient should not be sitting upright for brace placement unless cleared by the spine surgeon.

PROLONGED IMMOBILIZATION (over 24 hours):

1. Log rolling side to side every two hours may be instituted to prevent pressure ulcers as long as patient is kept in neutral alignment by staff performing the log rolls. Ensure the leg that is raised during log rolling remains in alignment as previously described in the video and above.
2. Upon a physician order, a pillow may be placed under the neck.
3. While supine, a pillow may be placed under the legs to off-load pressure on the lower spine if needed for patient comfort, as long as not contraindicated due to other injuries.

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4. Upon a physician order, an Aspen Vista ICU back occipital pad, or Miami-J Occian back occipital pad, may be used to prevent occipital pressure sore.
5. Acceptable specialty mattresses include: Refer to attached MCP reference sheets, *Tower Owned and Rental Options, Critical Care Owned and Rental Options, Critical Care Spinal Trauma Options, and Specialty Surface Selection Rental Request*.
6. Skin integrity should be assessed with every shift assessment paying close attention to the pressure points caused by the rigid cervical collar, particularly the chin and occipital area. This requires a minimum of two people: One to maintain cervical spine mobilization while the other person releases the collar to assess the skin underneath the collar.
7. TLSO brace may be removed if the patient will be lying supine in bed.

MISCELLANEOUS:

1. The status of the cervical, thoracic and lumbar spine should be part of the SBAR report stating whether the cervical, thoracic or lumbar spine has been cleared or if the patient remains in strict spinal precautions.
2. Documentation points include but not limited to:
 - a. Time and who (whom) removed cervical collar clearing the cervical spine
 - b. Time and who (whom) cleared the thoracic and lumbar spine
 - c. Presence of spinal precautions maintained until otherwise determined by trauma, orthospine or neurospine physicians.
 - d. Motor and sensory assessment prior to and after application or removal of any devices.
 - e. Motor and sensory assessment as part of a routine re-assessment and with any change in patient condition.
 - f. In addition to the above points, the in-patient units will complete Form GF-509 – Spinal Assessment Flowsheet.

REFERENCES:

Del Rossi, G., et al. "Spine Board Transfer Techniques and the Unstable Cervical Spine," Spine 29(7):E134-38, April 2004.

Spine Universe. (2010, January 17). "Guidelines for the Management of Acute Cervical Spine and Spinal Cord Injuries." <http://www.spineuniverse.com/pdf/traumaguide/finished1116.pdf>. (Level V)

Spinal Injuries Association. "Moving and Handling Patients with Actual or Suspected Spinal Cord Injuries." www.spinal.co.uk/userfiles/images/uploaded/pdf/288-709666.pdf

