

<b>TITLE:</b> Mandatory Transfer of Trauma Patients	<b>DEPARTMENT:</b> Clinical Services
<b>EFFECTIVE DATE:</b> 05/08/14	<b>REPLACES DATES:</b>
<b>REFERENCE:</b> PC.4.10	<b>Page</b> 1 of 2
<b>APPROVERS:</b> Trauma Nurse Coordinator ER Medical Director	

Transfer of trauma patients shall follow State of Colorado Trauma Rules and Regulations regarding consultations and inter-facility transfers as described below:

**Adult trauma patients** with the following **critical and/or high risk injuries** require a **mandatory timely transfer**

(within 6 hours after recognition of condition) to an attending trauma surgeon at a **Level I** trauma center:

**Transfer**

- Bilateral pulmonary contusions requiring nontraditional ventilation
- Multi-system trauma patient with pre-existing coagulopathy (hemophilia)
- Pelvic fractures with unrelenting hemorrhage
- Aortic tears
- Liver injuries requiring emergency surgery and requirement for with liver packing or vena cava injury
- Significant head injury (intracranial bleeding or GCS less than 13)
- Spinal cord injury with neurologic deficit
- Significant multi-system trauma as defined by:
- Head injury (intracranial bleeding or GCS less than 13) or spinal cord injury with neurologic deficit complicated by either chest and/or abdominal injuries as defined by:
- Chest injury (as part of multi-system injuries):
- Multiple rib fractures greater than 3 unilaterally or 2 bilaterally
- Traumatic Hemothorax
- Abdominal injury (as part of multi-system trauma):
- Significant intra or retro-peritoneal bleeding
- Hollow organ or solid visceral injury
- Bilateral femur fracture or posterior pelvic fracture complicated by significant chest and/or abdominal injuries as defined above
- Trauma patients requiring mechanical ventilation
- Bilateral femur fracture or posterior pelvic fracture complicated by significant chest and/or abdominal injuries as defined above.
- Life threatening complications, such as acute renal failure (creatinine greater than 2.5) or coagulopathy (twice normal value for individual facility)
- Multi system traumatically injured patient (Head, Face, Neck, Thorax, Spine, Abdomen, Extremities)
- Pregnant patients with significant trauma
- Flail Chest or more than 3 ribs fractured
- Chest injury with any underlying pulmonary (hemothorax or pulmonary contusion) or cardiac injury
- Penetrating injuries-Head or neck or proximal extremity
- Multiple open fractures in a hemodynamically unstable patient
- Extremities with neurologic compromise or vascular without vascular consultation
- Amputations above the wrist or ankle with any other concomitant major traumatic injuries.
- Any injured trauma patient requiring an ICU admission.

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- Any injured trauma patient with persistent hypotension (Systolic BP less than 90 after 2 L NS).
- Any injured trauma patient requiring more than 4 units of PRBC.
- Any injured trauma patient requiring a bedside trauma surgeon consultation or admission service

**Burn patients** with the following require a **mandatory transfer** with an attending burn surgeon at designated burn center:

**Transfer**

- 2nd and 3rd degree burns greater than 10% TBSA in patient less than 10 years old or greater than 50 years old
- 2nd and 3rd degree burns greater than 20% TBSA all other ages
- 2nd and 3rd degree burns with serious threat of functional or cosmetic impairment to face, hands, feet, genitalia, perineum and major joints
- 3rd degree burns greater than 5% TBSA in any age group
- High voltage electrical burns including lightening injuries
- Chemical burns with serious threat of functional or cosmetic impairment
- Inhalation injury with burn injury
- Circumferential burns of the extremity or chest
- Burn injury in patients with pre-existing co-morbidities that could complicate management, recovery, or affect mortality
- Burns with significant other trauma

<b>TITLE:</b> Adult Trauma Lab Panel	<b>DEPARTMENT:</b> Clinical Services
<b>EFFECTIVE DATE:</b> 03/01/13	<b>REPLACES DATES:</b>
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<b>APPROVERS:</b> Blood Bank Medical Director	Quality Management Committee

**SCOPE:**

Trauma Services, Blood Bank, Laboratory

**PURPOSE**

To order critical lab tests in adult trauma patients for patient safety.

**GENERAL COMMENTS**

1. Lab will have a representative on the Trauma Team. A phlebotomist will respond to all Trauma Team Activations. This person shall be notified of all Trauma Team Activations by pager.
2. The phlebotomist will be responsible for obtaining blood for any labs. Pre-hospital blood specimens are accepted by RMC and will be collected, labeled, and delivered to the lab by the phlebotomist responding to the Trauma Team Activation.
3. The following panels will be drawn and run unless modified by a physician.

**GUIDELINES**

**Trauma Activation Blood Labs**

1. When adult “Trauma Panel” is ordered, the following tubes will drawn:
  - 1.1. 1 tall purple tube
  - 1.2. 1 light green tube
  - 1.3. 1 short purple tube
  - 1.4. 1 blue tube
2. The following is included in an Adult Trauma Panel:
  - 2.1. CBC (purple tube)
  - 2.2. Lipase (light green tube)
  - 2.3. CMP (light green tube)
  - 2.4. Pregnancy on all females > 12 years of age (light green tube)
3. The following needs to be added if desired and ordered by ED physician:
  - 3.1. POC creatine
  - 3.2. Type and Screen (tall purple tube)

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- 3.3. Coags (blue tube)
- 3.4. UA
- 3.5. Urine toxicology
- 3.6. Lactate (gray tube on ice to RT)
- 3.7. Carboxyl 1 Hemoglobin (dark green on ice to RT)

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<b>TITLE:</b> Initial Resuscitation And Stabilization Of The Trauma Patient	<b>DEPARTMENT:</b> Clinical Services - ER
<b>EFFECTIVE DATE:</b> 02/2013	<b>REPLACES DATES:</b> NEW
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<b>APPROVERS:</b> Emergency Department Committee	Medical Executive Committee

**SCOPE:**

Emergency Department, Trauma Services

**PURPOSE:**

Systematic process for initial assessment and treatment of the trauma patient is essential for recognizing life threatening conditions, identifying injuries, and determining priorities of care, based on assessment findings.

**POLICY:**

All trauma patients will be resuscitated per the American College of Surgeons Advanced Trauma Life Support.

**PROCEDURE:**

1. Obtain and document the following on the trauma record. In the presence of life threatening injuries the objective data collection begins immediately and the subjective data is limited to a brief statement.
  - 1.1. Time of incident
  - 1.2. Mechanism of injury
  - 1.3. Treatment and response prior to arrival at the clinic
  - 1.4. Prior medical history
    - 1.4.1. Allergies
    - 1.4.2. Current medications
    - 1.4.3. Immunizations
    - 1.4.4. Past surgeries
    - 1.4.5. Any ongoing disease process
2. Perform Primary Assessment: Place patient on pulse oximeter
  - 2.1. Airway
    - 2.1.1. Assess and maintain a patient airway, observe for foreign bodies, fluids, edema, and stridor, drooling and soft tissue damage. Simultaneously maintain head in midline neutral position- Spine stabilization with a rigid collar. Clear the airway if obstructed-DO NOT HYPEREXTEND NECK-use jaw thrust/chin lift, remove debris/suction. Place oral or nasal airway as needed. Perform intubation or surgical airway as needed.
  - 2.2. Breathing
    - 2.2.1. Assess and maintain breathing, assess for the spontaneous breathing, chest rise (depth and symmetry), skin color, rate, integrity of chest wall, use of accessory muscles, bilateral breath sounds -anterior and laterally.
    - 2.2.2. If breathing is present and effective: administer Oxygen (O<sub>2</sub>) via NRB mask at 12-15 liters.
    - 2.2.3. If breathing is ineffective: administer O<sub>2</sub> via (Non Re-breather) NRB and prepare for intubation.

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- 2.2.4.If breathing is absent: ventilate with BVM at 100% O2, prepare for intubation.
3. Life threatening injuries that require immediate interventions:
    - 3.1. Tension Pneumothorax -signs and symptoms of chest pain, tachypnea, achycardia, respiratory distress, unilateral hyper-resonance, decreased or absent breath sounds with hypotension or tracheal deviation.
      - 3.1.1.Treatment: needle thoracostomy(14g 2” needle placed at midclavicular line 2nd intercostals space over the 3rd rib) or immediate chest tube insertion.
    - 3.2. Sucking chest wound / Open Pneumothorax
      - 3.2.1.Treatment: Place a 3 sided nonporous dressing over wound. If signs and symptoms of tension pneumothorax occur, remove dressing immediately and notify the physician and prepare for chest tube insertion.
    - 3.3. Flail chest with severe respiratory compromise-associated with pulmonary contusions.
      - 3.3.1.Treatment: Support ventilation with early intubation. Consider restriction of fluids if no sign of hypovolemic shock.
    - 3.4. Hemothorax
      - 3.4.1.Treatment: Prepare for chest tube insertion.
    - 3.5. Uncontrolled external bleeding:
      - 3.5.1.Treatment: Apply direct pressure over arterial pressure points and wound if possible.
  4. Circulation
    - 4.1. Assess pulse for quality and rate peripherally, if inadequate, assess centrally.
    - 4.2. Inspect and feel skin for color, temperature and degree of diaphoresis
    - 4.3. Inspect for signs of external bleeding
    - 4.4. Baseline BP and assess serial VS as directed by the patient’s condition.
    - 4.5. Draw baseline labs when placing first line if possible.
    - 4.6. Shock:
      - 4.6.1.Establish two large bore IV’s, 14-16g if possible for adults and age appropriate sizes for pediatrics, use warmed crystalloids, large bore tubing, short extension tubing, consider cut down or interosseous access if unable to obtain peripheral access.
    - 4.7. Pericardial Tamponade :
      - 4.7.1.Signs and Symptoms of dyspnea, cyanosis, distended neck veins, hypotension, muffled heart sounds and symptoms of shock. Prepare for and assist with pericardiocentesis.
  5. Neurological Examination
    - 5.1. After primary assessment do a brief neurological exam including a Glasgow Coma Scale and papillary response.
    - 5.2. Secondary assessment :
      - 5.2.1.Completed after the primary assessment; it consists of a brief and thorough, systematic examination to determine all injuries and prioritize further care.
      - 5.2.2.Any additional subjective data should be gathered at this time.
      - 5.2.3.Complete the head to toe assessment including inspection of the posterior surface-maintain C-Spine immobilization by logrolling the patient.

