Winter 2020/2021
Volume 1, Issue 4

The MTAC Quarterly Review

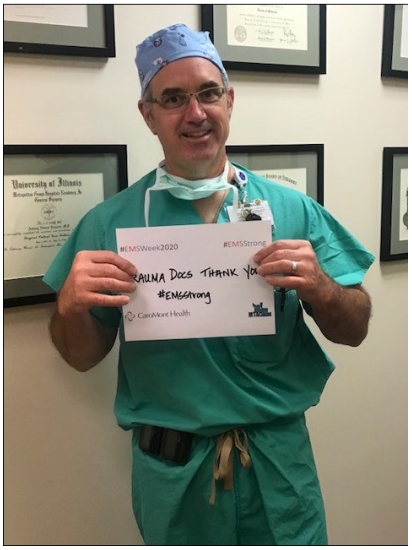
Welcome to the *"MTAC Newsletter."* Regional trauma care is a remarkably intricate system of protocols, resources, and most importantly, personnel. That care begins with the 911 call through the prehospital phase, to the ED, into the hospital which may include the ICU, OR, and the medical surgical floors. For the trauma centers, the entire hospital is engaged in the trauma response including the labs, radiology, respiratory care, and even housekeeping requires the training to manage blood and fluid contamination to the hospital from the resuscitations. Being discharged is not the end of trauma care, but in many cases the beginnings of prolonged rehabilitation. Our purpose with the MTAC Newsletter is to update and disseminate the activities and accomplishments without our region.

@MetrolinaTrauma

Metrolina Trauma Advisory Committee is one of eight North Carolina Regional Advisory Councils (RACs), dedicated to working with its regional emergency & trauma care providers, hospitals, & agencies in efforts of constructing & maintaining a coordinative, evidence based process for the delivery of consistent, quality trauma care.

Dr. Anthony Raspanti

Trauma Medical Director -
Caromont Regional Medical Center



Dr. Anthony Raspanti received his B.S. degree from the University of Illinois-Urbana in 1988 and his M.D. degree from the University of Illinois College of Medicine-Chicago in 1992. He completed his internship, residency, and surgical critical care fellowship at the University of Illinois-MGH from 1992-1998.

He joined CaroMont Surgical Associates at CaroMont Regional Medical Center in 2010 and serves at the Trauma Medical Director for this busy Level III Trauma Center in Gaston County. He also serves at the Surgical Critical Care Director and the Surgical Service Line Quality Director at CaroMont, as well as serving on the Board of Directors for the Metrolina Trauma Advisory Committee.
Dr. Raspanti remains active in the surgical community with Society memberships which include the American College of Surgeons (ACS), the American Society of Bariatric and Metabolic Surgeons, the NC Committee on Trauma (NC COT) and the Gaston County Medical Society.

Upcoming Education around the Region

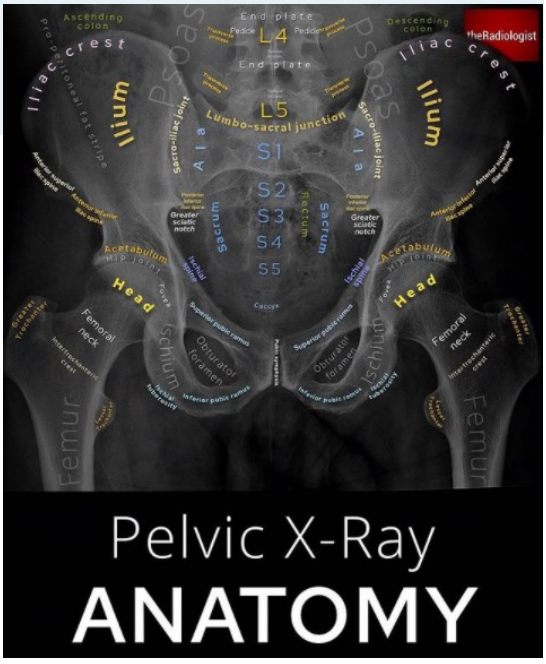
1/6	Trauma Talk **
1/8	Trauma Talk **
1/12-13	TNCC
1/12-19	TNCC
1/19	MTAC Conf *
1/19-20	ATLS
1/20-21	ENPC
2/16	MTAC Conf*
2/16-17	TNCC
8/26-27	TNCC
3/2-3	ENPC
3/8-12	TNCC
3/16	MTAC Conf*
3/16-17	TNCC

* MTAC Monthly Trauma Conference at CMC
**NH Trauma Talks at NH Presbyterian Medical Center

For more event info, go to www.metrolinatrauma.org

Special points of interest

- Interested in knowing what the clinical outcome of a trauma patient was? Reach out to us at scott.wilson@atriumhealth.org
- Do you have a trauma course coming up & need it advertised? We can use our website or social



The North Carolina Committee on Trauma

Atrium Health · CaroMont Health · Novant Health · Piedmont Medical Center

MTAC
METROLINA TRAUMA
ADVISORY COMMITTEE

ATCN
ADVANCED TRAUMA CARE FOR NURSES®

Advanced Trauma Care for Nurses (ATCN) is coming soon to Carolinas Medical Center! Date are TBD so check out the MTAC website for updates.