Approved by: Trauma Services Committee, Neurosciences
Committee

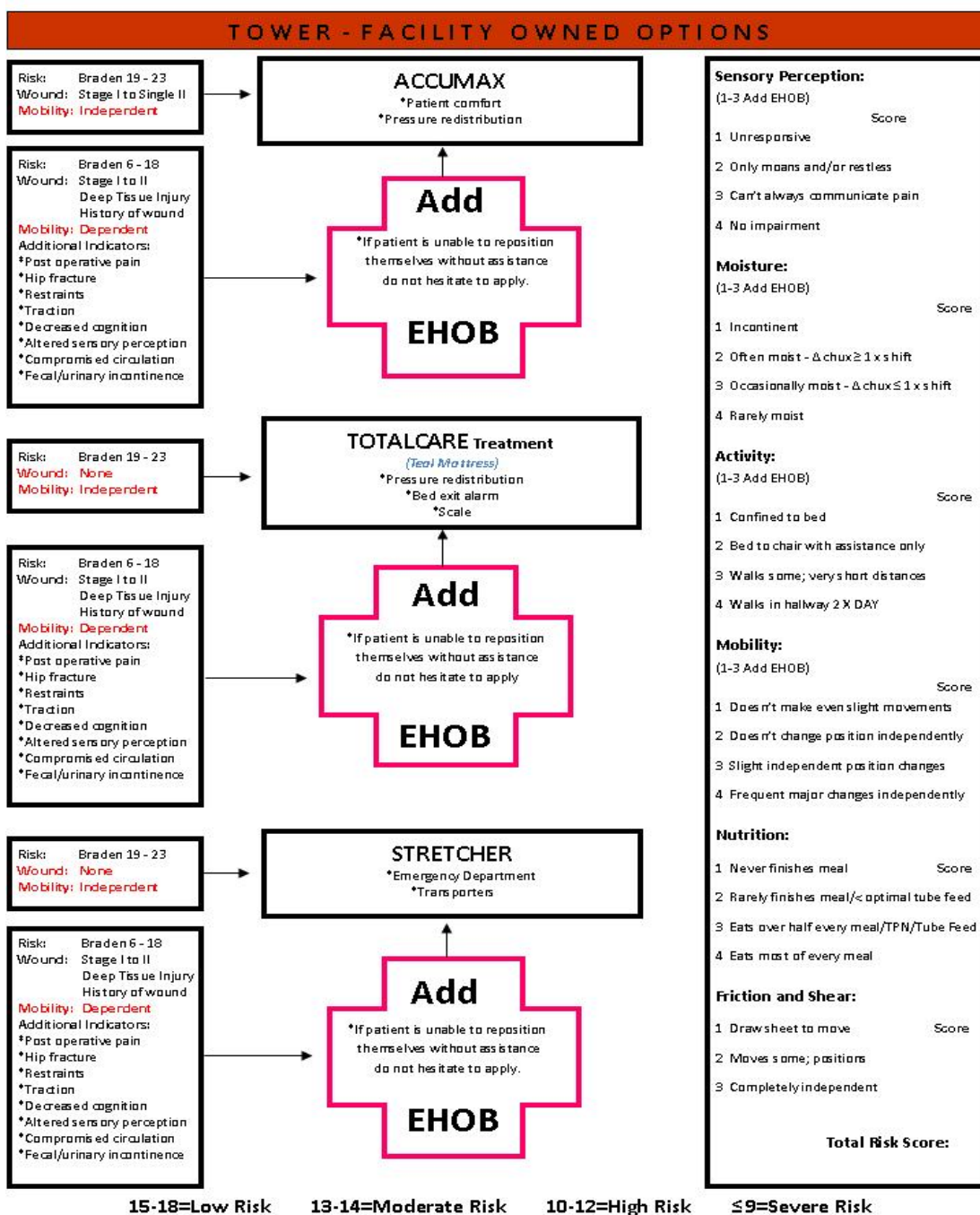
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Transfer of Spine Precaution Patient” 4 minute video at
<http://hcapodcasting.medcity.net/HCAPODCASTWEBSETUP/Videocast/1415/player.htm> - video can only be viewed on the facility intranet.)

Vaccaro, A., et al. Dec2010. Spine and Spinal Cord Trauma: Evidence-Based Management