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5.2.4. Clothing should be removed if not done so during the primary assessment. Clothing is cut off when:

- 5.2.4.1. Time is a critical factor
- 5.2.4.2. Patient is unstable
- 5.2.4.3. There is an impaled object through the clothing
- 5.2.4.4. There is a massive extremity fracture
- 5.2.4.5. If a spinal injury is suspected
- 5.2.4.6. The potential exists for additional injury or severe pain when attempting to remove clothing is encountered.
- 5.2.4.7. Once clothing is removed, cover the patient to prevent heat loss, use warm blankets, radiant warmer, and use warm fluids for volume replacement.

5.3. Additional Interventions:

- 5.3.1. If not done previously: Attach patient to cardiac monitor and pulse ox and oxygen.
- 5.3.2. Large bore IV's and Labs.
- 5.3.3. Gastric Tube: Consider at direction of physician. Avoid NG with signs of facial trauma.
- 5.3.4. Radiological studies: C-spine, Chest x-ray, Pelvis and other films as indicated.

5.4. Complete a more focused exam on areas of injuries noted in the secondary assessment.

5.5. Medications as per physician orders

5.6. On-going assessment and evaluation of the patient's status to include:

- 5.6.1. Airway patency
- 5.6.2. Breathing effectiveness
- 5.6.3. Oxygen saturation
- 5.6.4. Level of consciousness
- 5.6.5. Skin temperature and color
- 5.6.6. Vital signs
- 5.6.7. Urinary output**

## RESOURCES:

### Algorithm Bibliography

1. Advanced Trauma Life Support For Doctors 9<sup>th</sup> Ed. by the American College of Surgeons. Chicago, Illinois Chapter 1. Initial Assessment and Management.
2. Advanced Trauma Life Support For Doctors 9<sup>th</sup> Ed. by the American College of Surgeons. Chicago, Illinois Chapter 2 Airway and Ventilatory Management
3. Advanced Trauma Life Support For Doctors 9<sup>th</sup> Ed. by the American College of Surgeons. Chicago, Illinois Chapter 5 Abdominal Trauma.
4. Advanced Trauma Life Support For Doctors 9<sup>th</sup> Ed. by the American College of Surgeons. Chicago, Illinois Chapter 8 Musculoskeletal Trauma
5. Trauma 4<sup>th</sup> edition by Mattox, Feliciano, and Moore McGraw Hill Publishing Chapter 9. Initial Assessment.

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6. Trauma 4th edition by Mattox, Feliciano, and Moore McGraw Hill Publishing Chapter 10 Airway Control
7. Trauma 4th edition by Mattox, Feliciano, and Moore McGraw Hill Publishing Chapter 28. Abdominal Trauma, Including Indications for Celiotomy.
8. Trauma 4th edition by Mattox, Feliciano, and Moore McGraw Hill Publishing Chapter 30 Liver and Biliary Tract Trauma.
9. Trauma 4th edition by Mattox, Feliciano, and Moore McGraw Hill Publishing Chapter 31 Injury to the Spleen
10. Trauma 4th edition by Mattox, Feliciano, and Moore McGraw Hill Publishing Chapter 36 Pelvic Fractures
11. Trauma 4th edition by Mattox, Feliciano, and Moore McGraw Hill Publishing Chapter 42 Lower-Extremity Fractures and Dislocations
12. OTA-AAST Pelvic Fracture Symposium 2000. San Antonio Texas.
13. Nonoperative management of adult blunt hepatic trauma in a municipal trauma center. Hammond JC, Canal DF, Brodie TA. Am Surg 1992 Sep;58(9) 551-5.

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<b>TITLE:</b> Inter-facility Consultation and Transfer of the Adult Trauma Patient	<b>DEPARTMENT:</b> Clinical Services
<b>EFFECTIVE DATE:</b> 3/1/2013	<b>REPLACES DATES:</b> NEW
<b>REFERENCE:</b> PC.01.01.01	<b>Page</b> 1 of 4
<b>APPROVERS:</b> Emergency Department Committee	Quality Management Committee

**SCOPE:**

All departments caring for adult (Age 15 and older) traumatically injured patients requiring consultation with and/or potential transfer to a higher-level trauma center as defined by the most current State Trauma Rules and Regulations Chapter Two effective 03/02/11.

**PURPOSE:**

To ensure that optimal care is given to the traumatically injured patient at the appropriate level of care.

**POLICY:**

Patients requiring a higher level of trauma care as identified by the State Trauma Rules and Regulations and the Mile-High RETAC may be transported by air or ground, as appropriate for conditions and at the discretion of the Emergency Department Physician, after phone consultation with an attending trauma surgeon at a higher-level trauma or specialty center (i.e. Burn Center)

**PROCEDURE:**

1. The Emergency Department Physician should evaluate all patients meeting CDPHE Trauma inter-facility consultation and/or transfer criteria.
2. The Emergency Physician shall contact the accepting hospital Emergency Physician to give a detailed report regarding the transfer of the trauma patient.
3. Consultation will occur between the Emergency Department Physician and an attending Trauma Surgeon (who is a member of the attending staff) at the receiving facility. The Emergency Department Physician will include written documentation of the consultation to include the name of the receiving trauma surgeon, any discussion related to additional diagnostic/therapeutic issues, availability of resources, weather conditions, transfer mode, and any disagreements as to the patient disposition.
4. All appropriate transfer paperwork shall be completed in accordance with facility and EMTALA requirements.
5. Transfer of trauma patients shall follow State of Colorado Trauma Rules and Regulations regarding consultations and inter-facility transfers as described below:
  - 5.1. **Adult trauma patients** with the following **critical injuries** require a **mandatory timely transfer** (but within 6 hours after recognition of condition) to an attending trauma surgeon at a **Level I** trauma center:
    - 5.1.1. Bilateral pulmonary contusions requiring nontraditional ventilation
    - 5.1.2. Multi-system trauma patient with pre-existing coagulopathy (hemophilia)
    - 5.1.3. Pelvic fractures with unrelenting hemorrhage
    - 5.1.4. Aortic tears
    - 5.1.5. Liver injuries requiring emergency surgery and requirement for with liver packing or vena cava injury

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- 5.2. **Adult trauma patients** with the following **high risk injuries** require a **mandatory transfer** to an attending trauma surgeon at a level I or II trauma center within 6 hours after recognition of the condition:
- 5.2.1. Significant head injury (intracranial bleeding or GCS less than 13)
  - 5.2.2. Spinal cord injury with neurologic deficit
  - 5.2.3. Significant multi-system trauma as defined by:
    - 5.2.3.1. Head injury (intracranial bleeding or GCS less than 13) or spinal cord injury with neurologic deficit complicated by either chest and/or abdominal injuries as defined by:
      - 5.2.3.2. Chest injury (as part of multi-system injuries):
        - 5.2.3.2.1. Multiple rib fractures greater than 3 unilaterally or less than bilaterally
        - 5.2.3.2.2. Hemothorax
      - 5.2.3.3. Abdominal injury (as part of multi-system trauma):
        - 5.2.3.3.1. Significant intra or retro-peritoneal bleeding
        - 5.2.3.3.2. Hollow organ or solid visceral injury
    - 5.2.3.2. Bilateral femur fracture or posterior pelvic fracture complicated by significant chest and/or abdominal injuries as defined above
    - 5.2.3.3. Trauma patients requiring mechanical ventilation
    - 5.2.3.4. Bilateral femur fracture or posterior pelvic fracture complicated by significant chest and/or abdominal injuries as defined above.
    - 5.2.3.5. Life threatening complications, such as acute renal failure (creatinine greater than 2.5) or coagulopathy (twice normal value for individual facility)
  - 5.3. **Burn patients** with the following require a **mandatory transfer** with an attending burn surgeon at designated burn center:
    - 5.3.1. 2nd and 3rd degree burns greater than 10% TBSA in patient less than 10 years old or greater than 50 years old
    - 5.3.2. 2nd and 3rd degree burns greater than 20% TBSA all other ages
    - 5.3.3. 2nd and 3rd degree burns with serious threat of functional or cosmetic impairment to face, hands, feet, genitalia, perineum and major joints
    - 5.3.4. 3rd degree burns greater than 5% TBSA in any age group
    - 5.3.5. High voltage electrical burns including lightning injuries
    - 5.3.6. Chemical burns with serious threat of functional or cosmetic impairment
    - 5.3.7. Inhalation injury with burn injury
    - 5.3.8. Circumferential burns of the extremity or chest
    - 5.3.9. Burn injury in patients with pre-existing co-morbidities that could complicate management, recovery, or affect mortality
    - 5.3.10. Burns with significant other trauma
  - 5.4. Any trauma patient who is significantly injured **requires mandatory consultation within 6 hours** with an attending trauma surgeon at a level I or II trauma center, **for serious consideration of transfer to higher level of care including the following:**