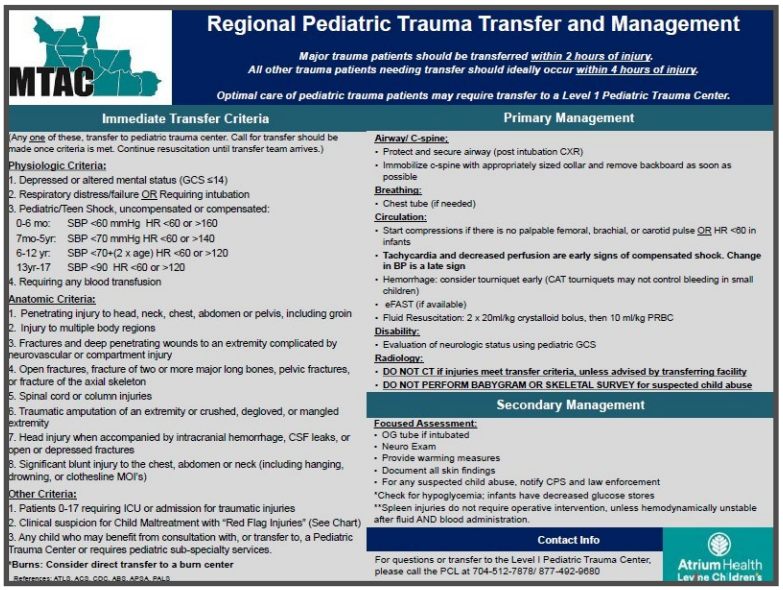
ATLS®
ADVANCED TRAUMA LIFE SUPPORT

A hybrid ATLS course is scheduled for January 19-20 at CMC. For more info, email lori.gottlieb@atriumhealth.org or go to the MTAC website.

Adult and Pediatric Trauma Transfer Guidelines

If you'd like a copy, please email scott.wilson@atriumhealth.org or check them out on the MTAC website.

www.metrolinatrauma.org —> About MTAC —> Trauma Transfer Guidelines



Regional Pediatric Trauma Transfer and Management

Major trauma patients should be transferred within 2 hours of injury.
All other trauma patients needing transfer should ideally occur within 4 hours of injury.
Optimal care of pediatric trauma patients may require transfer to a Level 1 Pediatric Trauma Center.

Immediate Transfer Criteria

(Any one of these, transfer to pediatric trauma center. Call for transfer should be made once criteria is met. Continue resuscitation until transfer team arrives.)

Physiologic Criteria:
1. Depressed or altered mental status (GCS ≤14)
2. Respiratory distress/failure OR Requiring intubation
3. Pediatric/Teen Shock, uncompensated or compensated:
   - 0-6 mo: SBP <60 mmHg HR <60 or >160
   - 7mo-5yr: SBP <70 mmHg HR <60 or >140
   - 6-12 yr: SBP <70+(2 x age) HR <60 or >120
   - 13yr-17 SBP <90 HR <60 or >120
4. Requiring any blood transfusion

Anatomic Criteria:
1. Penetrating injury to head, neck, chest, abdomen or pelvis, including groin
2. Injury to multiple body regions
3. Fractures and deep penetrating wounds to an extremity complicated by neurovascular or compartment injury
4. Open fractures, fracture of two or more major long bones, pelvic fractures, or fracture of the axial skeleton
5. Spinal cord or column injuries
6. Traumatic amputation of an extremity or crushed, degloved, or mangled extremity
7. Head injury when accompanied by intracranial hemorrhage, CSF leaks, or open or depressed fractures
8. Significant blunt injury to the chest, abdomen or neck (including hanging, drowning, or clothesline MOI's)

Other Criteria:
1. Patients 0-17 requiring ICU or admission for traumatic injuries
2. Clinical suspicion for Child Maltreatment with "Red Flag Injuries" (See Chart)
3. Any child who may benefit from consultation with, or transfer to, a Pediatric Trauma Center or requires pediatric sub-specialty services.

