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Owner Richard Mickelson:  
EXECUTIVE DIRECTOR  
FLIGHT AND GROUND EMS  
Area Trauma  
Applicability Billings Clinic

## Clinical Practice Guideline for Cervical Spine Management, PCECT-688

### POLICY STATEMENT:

- A. To direct the care of patients that present with traumatic injury to the cervical spine.

### DEFINITIONS:

- A. CT: Computed Tomography- is an imaging procedure that uses special x-ray equipment to create detailed pictures, or scans, of areas inside the body.
- B. T2- Thoracic vertebrae number 2.
- C. MRI: Magnetic Resonance Imaging- Magnetic resonance imaging is a medical imaging technique used in radiology to form pictures of the anatomy and the physiological processes of the body in both health and disease. MRI scanners use strong magnetic fields, magnetic field gradients, and radio waves to generate images of the organs in the body.

### PROCEDURE:

- A. Patient presents with traumatic injury involving the cervical spine.
- B. Evaluate cervical spine using either NEXUS (Exhibit A) or Canadian rules for cervical spine clearance (Exhibit B)
- C. If patient meets NEXUS/Canadian rules criteria for clearance, clear the c-spine and collar is removed by provider.
- D. Document the removal of collar by the provider.
- E. If unable to evaluate the patient using NEXUS/Canadian Rules or if there is positive

- tenderness, CT of C-spine from base of skull to T2 is performed.
- F. If CT demonstrates fracture or abnormality, a consult with neurosurgery is placed for surgical decision making.
  - G. If CT is negative for fracture or abnormality and residual neck pain/tenderness persists, physician judgement is used to determine one of the following:
    - 1. Neurosurgery consult
    - 2. MRI of C-Spine
    - 3. Place Miami J collar and follow up in 2 weeks.
  - H. Provider clinical judgement supersedes this guideline.
  - I. Cervical spine immobilization collars may be applied prior to patient presentation at Billings Clinic by outside care providers or may be applied at Billings Clinic in patients with traumatic or potential traumatic injury involving the cervical spine.
  - J. Cervical spine immobilization collars are removed only by Emergency Medicine Physicians, Physicians on the Trauma Surgery Service, Physicians or Advance Practice Providers on the Neurosurgical service, and Advance Practice Providers on the Surgical ICU service, and PGY 4/5 surgical residents.
  - K. Cervical spine immobilization collars may also be removed by other personnel in emergency situations where doing so is necessary to provide emergent or lifesaving medical care such as airway management.
  - L. The decision to remove a cervical spine immobilization collar is an integrated clinical judgement that may incorporate clinical decision rules, history, physical exam, radiologic studies, and other clinical variables. A potential algorithm to assist in this decision-making process is attached as Exhibit A.

## REFERENCES:

- A. Inaba K, Byerly S, Bush LD, Martin MJ, Martin DT, Peck KA, Barmparas G, Bradley MJ, Hazelton JP, Coimbra R, Choudhry AJ, Brown CV, Ball CG, Cherry-Bukowiec JR, Burlew CC, Joseph B, Dunn J, Minshall CT, Carrick MM, Berg GM, Demetriades D; WTA C-Spine Study Group. Cervical spinal clearance: A prospective Western Trauma Association Multi-institutional Trial. *J Trauma Acute Care Surg*. 2016 Dec;81(6):1122-1130. doi: 10.1097/TA.0000000000001194. PMID: 27438681; PMCID: PMC5121083.
- B. Mayur, B., MD et al, (2014). Cervical spine collar clearance in the obtunded adult blunt trauma patient: A systematic review and practice management guideline from the Eastern Association for the Surgery of Trauma; *Journal of Trauma and Acute Care Surgery*. Philadelphia, Wolters Kluwer Health, Volume 78, Number 2
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cervical spine injury in patients following blunt trauma: a systematic review. *CMAJ*, 184(16): E867-E876.

- F. Ciesla, D., Shatz, D., et al (2020) Western Trauma Association critical decisions in trauma: Cervical spine clearance in trauma patients; *Journal of Trauma and Acute Care Surgery*, 88(2): p 352-354
- G. Muzyka L, Bradford JM, Teixeira PG, et al. Trends in prehospital cervical collar utilization in trauma patients: Closer, but not there yet. *Acad Emerg Med*. 2024; 31: 36-41. doi:[10.1111/acem.14822](https://doi.org/10.1111/acem.14822)

**Regulatory or Accreditation Agency:** N/A

## Facility (Scope):

Billings Clinic Downtown Hospital

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### Attachments

[Exhibit A: NEXUS Criteria](#)

[Exhibit B: The Canadian C-Spine Rule](#)

### Approval Signatures

Step Description	Approver	Date
PPRC	Heidi Hanson: COMPLIANCE ANALYST I	12/2025
Policy Owner	Richard Mickelson: EXECUTIVE DIRECTOR FLIGHT AND GROUND EMS	12/2025

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### Applicability

Billings Clinic