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- 5.4.1. Multi system traumatically injured patient (Head, Face, Neck, Thorax, Spine, Abdomen, Extremities)
- 5.4.2. Pregnant patients with significant trauma
- 5.4.3. Flail Chest or more than 3 ribs fractured
- 5.4.4. Chest injury with any underlying pulmonary (hemothorax or pulmonary contusion) or cardiac injury
- 5.4.5. Penetrating injuries-Head or neck or proximal extremity
- 5.4.6. Multiple open fractures in a hemodynamically unstable patient
- 5.4.7. Extremities with neurologic compromise or vascular without vascular consultation
- 5.4.8. Amputations above the wrist or ankle with any other concomitant major traumatic injuries.
- 5.4.9. Any injured trauma patient requiring an ICU admission.
- 5.4.10. Any injured trauma patient with persistent hypotension (Systolic BP less than 90 after 2 L NS).
- 5.4.11. Any injured trauma patient requiring more than 4 units of PRBC.
- 5.4.12. Any injured trauma patient requiring mechanical ventilation.
- 5.4.13. Any injured trauma patient requiring a bedside trauma surgeon consultation or admission service.
- 5.4.14. Falls greater than 20 feet.
- 5.4.15. Auto crashes with significant vehicle body damage.
- 5.4.16. Significant motorcycle crashes.
- 5.4.17. All terrain vehicle (ATV) crashes.
- 5.5. Appropriate Levels of Transfer—The following are appropriate Level I or Level II destinations for trauma patient being transferred from Rose Medical Center:
  - 5.5.1. Denver Health Medical Center (Level I)
  - 5.5.2. Saint Anthony Central Hospital (Level I)
  - 5.5.3. Swedish Medical Center (Level I with pediatric commitment)
  - 5.5.4. Littleton Hospital (Level II)
  - 5.5.5. The Medical Center of Aurora (Level II)
  - 5.5.6. University Hospital (Level II and Designated Burn Center)
- 5.6. Rehabilitation Transfers—consider transfer of trauma patient to a specialized rehabilitation center if condition warrants and patient no longer requires the services of a trauma center—the following are specialized rehabilitation centers for trauma patients being transferred from Rose Medical Center:
  - 5.6.1. Spalding Rehabilitation Hospital
  - 5.6.2. Craig Rehabilitation Hospital
- 5.7. Mode of transport - The appropriate mode of transport (air or ground) will be determined by the Emergency Physician and based on patient condition, accepting Trauma Surgeon consultation/request, weather and availability or the benefits outweigh the risks etc. All critical and high-risk injuries as outlined in the State of Colorado Trauma Rules and Regulations will be

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considered for air transport unless patient condition and documentation supports appropriate alternative methods. All transports will be done through HealthONE AIRLIFE communication center.

5.7.1. A call will be made to 1-877-593-3482 or 303-360-3400 and the dispatcher will assist in arranging appropriate transportation in collaboration with the Emergency Physician/Trauma Surgeon.

5.7.2. In the event that AIRLIFE is unable to provide transportation, the communication center will make arrangements with another agency for the next available mode to transport.

5.8. All transfers into and out of Rose Medical Center will be reviewed

**RESOURCES:**

- Colorado Department of Public Health and Environment; Health Facilities and
- Emergency Medical Services Division 6 CCR 1015-4; State Board of Health Rules pertaining to the statewide emergency medical and trauma care system, Chapter Two;
- <http://www.cdphe.state.co.us/regulations/ems/101504regionalemergencymedicaltraumachapter2.pdf>; March 2<sup>nd</sup>, 2013.

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<b>TITLE:</b> Inter-facility Consultation and Transfer of the Pediatric Trauma Patient	<b>DEPARTMENT:</b> Clinical Services
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<b>APPROVERS:</b> Emergency Department Committee	Quality Management Committee

**SCOPE:**

All departments caring for pediatric (Age 14 and younger) traumatically injured patients requiring consultation with and/or potential transfer to a higher-level trauma center as defined by the most current CDPHE Trauma Rules and Regulations Chapter Two effective 03/02/11.

**PURPOSE:**

To ensure that optimal care is given to the traumatically injured patient at the appropriate level of care.

**POLICY:**

Patients requiring a higher level of trauma care as identified by the CDPHE Trauma Rules and Regulations and the Mile-High RETAC may be transported by air or ground, as appropriate for conditions and at the discretion of the Emergency Department Physician, after phone consultation with an attending trauma surgeon at a higher-level trauma or specialty center (i.e. Burn Center)

**DEFINITION:**

1. **“Critical Injuries”** are defined as the following:
  - 1.1. Bilateral pulmonary contusions requiring non-traditional ventilation
  - 1.2. Multi-system trauma with preexisting or life threatening coagulopathy
  - 1.3. Pelvic fractures with unrelenting hemorrhage
  - 1.4. Aortic tears
  - 1.5. Liver injuries with vena cava injury or requiring emergency surgery with liver packing
  - 1.6. Coma for longer than 6 hours or with focal neurologic deficit
2. **“High Risk injuries”** are defined as the following:
  - 2.1. Penetrating injuries to head, neck, torso, or proximal extremities
  - 2.2. Mechanical ventilation of greater than 16 hours
  - 2.3. Persistent in-hospital evidence of physiologic compromise including: tachycardia relative to age plus signs of poor perfusion (i.e. capillary refill greater than 2 seconds, cool extremities, decreased pulses, altered mental status, or respiratory distress), hypotension
  - 2.4. Hemodynamically stable children with documented visceral injury admitted for “observational” management and requiring blood transfusion or fluids greater than 40 mL/kg.
  - 2.5. Injury Severity Score greater than and/or equal to 9, including, but not limited to:
    - 2.5.1. Multi-system blunt injuries (more than 2 systems)
    - 2.5.2. Pelvic or long bone fractures in conjunction with multi-system injuries
    - 2.5.3. Altered mental status (**GCS less than 13**) with significant trauma.
3. **“High Risk Mechanisms”** are defined as any of the following high energy transfer mechanisms:
  - 3.1. Falls greater than 20 feet
  - 3.2. Auto crashes with significant vehicle body damage
  - 3.3. Significant motorcycle crashes

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3.4. All terrain vehicle (ATV) crashes

**PROCEDURE:**

1. The Emergency Department Physician should evaluate all patients meeting State of Colorado Trauma inter-facility consultation and/or transfer criteria.
2. The Emergency Physician shall contact the accepting hospital Emergency Physician to give a detailed report regarding the transfer of the trauma patient.
3. Consultation will occur between the Emergency Department Physician and an attending Trauma Surgeon (who is a member of the attending staff) at the receiving facility. The Emergency Department Physician will include written documentation of the consultation to include the name of the receiving trauma surgeon, any discussion related to additional diagnostic/therapeutic issues, availability of resources, weather conditions, transfer mode, and any disagreements as to the patient disposition.
4. All appropriate transfer paperwork shall be competed in accordance with facility and EMTALA requirements.
5. Transfer of trauma patients shall follow State of Colorado Trauma Rules and Regulations regarding consultations and inter-facility transfers as described below:
  - 5.1. **Trauma patients greater than 12 years old** with the following **critical injuries** require a **mandatory timely transfer** (but within 6 hours after recognition of condition) to an attending trauma surgeon at a Level I trauma center:
    - 5.1.1. Bilateral pulmonary contusions requiring nontraditional ventilation
    - 5.1.2. Multi-system trauma patient with pre-existing coagulopathy (hemophilia)
    - 5.1.3. Pelvic fractures with unremitting hemorrhage
    - 5.1.4. Aortic tears
    - 5.1.5. Liver injuries requiring emergency surgery and requirement for with liver packing or vena cava injury
  - 5.2. **Trauma patients greater than 12 years old** with the following **high risk injuries** require a **mandatory transfer** to an attending trauma surgeon at a level I or II trauma center within 6 hours after recognition of the condition:
    - 5.2.1. Significant head injury (**intracranial bleeding or GCS less than 13**)
    - 5.2.2. Spinal cord injury with neurologic deficit
    - 5.2.3. Significant multi-system trauma as defined by:
      - 5.2.3.1. Head injury (**intracranial bleeding or GCS less than 13**) or spinal cord injury with neurologic deficit complicated by either chest and/or abdominal injuries as defined by Chest injury (as part of multi-system injuries):
        - 5.2.3.1.1. Multiple rib fractures greater than 3 unilaterally or greater than 2 bilaterally
        - 5.2.3.1.2. Hemothorax
      - 5.2.3.2. Abdominal injury (as part of multi-system trauma):
        - 5.2.3.2.1. Significant intra or retro-peritoneal bleeding