*Burns: Consider direct transfer to a burn center

References: ATLS, ACS, CDC, ABS, APSA, PALS

Primary Management

Airway/ C-spine:
- Protect and secure airway (post intubation CXR)
- Immobilize c-spine with appropriately sized collar and remove backboard as soon as possible

Breathing:
- Chest tube (if needed)

Circulation:
- Start compressions if there is no palpable femoral, brachial, or carotid pulse OR HR <80 in infants
- **Tachycardia and decreased perfusion are early signs of compensated shock. Change in BP is a late sign**
- Hemorrhage: consider tourniquet early (CAT tourniquets may not control bleeding in small children)
- eFAST (if available)
- Fluid Resuscitation: 2 x 20ml/kg crystalloid bolus, then 10 ml/kg PRBC

Disability:
- Evaluation of neurologic status using pediatric GCS

Radiology:
- **DO NOT CT if injuries meet transfer criteria, unless advised by transferring facility**
- **DO NOT PERFORM BABYGRAM OR SKELETAL SURVEY for suspected child abuse**

Secondary Management

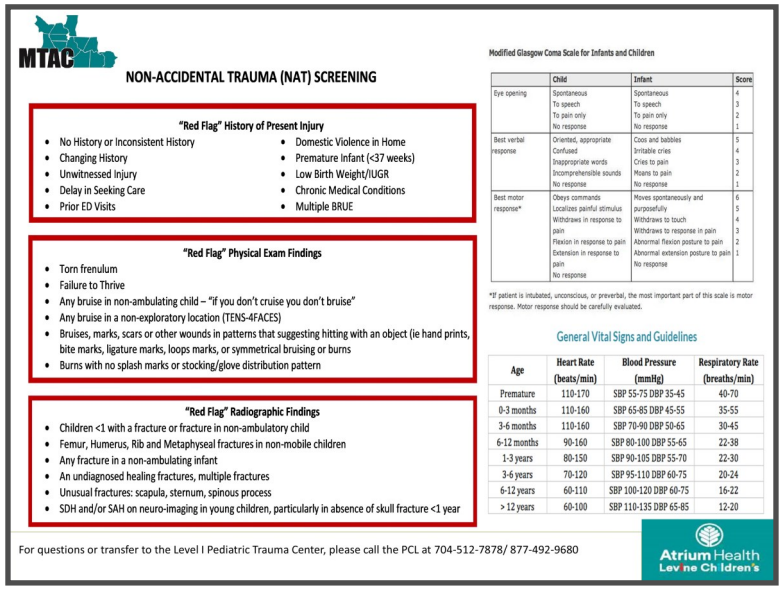
Focused Assessment:
- OG tube if intubated
- Neuro Exam
- Provide warming measures
- Document all skin findings
- For any suspected child abuse, notify CPS and law enforcement

*Check for hypoglycemia; infants have decreased glucose stores
**Spleen injuries do not require operative intervention, unless hemodynamically unstable after fluid AND blood administration.

Contact Info

For questions or transfer to the Level I Pediatric Trauma Center, please call the PCL at 704-512-7878/ 877-492-9680

Atrium Health Levine Children's



NON-ACCIDENTAL TRAUMA (NAT) SCREENING

"Red Flag" History of Present Injury
- No History or Inconsistent History
- Changing History
- Unwitnessed Injury
- Delay in Seeking Care
- Prior ED Visits
- Domestic Violence in Home
- Premature Infant (<37 weeks)
- Low Birth Weight/IUGR
- Chronic Medical Conditions
- Multiple BRUE

"Red Flag" Physical Exam Findings
- Torn frenulum
- Failure to Thrive
- Any bruise in non-ambulating child – "if you don't cruise you don't bruise"
- Any bruise in a non-exploratory location (TENS-4FACES)
- Bruises, marks, scars or other wounds in patterns that suggesting hitting with an object (ie hand prints, bite marks, ligature marks, loops marks, or symmetrical bruising or burns
- Burns with no splash marks or stocking/glove distribution pattern

"Red Flag" Radiographic Findings
- Children <1 with a fracture or fracture in non-ambulatory child
- Femur, Humerus, Rib and Metaphyseal fractures in non-mobile children
- Any fracture in a non-ambulating infant
- An undiagnosed healing fractures, multiple fractures
- Unusual fractures: scapula, sternum, spinous process
- SDH and/or SAH on neuro-imaging in young children, particularly in absence of skull fracture <1 year