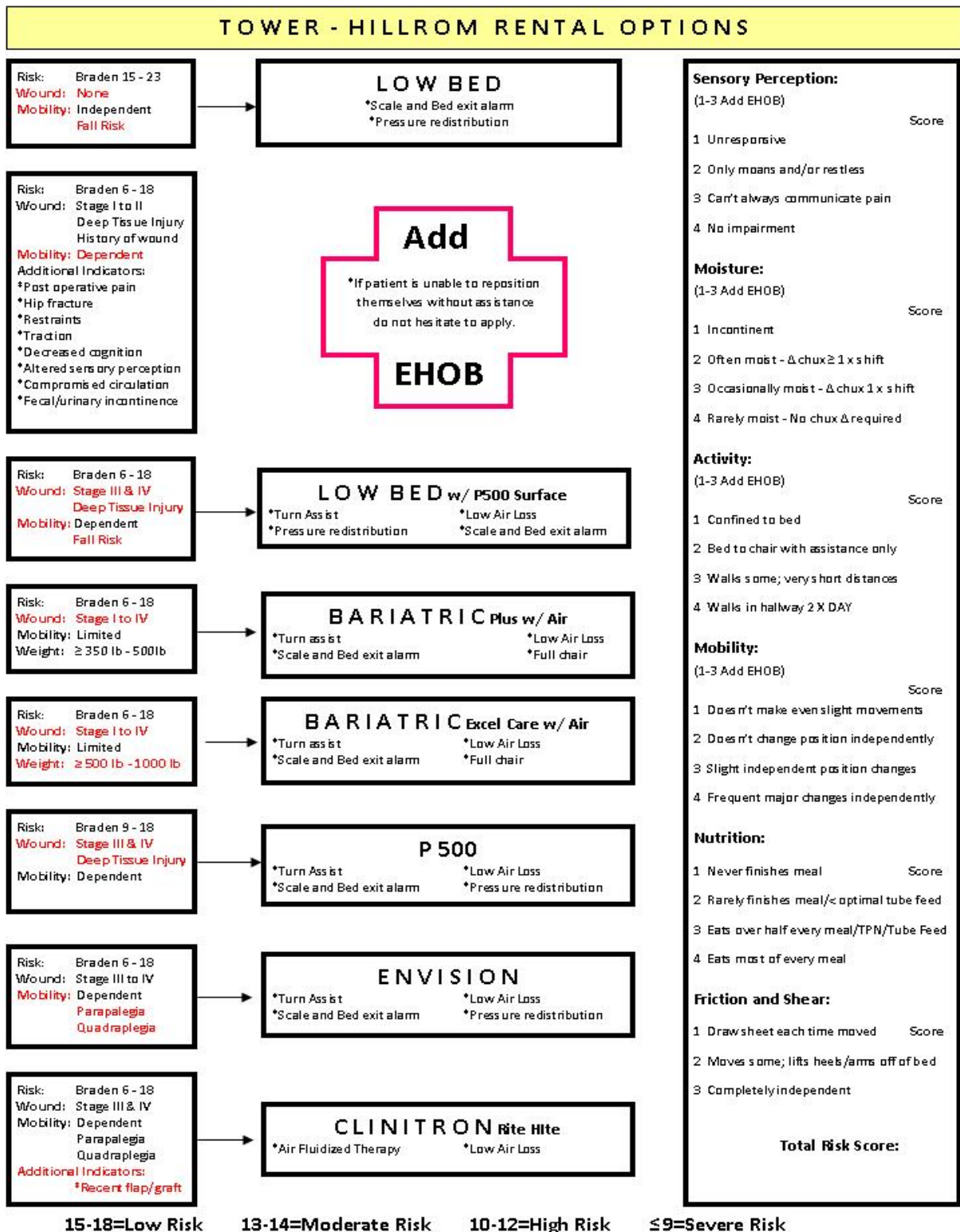


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