<b>TITLE:</b> Inter-facility Consultation and Transfer of the Pediatric Trauma Patient	<b>DEPARTMENT:</b> Clinical Services
<b>EFFECTIVE DATE:</b> 3/1/2013	<b>REPLACES DATES:</b> NEW
<b>REFERENCE:</b> PC.01.01.01	<b>Page</b> 3 of 6
<b>APPROVERS:</b> Emergency Department Committee	Quality Management Committee

- 5.2.3.2.2. Hollow organ or solid visceral injury
- 5.2.3.3. Bilateral femur fracture or posterior pelvic fracture complicated by significant chest and/or abdominal injuries as defined above
- 5.2.3.4. Trauma patient requiring mechanical ventilation)
- 5.2.3.5. Life - threatening complications, such as acute renal failure (creatinine greater than 2.5) or coagulopathy (twice normal value for individual facility)
- 5.3. **Pediatric trauma patients age 0-5 years**, with the following **critical injuries** require **mandatory transfer**, with prior consultation, to a Regional Pediatric Trauma Center (RPTC) within 6 hours after recognition of condition. If such a center is not available, then transfer will be to a Level I with pediatric commitment, and if center still not available, to a Level II with pediatric commitment:
  - 5.3.1. Bilateral pulmonary contusions requiring non-traditional ventilation
  - 5.3.2. Multi-system trauma patient with pre-existing or life threatening coagulopathy (hemophilia)
  - 5.3.3. Pelvic fractures with unrelenting hemorrhage
  - 5.3.4. Aortic tears
  - 5.3.5. Liver injuries with vena cava injury or requiring emergency surgery with liver packing
  - 5.3.6. Coma for longer than 6 hours or with focal neurologic deficit
- 5.4. **Pediatric trauma patients age 6-12 years**, with the above listed **critical injuries**, and **pediatric trauma patients age 0-12 years**, with the following **high-risk injuries**, require **mandatory transfer** with an attending surgeon at a RPTC or Level I with pediatric commitment, within 6 hours after recognition of condition, for consideration of transfer:
  - 5.4.1. Penetrating injuries to the head, neck, torso or proximal extremities
  - 5.4.2. Mechanical ventilation of greater than 16 hours
  - 5.4.3. Persistent in-hospital evidence of physiologic compromise including: tachycardia relative to age plus signs of poor perfusion (capillary refill greater than 2 seconds, cool extremities, decreased pulses, altered mental status or respiratory distress), hypotension.
  - 5.4.4. Hemodynamically stable children with documented visceral injury admitted for “observational management” and requiring blood transfusion or fluids greater than 40 mL/kg
  - 5.4.5. ISS greater than and/or equal to 9, including but not limited to:
    - 5.4.5.1. Multi-system blunt injuries (greater than 2 systems)
    - 5.4.5.2. Pelvic or long bone fractures in conjunction with multi-system injuries
    - 5.4.5.3. Altered mental status (**GCS less than 13**) with significant trauma
  - 5.4.6. Multiple rib fractures greater than 3 unilaterally or less than bilaterally
  - 5.4.7. Hemothorax
  - 5.4.8. Abdominal injury (as part of multi-system trauma):
    - 5.4.8.1.1. Significant intra or retro-peritoneal bleeding
    - 5.4.8.1.2. Hollow organ or solid visceral injury

<b>TITLE:</b> Inter-facility Consultation and Transfer of the Pediatric Trauma Patient	<b>DEPARTMENT:</b> Clinical Services
<b>EFFECTIVE DATE:</b> 3/1/2013	<b>REPLACES DATES:</b> NEW
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<b>APPROVERS:</b> Emergency Department Committee	Quality Management Committee

- 5.4.8.1.3. Bilateral femur fracture or posterior pelvic fracture complicated by significant chest and/or abdominal injuries as defined above
- 5.4.8.1.4. Trauma patients requiring mechanical ventilation
- 5.4.8.1.5. Bilateral femur fracture or posterior pelvic fracture complicated by significant chest and/or abdominal injuries as defined above
- 5.4.8.1.6. Life threatening complications, such as acute renal failure (creatinine greater than 2.5) or coagulopathy (twice normal value for individual facility)

**5.5 Burn patients** with the following require a **mandatory transfer** with an attending burn surgeon at designated burn center:

- 5.4.9.2nd and 3rd degree burns greater than 10% TBSA in patient less than 10 years old
- 5.4.10. 2nd and 3rd degree burns greater than 20% TBSA all other ages
- 5.4.11. 2nd and 3rd degree burns with serious threat of functional or cosmetic impairment to face, hands, feet, genitalia, perineum and major joints
- 5.4.12. 3rd degree burns greater than 5% TBSA in any age group
- 5.4.13. High voltage electrical burns including lightening injuries
- 5.4.14. Chemical burns with serious threat of functional or cosmetic impairment
- 5.4.15. Inhalation injury with burn injury
- 5.4.16. Circumferential burns of the extremity or chest
- 5.4.17. Burn injury in patients with pre-existing co-morbidities that could complicate management, recovery, or affect mortality
- 5.4.18. Burns with significant other trauma

**5.6 Any trauma patient who is significantly injured requires mandatory consultation within 6 hours** with an attending trauma surgeon at a level I or II trauma center, **for serious consideration of transfer to higher level of care including the following:**

- 5.6.1 Multi system traumatically injured patient (Head, Face, Neck, Thorax, Spine, Abdomen, Extremities)
- 5.6.2 Pregnant patients with significant trauma
- 5.6.3 Flail Chest or more than 3 ribs fractured
- 5.6.4 Chest injury with any underlying pulmonary (hemothorax or pulmonary contusion) or cardiac injury
- 5.6.5 Penetrating injuries-Head or neck or proximal extremity
- 5.6.6 Multiple open fractures in a hemodynamically unstable patient
- 5.6.7 Extremities with neurologic compromise or vascular without vascular consultation
- 5.6.8 Amputations above the wrist or ankle with any other concomitant major traumatic injuries.
- 5.6.9 High spinal cord trauma with paralysis or neurological deficit with any other concomitant major traumatic injuries.
- 5.6.10 Pediatric patients with loss of consciousness longer than 2 minutes.
- 5.6.11 Any injured trauma patient requiring an ICU or PICU admission.

<b>TITLE:</b> Inter-facility Consultation and Transfer of the Pediatric Trauma Patient	<b>DEPARTMENT:</b> Clinical Services
<b>EFFECTIVE DATE:</b> 3/1/2013	<b>REPLACES DATES:</b> NEW
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<b>APPROVERS:</b> Emergency Department Committee	Quality Management Committee

- 5.6.12 Any injured trauma patient with persistent hypotension (less than 1 year: Systolic BP less than 60; 1-9 years: Systolic BP less than 70 + (2 x age); greater than and equal to 10 years of age: Systolic BP less than 90, after two, 20mL/kg boluses of NS).
- 5.6.13 Any injured trauma patient requiring more than 40mL/kg or 4 units of PRBC.
- 5.6.14 Any injured trauma patient requiring mechanical ventilation.
- 5.6.15 Any injured trauma patient requiring a bedside trauma surgeon consultation or admission service.
- 5.7 Appropriate Levels of Transfer—The following are appropriate Level I or Level II destinations for trauma patient being transferred from Rose Medical Center:
  - 5.7.1 The Children’s Hospital (Level I Regional Pediatric Trauma Center, designated pediatric burn center)
  - 5.7.2 Denver Health Medical Center (Level I)
  - 5.7.3 Saint Anthony Central Hospital (Level I)
  - 5.7.4 Swedish Medical Center (Level I)
  - 5.7.5 Littleton Hospital (Level II)
  - 5.7.6 The Medical Center of Aurora (Level II)
  - 5.7.7 University Hospital (Level II and Designated Burn Center)
- 5.8 Rehabilitation Transfers—consider transfer of trauma patient to a specialized rehabilitation center if condition warrants and patient no longer requires the services of a trauma center—the following are specialized rehabilitation centers for trauma patients being transferred from Rose Medical Center:
  - 5.8.1 Spalding Rehabilitation Hospital
  - 5.8.2 Craig Rehabilitation Hospital
  - 5.8.3 The Children’s Hospital (pediatric)
- 5.9 Mode of transport - The appropriate mode of transport (air or ground) will be determined by the Emergency Physician and based on patient condition, accepting Trauma Surgeon consultation/request, weather and availability or the benefits outweigh the risks etc. All critical and high-risk injuries as outlined in the State of Colorado Trauma Rules and Regulations will be considered for air transport unless patient condition and documentation supports appropriate alternative methods. All transports will be done through HealthONE AIRLIFE communication center.
  - 5.9.1 A call will be made to 1-877-593-3482 or 303-360-3400 and the dispatcher will assist in arranging appropriate transportation in collaboration with the Emergency Physician/Trauma Surgeon.
  - 5.9.2 In the event that AIRLIFE is unable to provide transportation, the communication center will make arrangements with another agency for the next available mode to transport.
- 5.10 All transfers into and out of Rose Medical Center will be reviewed

<b>TITLE:</b> Inter-facility Consultation and Transfer of the Pediatric Trauma Patient	<b>DEPARTMENT:</b> Clinical Services
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<b>APPROVERS:</b> Emergency Department Committee	Quality Management Committee

**RESOURCES:**

- Colorado Department of Public Health and Environment; Health Facilities and
- Emergency Medical Services Division 6 CCR 1015-4; State Board of Health Rules pertaining to the statewide emergency medical and trauma care system, Chapter Two;
- <http://www.cdphe.state.co.us/regulations/ems/101504regionalemergencymedicaltraumachapter2.pdf>; March 2<sup>nd</sup>, 2013.