Modified Glasgow Coma Scale for Infants and Children

	Child	Infant	Score
Eye opening	Spontaneous To speech To pain only No response	Spontaneous To speech To pain only No response	4 3 2 1
Best verbal response	Oriented, appropriate Confused Inappropriate words Incomprehensible sounds No response	Coos and babbles Irritable cries Cries to pain Moans to pain No response	5 4 3 2 1
Best motor response*	Obeys commands Localizes painful stimulus Withdraws in response to pain Flexion in response to pain Extension in response to pain No response	Moves spontaneously and purposefully Withdraws to touch Withdraws to response in pain Abnormal flexion posture to pain Abnormal extension posture to pain No response	6 5 4 3 2 1

*If patient is intubated, unconscious, or preverbal, the most important part of this scale is motor response. Motor response should be carefully evaluated.

General Vital Signs and Guidelines

Age	Heart Rate (beats/min)	Blood Pressure (mmHg)	Respiratory Rate (breaths/min)
Premature	110-170	SBP 55-75 DBP 35-45	40-70
0-3 months	110-160	SBP 65-85 DBP 45-55	35-55
3-6 months	110-160	SBP 70-90 DBP 50-65	30-45
6-12 months	90-160	SBP 80-100 DBP 55-65	22-38
1-3 years	80-150	SBP 90-105 DBP 55-70	22-30
3-6 years	70-120	SBP 95-110 DBP 60-75	20-24
6-12 years	60-110	SBP 100-120 DBP 60-75	16-22
> 12 years	60-100	SBP 110-135 DBP 65-85	12-20

For questions or transfer to the Level I Pediatric Trauma Center, please call the PCL at 704-512-7878/ 877-492-9680

Atrium Health Levine Children's

REGIONAL TRAUMA MANAGEMENT AND TRANSFER CRITERIA

Major trauma patients should be transferred within 2 hours of injury
All trauma patients needing transfer should ideally occur within 4 hours of injury

Immediate Transfer Criteria

(Any one of these, transfer to trauma center)

CNS:
- GCS ≤ 13, abnormal or deteriorating
- Spinal Cord injury or neuro deficits
- Intubated/ RSI

Shock:
- Adult: BP <90, HR > 120
- Geriatric (age ≥ 65): BP <110
- Pediatric: SBP < 70 + (2 x age in yrs) HR <60 or >160

Torso:
- Major chest wall injury, Pneumothorax, Hemothorax, SPO2<92%
- Cardiac injury or widened mediastinum
- Suspected intra-abdominal injury
- Unstable Pelvis

Multisystem Injuries:
- Penetrating injury to Head/Neck/Chest/Abd/Pelvis
- Injury to multiple body regions

Extremities:
- Severe open fractures
- Multiple long bones fractures
- Crushed, degloved, or mangled extremity
- Amputation proximal to wrist or ankle

Consider co-morbid factors

Burns: Consider direct Burn Center transfer

Primary Management

Airway/ C-Spine:
- Protect and Secure if needed (post intubation CXR)
- Immobilize C-spine if not cleared

Breathing:
- Chest tube (any size) if needed

Circulation:
- Hemorrhage (consider tourniquet early)
- eFAST (if available)
- Adult: 1L Crystalloid, then PRBC
- Pediatric: 2 x 20 ml/kg Crystalloid, then 10ml/kg PRBC

Radiology:
- AP Chest & AP Pelvis (if torso injury) films
- Do Not CT if transferring, only resuscitate/warm

Secondary Management

Focused Assessment-
- Foley (after eFAST)
- OG tube if intubated
- Neuro exam
- Reevaluate resuscitation adjuncts
- Prep for transfer
- Continue resuscitation & warming

MTAC
METROLINA TRAUMA
ADVISORY COMMITTEE

When giving report to accepting facility, please provide the following information:
- ✓ Time of Injury, ED arrival Time, Mechanism of injury
- ✓ Prehospital details (Highest HR, lowest BP, lowest GCS)
- ✓ Medications (doses and administration times)
- ✓ TXA administration/Blood products given/IVF
- ✓ Pertinent labs, imaging done
- ✓ Injuries identified

Atrium Health CMC (Level 1)
Atrium Health Cabarrus (Level 3)
Atrium Health Cleveland (Level 3)
Physician Connection Line (PCL)
704-512-7878 / 877-492-9680
Or Yellow Phone

CaroMont Regional Medical Center
(Level 3)
704-834-2266

Novant Health Presbyterian Medical Center
(Level 3)
Doctor Connect Line
888-599-2120

Resources: ACS, ATLS, ABS, CDC

www.metrolinatrauma.org