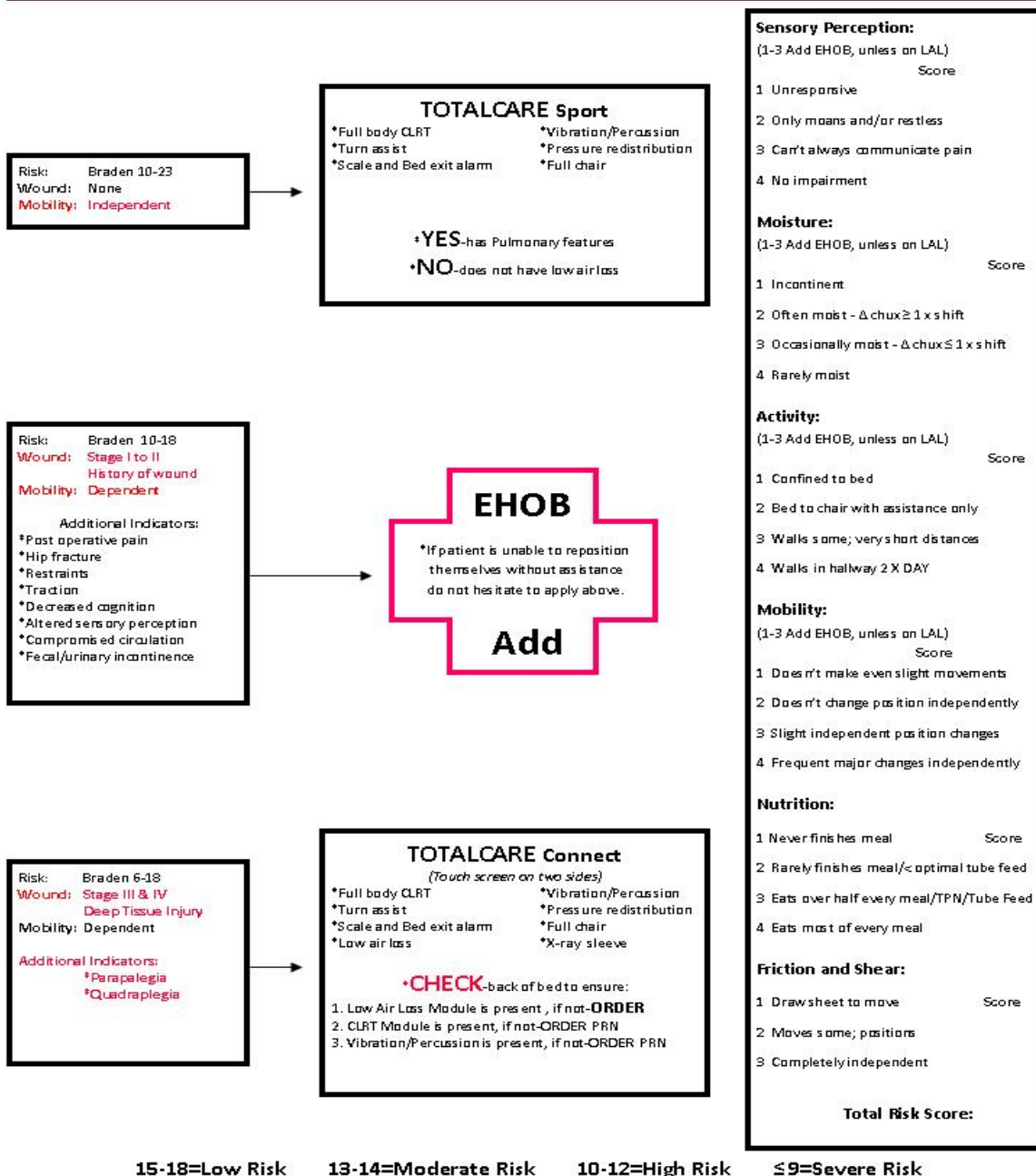




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