<END 13>

<b>TITLE:</b> Pediatric Trauma Lab Panel	<b>DEPARTMENT:</b> Clinical Services
<b>EFFECTIVE DATE:</b> 03/01/13	<b>REPLACES DATES:</b>
<b>REFERENCE:</b> PC.4.10	<b>Page</b> 1 of 2
<b>APPROVERS:</b> Blood Bank Medical Director	Quality Management Committee

**SCOPE:**

Trauma Services, Blood Bank, Laboratory

**PURPOSE**

To order critical lab tests in pediatric trauma patients for patient safety.

**GENERAL COMMENTS**

1. Lab will have a representative on the Trauma Team. A phlebotomist will respond to all Trauma Team Activations. This person shall be notified of all Trauma Team Activations by pager.
2. The phlebotomist will be responsible for obtaining blood for any labs. Pre-hospital blood specimens are accepted by RMC and will be collected, labeled, and delivered to the lab by the phlebotomist responding to the Trauma Team Activation.
3. The following panels will be drawn and run unless modified by a physician.

**GUIDELINES**

**1. Trauma Activation Blood Labs**

- 1.1. When pediatric “Trauma Panel” is ordered, the following tubes will drawn in the following order:
  - 1.1.1.1 tall purple tube
  - 1.1.2.1 light green tube
  - 1.1.3.1 short purple tube
  - 1.1.4.1 blue tube
- 1.2. The following is included in an Pediatric Trauma Panel:
  - 1.2.1.CBC (purple tube)
  - 1.2.2.CMP (light green tube)
  - 1.2.3.Pregnancy on all females > 12 years of age (light green tube)
- 1.3. The following needs to be added if desired and ordered by ED physician:
  - 1.3.1.Type and Screen (tall purple tube)
  - 1.3.2.Lipase (light green tube)
  - 1.3.3.LFT (light green tube)

<b>TITLE:</b> Pediatric Trauma Lab Panel	<b>DEPARTMENT:</b> Clinical Services
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<b>APPROVERS:</b> Blood Bank Medical Director	Quality Management Committee

1.3.4.Coags (blue tube)

1.3.5.UA

1.3.6.Urine toxicology

1.3.7.Lactate (gray tube on ice to RT)

1.3.8.Carboxyl 1 Hemoglobin (dark green on ice to RT)

<END13>

<b>TITLE:</b> CME for Participating in Trauma Care	<b>DEPARTMENT:</b> Medical Staff
<b>EFFECTIVE DATE:</b> 03/2013	<b>REPLACES DATES:</b> NEW
<b>REFERENCE:</b> MS.06.01.01, MS.06.01.03, MS.12.01.01	<b>Page</b> 1 of 2
<b>APPROVERS:</b> Emergency Department Committee	Medical Executive Committee

**SCOPE:**

Emergency Department medical staff and physician extenders.

**PURPOSE**

To promote education among physicians with regard to caring for the trauma patient.

**GUIDELINES**

1. Guidelines for inclusion of Continuing Medical Education (CME) as “trauma related”
2. CME requirements are 10 per year and 30 within 36 months of the next State site review.
3. In general, CMEs are based on the number of topics that are trauma-related or are integral for the care of the injured patient as it relates to a particular specialty.
4. CME certificates that specifically state the amount of trauma-related CME will be accepted for said value.
5. CME offerings deemed “trauma related” are as follows:
  - 5.1. Orthopedics – all topics related to the care of a patient within this specialty
  - 5.2. Emergency Medicine – one half of all topics related to the care of a patient within this specialty (i.e. ED physicians are given full credit for a trauma-related class but only ½ credit for classes that are related to the general management of an ED patient)
  - 5.3. Airway and airway adjuncts
  - 5.4. Resuscitation, drugs related to and measures used in resuscitation
  - 5.5. Fluid management and blood products
  - 5.6. Sports injuries
  - 5.7. Nuclear, biological or chemical warfare and terrorism
  - 5.8. Diagnostics and adjuncts used in trauma including ultrasound, stealth, MRI, and scopes
  - 5.9. Epidemiology
  - 5.10. Pain management
  - 5.11. Invasive and non-invasive monitoring
  - 5.12. Non-accidental trauma
  - 5.13. Warming measures
  - 5.14. Hemodynamics
  - 5.15. ATLS, ACLS, BLS, PALS

<b>TITLE:</b> CME for Participating in Trauma Care	<b>DEPARTMENT:</b> Medical Staff
<b>EFFECTIVE DATE:</b> 03/2013	<b>REPLACES DATES:</b> NEW
<b>REFERENCE:</b> MS.06.01.01, MS.06.01.03, MS.12.01.01	<b>Page</b> 2 of 2
<b>APPROVERS:</b> Emergency Department Committee	Medical Executive Committee

- 5.16. All conferences present by the Rose Medical Center Trauma Service or an affiliated EMS & Trauma Service
- 5.17. One-half of certificate-stated CMEs will be given for the following:
- 5.18. Certificates for non-specific topics where an agenda is not attached (i.e. winter spine meeting)
- 5.19. Board prep classes
- 5.20. NO credits will be given for the following:
- 5.21. Specialty board certification or recertification exams (oral or written)
- 5.22. Fellowships
- 5.23. Preceptorships

## 6. Presentations

- 6.1. Formal trauma related continuing education presentations for pre-hospital, nursing or ancillary staff as approved by the Trauma Medical Director and facilitated through the EMS or education department will be considered as 2 CMEs per presentation with no more than 6 CMEs being given per calendar year
- 6.2. The following topics (but not limited to) are NOT considered to be “trauma related” (unless specifically stated or designated as trauma related):
- 6.3. Legal issues
- 6.4. EMTALA
- 6.5. Documentation
- 6.6. Medical co-morbid
- 6.7. COPIC
- 6.8. CMEs are pro-rated for physicians that start mid-year.
- 6.9. All CME documentation must be submitted to the TNC for review and tracking.

## 7. Rose Non-Emergency Department Physicians

- 7.1. Specialty and sub-specialty physicians at Rose Medical Center who care for trauma patients are encouraged to partake in trauma related CMEs as part of their requirement of twenty CMEs every two years.

<b>TITLE:</b> Trauma Radiology: Adult and Pediatric	<b>DEPARTMENT:</b> Clinical Services
<b>EFFECTIVE DATE:</b> 04/05/13	<b>REPLACES DATES:</b> NEW
<b>REFERENCE:</b> PC.02.01.03	<b>Page</b> 1 of 2
<b>APPROVERS:</b> Radiology Medical Director Trauma Committee	Quality Management Committee

**SCOPE:**

Trauma patients, Emergency Department/ Trauma , Radiology staff and medical staff.

**PURPOSE**

To rapidly identify essential Radiology Studies for the use in trauma patients.

**GUIDELINES/GENERAL COMMENTS**

X-Ray and CT scan personnel will provide support to Trauma Team Activations (TTA) as part of the coordinated efforts of a multi-disciplinary approach to trauma care. X-Ray and CT technicians are available in-house 24 hours, 7 days/week.

The following steps shall be initiated to facilitate and expedite delivery of X-Ray and CT scanning services to patients seen in the Emergency Department who fall under the Trauma Program umbrella.

1. TTA group paging will be the primary notification to the X-ray and CT department that a potential X-ray and CT patient is arriving or has arrived in the Emergency Department.
2. The Radiology Technologist will respond in person to the ED for all TTA. They will also be responsible for notifying the on call radiologist, so that they are aware of the TTA and are prepared to expedite the reading of any radiological studies. They will be responsible for bringing a portable X-ray machine to the ED and obtain and process any X-rays ordered by the ED Physician.
3. Upon notification that the trauma patient requiring urgent CT scanning, the CT technologists will ensure CT scan availability for this patient and prioritize accordingly. Completion of any procedure in progress will be expedited to accommodate the trauma patient. The Trauma Team patient is given priority over other routine scans.
4. Trauma patients requiring emergent or rapid abdominal CTs will proceed without oral contrast unless specifically ordered by the ED Physician.
5. IV contrast may be used for emergent CT to rule out life threatening traumatic injuries without a known creatine at the discretion of the ED Physician.
6. In the case of female trauma patients of child-bearing age (13-50), efforts should be taken to obtain a STAT serum pregnancy test prior to abdominal CT scans, but at the discretion of the ED Physician, these patients may proceed to the scanner and efforts to provide shielding shall be made as indicated.
7. Unless specifically cleared by the ED Physician, all unstable, critical TTAs will be accompanied to the CT department by an RN and monitoring shall include:
  - 7.1. Cardiac Monitor
  - 7.2. Pulse Oximetry
  - 7.3. Automatic blood pressure machine
8. The on-call radiologist will prioritize and expedite the reading of any TTA radiological studies. They will call the ED Physician with any significant abnormalities.

**Available Adult & Pediatric initial Options for plain X-ray radiology studies**

The ED Physician will preferentially use non-portable methods when appropriate.

<b>TITLE:</b> Trauma Radiology: Adult and Pediatric	<b>DEPARTMENT:</b> Clinical Services
<b>EFFECTIVE DATE:</b> 04/05/13	<b>REPLACES DATES:</b> NEW
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<b>APPROVERS:</b> Radiology Medical Director Trauma Committee	Quality Management Committee

1. Lateral Cross Table C-Spine
2. 3 view upright C-Spine
3. CXR portable or PA/Lateral
4. AP Pelvis

**Available Adult & Pediatric initial Options for CT Scan radiology studies**

1. CT Head without Contrast
2. C-Spine thin section CT scan w/ sagittal & coronal reformats without contrast
3. Chest CT w/ sagittal & coronal reformats with IV contrast w/ sagittal & coronal reformats of T-Spine
4. Abdomen / Pelvis CT w/ sagittal & coronal reformats with IV contrast no Oral Contrast w/sagittal & coronal reformats of L/S-Spine

**This document is intended to be a general guideline for the care of most trauma patients with the stated diagnosis. Providers may appropriately vary from the guideline to meet the individual**

<END13>

<b>TITLE:</b> Trauma Review of Transfers and Deaths	<b>DEPARTMENT:</b> Clinical Services
<b>EFFECTIVE DATE:</b> 3/1/13	<b>REPLACES DATES:</b> NEW
<b>REFERENCE:</b>	Page 1 of 2
<b>APPROVERS:</b> Emergency Department Committee Professional Practice Council	

**SCOPE:**

All trauma patients requiring transfer in to and out of Rose Medical Center for trauma or any trauma patient who dies following a traumatic injury.

**PURPOSE:**

To ensure the timely review of transfers and deaths of traumatically injured patients.

**POLICY:**

The Trauma Medical Director and Trauma Nurse Coordinator will review all trauma transfers into or out of RMC. All trauma-related deaths will be reviewed by the Trauma Multidisciplinary Committee.

**PROCEDURE:**

1. The decision to transfer a trauma patient is made by the Emergency Physician providing care for the patient and is in accordance with the Trauma Inter-facility Consultation and Transfer policy.
2. All trauma patients transferred into or out of RMC or who die following trauma are identified by trauma staff as a patient to be reviewed and added to the trauma registry according to state rules and regulations.
3. All trauma transfers are reviewed by the Trauma Nurse Coordinator and/or Trauma Medical Director and then presented at the Trauma Multidisciplinary Committee meeting as necessary.
4. The trauma staff obtains the full medical record and performs a chart abstract of the patients hospital stay. While reviewing the medical record the staff reviews all documents pertaining to the level of patient care, as well as patient care needs, and refers all information to the Trauma Medical Director and/or the Trauma Nurse Coordinator.
5. All trauma deaths are reviewed by the Trauma Medical Director and/or Trauma Nurse Coordinator and then presented at the Trauma Multidisciplinary Committee meeting as necessary.
6. All trauma death reviews will be documented on a formal trauma death review form identifying if the death was preventable, non-preventable or possibly preventable. The form will also consist of an abstract of the patient's care, if the chart is reviewed, who reviewed the chart (i.e. surgical peer review), chart review recommendations and any process or quality improvements made as a result of the chart review.

**RESOURCES:**

- Colorado State Trauma Rules and Regulations

<b>TITLE:</b> Trauma Review of Transfers and Deaths	<b>DEPARTMENT:</b> Clinical Services
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<b>APPROVERS:</b> Emergency Department Committee Professional Practice Council	

<END 13>

ROSE MEDICAL CENTER  
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**SCOPE OF SERVICE – YEAR 2014**  
**TRAUMA SERVICES**

**MISSION**

Trauma Services at Rose Medical Center provide a dedicated team to trauma patients, in conjunction with the Colorado state trauma system, with clinical excellence and compassion.

**GOALS**

Trauma Services strives to provide competent, timely, compassionate and cost effective trauma care, for our patients and their families. We will recognize the need for a higher level of care, when appropriate, and expedite transportation to an appropriate facility if needed.

**SCOPE OF TRAUMA CARE**

Trauma Services scope of care includes both pediatric and adult trauma patients in the inpatient and outpatient settings and extends across the continuum of care. Trauma patients at Rose Medical Center are defined by Colorado Board of Health rules pertaining to the statewide emergency medical and trauma care system trauma registry inclusion and exclusion criteria.

- **Initial stabilization** – initial stabilization is provided by an ATLS certified Emergency Physician as the Team Leader. The role of the RMC trauma service is to evaluate, stabilize and treat trauma patients and provide definitive care either at RMS, within the scope of a Level IV Trauma Center, or by transfer to a higher level trauma center as indicated by state trauma rules and regulations.
- **Surgical capabilities** – surgical capabilities include all life saving modalities and interventions available at the facility. We anticipate providing surgeries for single system, non-immediately life threatening injuries requiring the services of our General Surgeons, Orthopedists, Hand, Plastic, Facial and ENT Surgeons and other surgical subspecialties available to us, as determined by the treating Emergency Physician.
- **Critical Care capabilities** – Critical care capabilities include critical care services provided by Board Certified National Jewish Intensivists who are in house 24/7/365.
- **Rehabilitation services** – acute, initial rehabilitation services are provided at RMC by Physical and Occupational Therapy as well as Speech Pathologists. Patients who require extensive rehabilitation services are transferred to appropriate centers. Early assessment for rehabilitation needs is accomplished as a collaborative effort between physicians, case management, therapies, and nursing.

**ADMISSION CRITERIA**

Trauma patients who meet state criteria for consultation or transfer to a higher level trauma center shall be appropriately assessed, stabilized, and if required, transferred to a higher level designated trauma center per state trauma regulations, by air or ground as appropriate. See also State of Colorado Trauma Rules and Regulations Definitions Chapter 2 for additional information regarding admission criteria for Level IV Trauma Centers.

All other trauma patients with injuries other than those requiring mandatory transfer as defined by the State of Colorado Trauma Rules and Regulations Definitions may be admitted to Rose Medical Center as determined by the Emergency Department Physician in conjunction with a Hospitalist, Primary Attending

Physician, Surgical Subspecialist and/or a phone consult with a level I or II trauma center Trauma Surgeon based on the patient's condition.

Trauma patients admitted to Rose Medical Center with stable traumatic injuries will be admitted to the appropriate inpatient service with appropriate consults as needed.

We anticipate admitting only stable isolated single system traumatic injuries, and not admitting any patient to an ICU setting if the primary reason for the ICU admission is trauma related. If the patient has more than one system of traumatic injury and is admitted to Rose Medical Center, then the patient will be stable enough to be admitted to a non-trauma surgeon service and a consult with a level 1 trauma center surgeon by the Emergency Physician is strongly advised. Any trauma patient who is deemed to be unstable or at high risk to become unstable will be transferred to a higher level trauma center.

Examples of appropriate admissions include, but are not limited to:

- Hemodynamically stable patients fractures requiring surgery, pain control, or PT
- Simple pneumothorax and/or Rib fractures less than or equal to 3 unilaterally or less than or equal to 2 bilaterally without underlying pulmonary contusion, hemothorax, fail chest, cardiac injury, concomitant intra-abdominal injury, or requiring high levels of pain control.
- Minor burn injuries not requiring transfer to a burn center
- Pregnant patients with minor trauma requiring fetal monitoring
- Social or welfare issues
- Head injury patients:
  - Without focal neurologic deficit
  - GCS greater than or equal to 13 or without documented history of baseline altered GCS (i.e. dementia, non-communicative, etc.)
  - Without any intracranial hemorrhage, hematoma or depressed skull fracture

### **DISCHARGE CRITERIA**

All patients with an Emergency Medical Condition will receive stabilizing treatment. The Emergency Physician is responsible for the disposition of all traumatically injured patients from the Emergency Department, including transfers to other facilities. Any inpatient service admitting a trauma patient will be responsible for the disposition of that patient from the inpatient setting, including transfers to other facilities. A patient is stable for discharge, when within reasonable clinical confidence, it is determined that the patient has reached the point where his/her continued care, including diagnostic work-up and/or treatment, could reasonably be performed as an outpatient or later as an inpatient, provided the patient is given a plan for appropriate follow up care and written discharge instructions.

Patient's ready for discharge should be or have been determined by the physician to be:

- Hemodynamically stable
- Neurologically stable
- Seizures controlled
- No significant arrhythmia
- Hematology values within acceptable range
- Pain reasonably under control/managed
- Drug Levels within acceptable range
- Level of Consciousness appropriate for patient

### **KEY FUNCTIONS/SERVICES**

The extent to which the level of care/service is provided includes, but is not limited to, the following responsibilities:

- Evaluates patient's emergency health needs, stabilizing insofar as possible those patient's life threatening conditions and providing those services that are immediately indicated.

**Trauma Service Scope of Service 2013**

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- Provides definitive care within Level IV capabilities for traumatically injured patients.
- Transfer patient to a higher level of care, if needed.
- Provides or assures the availability of follow-up care, as provided by ourselves, the hospital, or other healthcare organizations.
- Establishes and sustains the necessary training programs to provide emergency department and community personnel with care of the traumatically injured.
- Provide patient education of injury prevention practices.