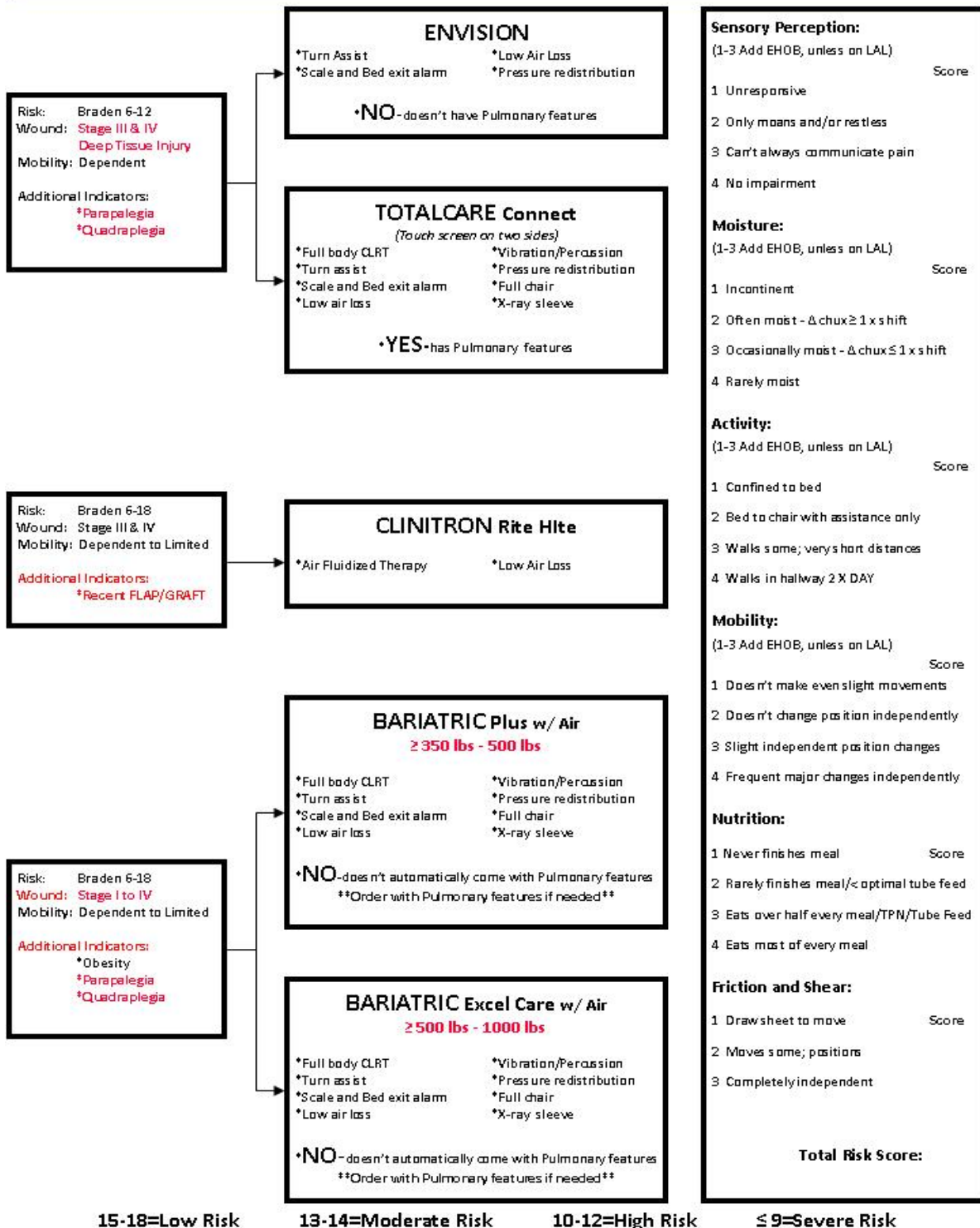
CRITICAL CARE-FACILITY OWNED OPTIONS