**HOURS OF OPERATION**

Trauma Services are available 24 hours a day, every day of the year.

**STAFFING GUIDELINES**

Appropriate, qualified medical and nursing staff is available 24 hours a day, 7 days a week. The ED has on staff at all times a Trauma Nurse Core Curriculum certified RN. The ED has on staff at all times an ATLS certified Emergency Physician and a dedicated Trauma Nurse Coordinator with clinical experience in the care of the traumatically injured patient.

**STAFF COMPETENCIES**

The Emergency Department Registered Nurses are required to have trauma orientation upon employment with yearly competencies and will be required to maintain current certification in BLS, TNCC and ACLS or PALS.

All Emergency Physicians responsible for the care of trauma patients in the emergency department are required to have current Advanced Trauma Life Support (ATLS) certification.

**PERFORMANCE IMPROVEMENT (QA + PI) ACTIVITIES**

Patient Care Improvement Activities

- Mandatory reporting (audit filters)
  - Review all trauma admissions
  - Review all trauma transfers
  - Review all trauma deaths
- Nursing documentation
  - Vitals by RN: Initial and repeat if abnormal
  - GCS by RN: Initial and repeat if abnormal
  - Documentation by RN of spine immobilization and clearance
- Physician documentation of spine clearance
- Inpatient trauma care
  - DVT prophylaxis
  - Unplanned return to OR
  - Greater than 6 hour operative care of open fractures

Process Improvement Activities

- Improve Accuracy of Trauma Team Activation (TTA)
- Increase compliance to greater than 90% (Under triage less than 5%)
- Evaluate TTA process for effectiveness, compliance, and utilization
- Review dispositions of TTA to maintain appropriate TTA criteria
- Greater than 90% of ED MD's response times to patients transported via EMS shall be less than 5 minutes for TTA
- Evaluate the time for the completion of radiology studies and readings for TTA
- Evaluate spinal immobilization on arrival when indicated per EMS protocols
- Compliance with trauma department protocols and guidelines

**INTERDEPARTMENTAL RELATIONSHIPS**

The staff of the Emergency Department interacts with all other departments and medical staff of Rose Medical Center to provide optimal service to the patient and his/her family.

<b>TITLE:</b> Severe Traumatic Brain Injury – Trauma Practice	<b>DEPARTMENT:</b> Clinical Services
<b>EFFECTIVE DATE:</b> 03/01/13	<b>REPLACES DATES:</b> NEW
<b>REFERENCE:</b> PC.02.01.03	<b>Page</b> 1 of 3
<b>APPROVERS:</b> Trauma Committee	Quality Management Committee

**SCOPE**

Emergency Department personnel, nursing and LIP.

**PURPOSE**

To provide concise guidelines for the emergent care of a severe traumatic brain injury patient in the Emergency Department.

**GUIDELINES/GENERAL COMMENTS**

The goals of resuscitation are aimed at preventing hypoxia, hypotension and reducing increased intracranial pressure with our ultimate goal being rapid stabilization and safe transfer to an appropriate higher level trauma center.

Per the RMC Inter-Facility Consultation and Transfer Policy based upon Colorado State Rules for Trauma Facilities Chapter 2 guidelines:

- Significant head injuries (acute intracranial bleeding or GCS < 13 or spinal cord injury with neurologic deficit **REQUIRE** mandatory consultation and consideration for transfer with an attending trauma surgeon at a higher level Trauma Center.

**DEFINITIONS:**

Severe Traumatic Brain injury is defined as any patient with GCS < 13, any intracranial blood, neurologic deficit, or depressed skull fracture.

**PROCEDURE:**

Emergency Department Resuscitation

1. Stabilize airway, breathing and circulation
  - a) Maintain O2 saturations at 100%
  - b) Consider intubation for GCS < 8 or unable to protect airway:  
Use RSI protocol;  
Keep PCO2 35-40mmHg
  - c) Establish 2 large bore IVs – draw labs per protocol
  - d) Avoid hypotension – Initiate volume replacement with NS (PRBCs, as indicated)
  - e) Minimal acceptable SB/P by age:
    - 1) 1mo-1yr: > 70mmHg
    - 2) 1-10 yrs: > 70 + (2x age in yrs) mmHg
    - 3) > 10 years: ≥ 90 mmHg
2. Maintain head in neutral position with rigid cervical collar, as indicated

<b>TITLE:</b> Severe Traumatic Brain Injury – Trauma Practice	<b>DEPARTMENT:</b> Clinical Services
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3. Mandatory phone consult with Level I or II Trauma Center Trauma Surgeon for appropriateness of transfer to a higher level Trauma Center
4. Administer short-term sedation and analgesia
5. Obtain CT scans, unless doing so would delay transfer, then defer to accepting facility
6. For clinical signs of elevated ICP and herniation, (i.e. unequal pupils, posturing, Cushing’s triad) consider treatment with:
  - Sedation
  - Mannitol 0.5 – 1.0 gm/kg
  - Hyperventilation (to PCO<sub>2</sub> of 25-35)
7. Consider foley and OGT (avoid NGT with any sign of facial trauma)
8. Consider elevating HOB to 30 degrees as soon as able
9. Consider seizure prophylaxis with fosphenytoin
10. Consider consult with Neurosurgeon Attending if patient is appropriate for admission to Rose Medical Center
  - Without depressed skull fracture
  - Without intracranial bleeding
  - Without focal neurologic deficit
  - GCS ≥ 13 and without previous knowledge of abnormal baseline mental status (i.e. dementia, normally non-communicative, etc.)
  - Not requiring ICU admission

<b>TITLE:</b> Severe Traumatic Brain Injury – Trauma Practice	<b>DEPARTMENT:</b> Clinical Services
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### **Special consideration for Intra-Cranial Bleeds in the Anti-Coagulated Trauma Patient**

**Rationale:** Injured patients who are anti-coagulated are at high risk for intra-cranial bleeding, even with minor head trauma and low mechanism. Therefore, a high index of suspicion should be used in evaluating these patients, including aggressive head CT scanning.

**Goal:** Rapidly identify those trauma patients being treated with anti-coagulation agents that present with acute intra-cranial blood of any severity and reverse the anti-coagulated state as needed.

**GUIDELINE:**

1. Any trauma patient with an INR > 1.5 (anti-coagulated or with liver disease) and has evidence of acute intra-cranial blood should be treated as an emergency and requires immediate phone Trauma Surgeon and/or Neurosurgery consultation for emergent transfer to a higher level Trauma Center.
  - a. Immediately contact the blood bank to type for fresh frozen plasma (FFP) and plan to give urgently as soon as it is available. The first unit should be given within 1 hour of diagnosis.
  - b. Establish 2 large bore IVs or central line access.
  
2. Special considerations:
  - a. Platelet alteration with Plavix is permanent and irreversible; therefore platelet transfusion will be required to “reverse” these patients.
  - b. For patients on coumadin, after Vitamin K 10 mg is given, the INR will change within 4-5 hours and it takes one week to re-anti-coagulate with coumadin.

**\*Anti-Coagulation medications include, but are not limited to, Coumadin, Plavix, Lovenox, Pradaxa\***

**This document is intended to be a general guideline for the care of most trauma patients with the stated diagnosis. Providers may appropriately vary from the guideline to meet the individual patient’s needs.**

<b>TITLE:</b> Trauma Team Activation	<b>DEPARTMENT:</b> Clinical Care
<b>EFFECTIVE DATE:</b> 03/01/2013	<b>REPLACES DATES:</b> NEW
<b>REFERENCE:</b> PC.01.01.01	<b>Page</b> 1 of 4
<b>APPROVERS:</b> Trauma Committee	Quality Management Committee

**SCOPE:**

Emergency Department, Radiology Department, Laboratory, Respiratory Therapy Department, and the Nursing Supervisor

**PURPOSE:**

Rose Medical Center shall have a trauma team activation system to ensure an organized, systematic, and multidisciplinary care of the trauma patient.

**DEFINITIONS:**

The Trauma Team consists of:

1. Emergency Department Physician with current Advanced Trauma Life Support (ATLS) certification
2. Two Emergency Department Nurses (at least one with Trauma Nurses Core Course certification)
3. Emergency Department Technician
4. Radiology Technologist
5. Laboratory Technologist
6. Respiratory Therapist
7. Nursing Supervisor

**PROCEDURE:**

Notification occurs when the Emergency Department receives information from the field or from a transferring facility that a trauma patient is being transported to Rose Medical Center, or upon the arrival via private transportation of a trauma patient meeting trauma criteria.

Trauma Team activation is the responsibility of the Emergency Physician or Emergency RN. The Trauma Team is activated for trauma patients meeting the following criteria: See appendix A: Trauma Team Activation Criteria

**Trauma Team Member Responsibilities**

**Emergency Department Physician**

1. Assumes responsibility for injured patients and provides initial patient stabilization.
2. Will see and evaluate the patient within 5 minutes (but less than 5 minutes as a rule)
3. Evaluates all trauma patients presenting to the emergency department to assure appropriate Trauma Team activation /or consultation has been initiated per activation/consult criteria.
4. Performs assessments, procedures and diagnostic studies as necessary.
5. Cervical spine clearance and documentation.

<b>TITLE:</b> Trauma Team Activation	<b>DEPARTMENT:</b> Clinical Care
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\*If C-spine has not been cleared before the patient is transferred from the ED, this will be communicated to the admitting physician and clearance becomes their responsibility. The attending Emergency Physician will be responsible for documenting this communication in his/her chart.

### Emergency Department Charge Nurse

1. Ensures "Trauma Team" has been activated.
2. Responsible for completing Trauma Team Activation Form
3. Communicates and coordinates all information and activities related to the major trauma patient.
4. Reassigns patient load to relieve primary nurse and secondary nurse/technician.
5. Assess staffing levels and requests assistance if needed.
6. Assigns nursing staff duties.

### Primary Trauma Nurse (ED RN)

1. Prepares trauma room for patient's arrival.
2. Major Trauma template should be used for documentation of trauma activation by selecting the "Trauma/MVC" template in Meditech and completed REQUIRED documentation only. The RN must note in Meditech "to reference paper trauma trifold" for all other documentation.
3. Receives orders from the Emergency Physician (EP) and assures that the orders are carried out.
4. Assists in conducting primary and secondary survey in conjunction with EP.
5. Conducts ongoing assessments and communicates changes in patient condition to the EP.
6. Documentation and reassessment of all age patients should include obtaining blood pressure, heart rate, respiratory rate (and pulse oximetry when indicated), temperature, Glasgow Coma Score, and pupillary response upon arrival to the Emergency Department and at a minimum, one hour later than or as frequently as condition warrants.
7. Vital signs are to be obtained upon triage, repeated in fifteen minutes and then repeated in an hour. From this point on if the patient's vital signs are unstable; they must be documented at minimum every hour. However, if the patient's vital signs are stable they can be documented at minimum every two hours.
8. Glasgow Coma Scale is to be obtained upon triage, repeated in fifteen minutes and then repeated in an hour. From this point on if the patient's GCS is ever documented as <15 or the patient has sustained any type of head injury or diagnosed with a head injury, then a GCS must be documented at minimum every hour. However, if the patient's GCS =15 and has not sustained a head injury nor diagnosed with one, then a GCS can be documented at minimum every two hours.
9. Final documentation of vital signs must be completed within 30 minutes of discharge/admission or 15 minutes prior to transfer of patient.

### Secondary Nurse/ Emergency Department Technician (when on duty)

1. Carries out instruction from primary trauma nurse and functions as assistant
2. Assists with procedures, equipment, movement of patient, CPR etc. as necessary.

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**Emergency Department Technician**

1. Responds in person immediately to all Trauma Team Activations
2. Ensures trauma room is stocked and ready for patient arrival.
3. Places Ultrasound machine in room at patient's right side
4. Positions self on patient's Left side and assists with patient transfer onto trauma gurney.
5. Cuts and removes patient's clothes; helps locate patient information.
6. Covers patient with warm blankets or warming unit as needed.
7. Places patient on cardiac monitor, NIBP and SaO2 monitor
8. Assist RN in obtaining a full set of vital signs, including temperature.
9. Calls out vital signs and patient identification to Primary RN
10. Correctly labels field bloods and hands off to laboratory technician.
11. Bags and labels all patient belongings.
12. Hands off valuables to security
13. Assists MD with log-rolling and backboard removal
14. Assists with set-up of sterile trays and equipment
15. Inserts foley catheter as ordered.
16. Places patient on transport monitor and assists with transports.

**Radiologic Technologist:**

1. Responds in person immediately to Emergency Department for the Trauma Team Activation for portable films and anticipated C-spine, CXR and pelvis films
2. They will also be responsible for notifying the on-call Radiologist, so that they are aware of the Trauma Team Activation and are prepared to expedite the reading of any radiological studies.
3. If needed, is responsible for communicating with the on-call Ultrasound Technologist.

**Laboratory Technician/Phlebotomist**

1. Responds in person immediately to Emergency Department for the Trauma Team Activation and will prepare blood tubes, blood slips, etc. for collection of ordered laboratory tests.
2. Bands the patient for type and cross-match.

**Respiratory Therapist (RT)**

1. Responds in person immediately to Emergency Department for the Trauma Team Activation.
2. Assists with intubation as needed.
3. Maintains adequate oxygenation and ventilatory support (non-rebreather mask, bag-valve- mask, to endotracheal tube, or T-piece to oxygen source).
4. Provides suctioning as needed.
5. Oxygen transport as needed.

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6. Places on ventilator as needed and monitor

**Nursing Supervisor**

1. Assists as requested to coordinate accessibility of critical care beds.
2. Assists the ED charge nurse to facilitate a smooth and prompt transfer from the ED.
3. Serves as resource to the ED charge nurse regarding any problems that may arise in relation to the Trauma Team Activation

**Trauma Coordinator/Director**

1. Serves as a resource to the Emergency Department.
2. Reviews all Trauma Team Activations

**RESOURCES:**

Colorado Department of Public Health and Environment, Health Facility and Emergency Medical Services Division, 6CCR 1015-4, State Board of health Rules Pertaining to the Statewide Emergency Medical and Trauma Care System, Chapter Three – Designation of Trauma Facilities (Promulgated by the State Board of Health), amended October 15, 2008, effective November 30, 2008.

<END 13>

<b>TITLE:</b> Transfer of the Trauma Patient by Fixed and Rotor Wing Aircraft	<b>DEPARTMENT:</b> Clinical Services
<b>EFFECTIVE DATE:</b> 03/01/13	<b>REPLACES DATES:</b> NEW
<b>REFERENCE:</b> [HCA policies or Standards]	<b>Page</b> 1 of 1
<b>APPROVERS:</b> Emergency Department Committee, Professional Practice Council	

**SCOPE:**

All trauma patients transferred into and out of RMC by fixed and rotor wing aircraft

**PURPOSE:**

To ensure that optimal mode of transport is utilized for the traumatically injured patient transferred into and out of Rose Medical Center.

**POLICY:**

Patients requiring transfer into or out of RMC for trauma will utilize the most appropriate mode of transport as determined by the Emergency Physician based on patient condition, accepting Trauma Surgeon consultation/request, weather, availability or benefits outweigh the risks, etc. All critical and high-risk injuries as outlined in the State of Colorado Trauma Rules and Regulations and outlined in Inter-facility Consultation and Transfer of the Adult and Pediatric Trauma Patient Policies will be considered for air transport unless patient condition and documentation supports appropriate alternative methods.

**PROCEDURE:**

1. RMC will utilize the HealthONE AIRLIFE communication center to coordinate critical care air transports into and out of RMC.
2. A call will be made internally to x1111 and the dispatcher will assist in arranging appropriate transportation in collaboration with the transferring and receiving Emergency Physician and/or Trauma Surgeon.
3. In the event that AIRLIFE is unable to provide transportation, the communication center will make arrangements with another agency for the next available and appropriate mode of transportation.
4. All trauma transfers into and out of RMC will be reviewed by the TNC for appropriateness.

**RESOURCES:**

- Colorado State Trauma Rules and Regulations
- Helicopter Protocols and Safety Procedures for Working Around The Helipad During Air Operations RMC POLICY.

<b>TITLE:</b> Traumatic Spine Evaluation and Clearance	<b>DEPARTMENT:</b> Clinical Care
<b>EFFECTIVE DATE:</b> 03/01/2013	<b>REPLACES DATES:</b> NEW
<b>REFERENCE:</b> PC.01.01.01	<b>Page</b> 1 of 4
<b>APPROVERS:</b> Trauma Committee	Quality Management Committee

## SCOPE

Emergency Department personnel, nursing and LIP.

## PURPOSE

To standardize the radiographic examination of patients in whom spine injury is suspected.

## GUIDELINES/GENERAL COMMENTS

1. See Adult cervical spine algorithm, **Attachment A**
2. See Pediatric cervical spine algorithm, **Attachment B**
3. For removal of patient from backboard
4. In patients with a high suspicion of spinal injury, it is preferred to do a cross table lateral spine X-ray before sitting the patient up for additional views.
5. A 3-view (or 5-view, if requested) cervical spine series shall be obtained in patients ages 6 and older: (AP, odontoid, upright or cross-table lateral, and {if 5-view} both obliques) with the neck collar remaining in place.
6. A 2 view cervical spine series shall be obtained in children ages 5 and younger. These include AP and cross-table or upright lateral. An exaggerated waters view may be added in lieu of the odontoid view. The collar shall remain in place for these films.
7. "Trauma obliques" may be obtained by angling the x-ray tube. Patients may be moved to the x-ray table and have supine obliques done with the collar in place or, upright with the upright lateral view.
8. In patients with a high suspicion of spinal injury whose clinical exam, body habitus, age with concern for degenerative changes and mechanism of injury warrant a CT scan. A non-contrast CT will be ordered of the Head and C-spine.
9. All films shall be obtained with the collar in place. If necessary, the front of the collar may be opened to obtain the odontoid (open-mouth) view. C-spine immobilization should be continued manually if necessary while the collar is open. The upright lateral view shall be done with the collar in place only after the ED physician determines that there are no other injuries &/or contraindications to sitting the patient upright.
10. At any time (such as after the resolution of intoxication), the ED physician may clinically determine that there is no longer an indication for the completion of these C-spine imaging studies.

<b>TITLE:</b> Traumatic Spine Evaluation and Clearance	<b>DEPARTMENT:</b> Clinical Care
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