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CRITICAL CARE-HILLROM RENTAL OPTIONS

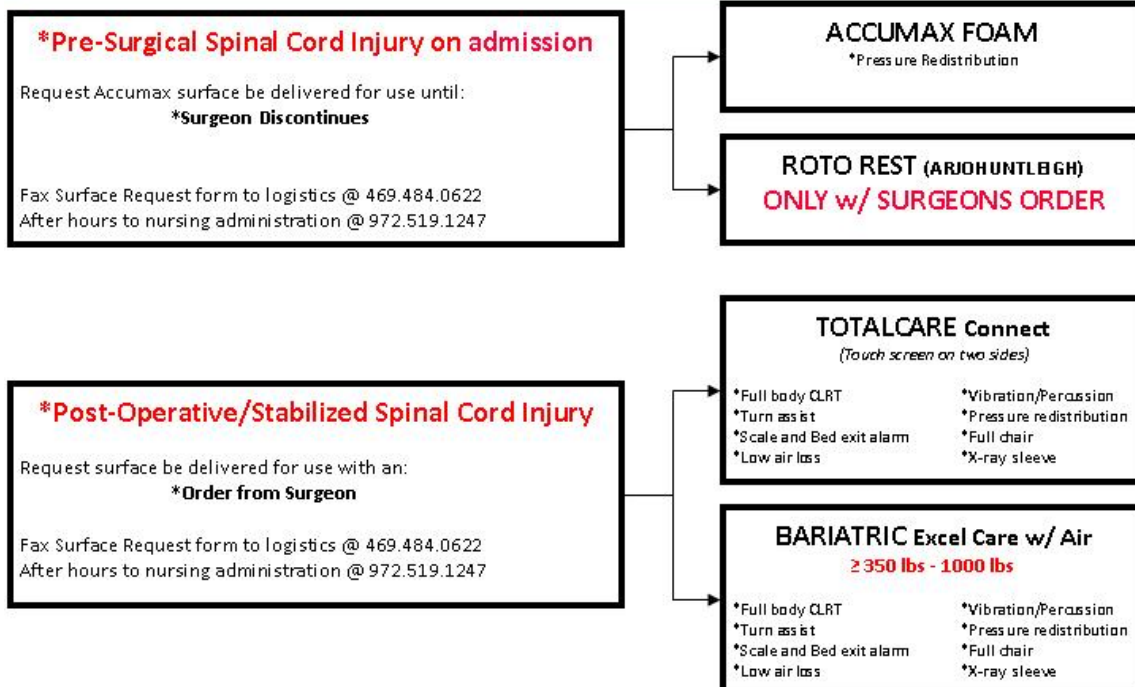




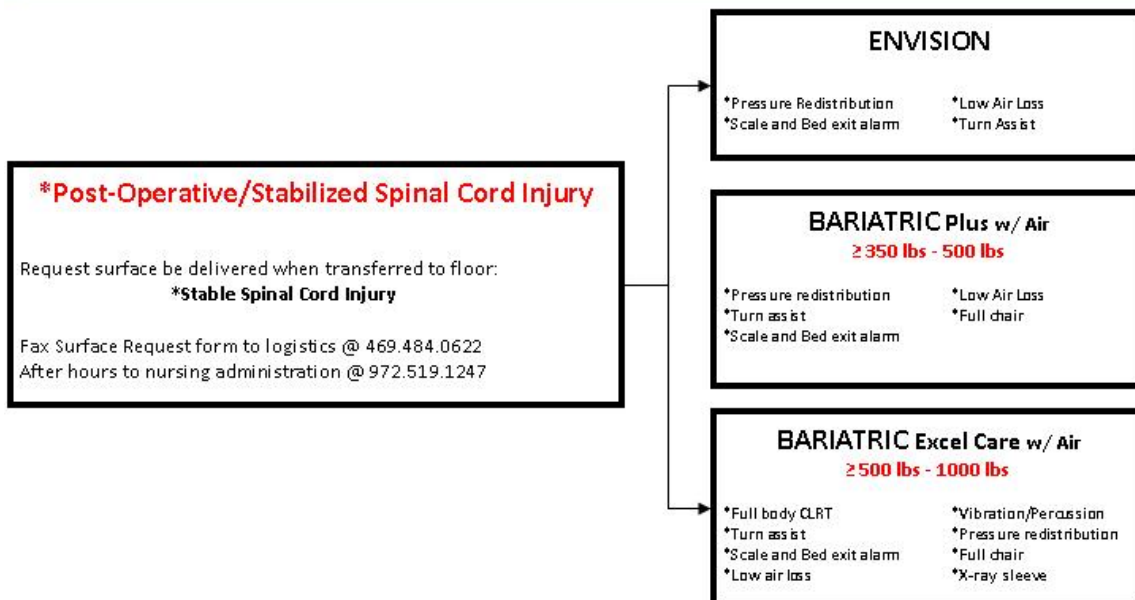
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CRITICAL CARE-SPINAL TRAUMA OPTIONS



TOWER-SPINAL TRAUMA OPTIONS





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The Medical Center of Plano

SPECIALTY SURFACE RENTAL REQUEST FORM (Revised May 2013)

Date: _____

Time: _____

Room #: _____

Patient Sticker Here or

Name: _____

I _____, have assessed this patient and have identified the need for the specialty surface selected below.

| INDICATORS | SPECIALTY SURFACE | Check Box: |
|--|---|--------------------------|
| Wound: Stage III - IV (to trunk) (Suspected) Deep Tissue Injury | P 500 | <input type="checkbox"/> |
| Paraplegia Quadraplegia | ENVISION | <input type="checkbox"/> |
| Wound: Stage III - IV (to trunk) AND NEEDS PULMONARY | TotalCare Connect <input type="checkbox"/> low air loss <input type="checkbox"/> rotation <input type="checkbox"/> vibration & percussion <input type="checkbox"/> CLRT | <input type="checkbox"/> |
| Wound: Stage I-IV 350-500 lbs | TotalCare Bariatric Plus <input type="checkbox"/> rotation <input type="checkbox"/> CLRT <input type="checkbox"/> vibration & percussion | <input type="checkbox"/> |
| Wound: Stage I-IV 500-1000 lbs | Excel Care Bariatric <input type="checkbox"/> low air loss <input type="checkbox"/> trapeze | <input type="checkbox"/> |
| Fall Risk | LOW BED Temper-Pedic Surface | <input type="checkbox"/> |
| Wound: Stage III-IV (to trunk) (Suspected) Deep Tissue Injury | LOW BED w/ P 500 Surface | <input type="checkbox"/> |
| Recent flap/graft | CLINITRON | <input type="checkbox"/> |
| Order from Trauma Team | RotoRest (KCI) | <input type="checkbox"/> |