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MTAC METROLINA TRAUMA ADVISORY COMMITTEE

The MTAC Monthly Review

@MetrolinaTrauma

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.

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.

Brenda Medlin

Brenda Medlin—her name is synomous with teacher, mother, wife, team leader and exemplary employee.

Brenda has working in the Registry at CMC/ Atrium for 12 years, the entire time with Trauma Services. She has grown the Registry Team over those 12 years from two Registrars to today's total of 15 and now oversees data collection at THREE Trauma Centers. Can you imagine what she has seen in those 12 years? She is respected among her peers not only within the Atrium family, but within the Trauma Community across both North and South Carolina. Her knowledge of TQIP (Trauma Quality Improvement Program) is amazing—those of us that work with her refer to her as the "Human Data Dictionary and the Master of All Reports."

Comments from some of Brenda's team say it all:

"I've never worked with a group of people more passionate, more dedicated or more helpful than this team and it all trickles down from our fear less leader, Brenda! She's the absolute best!"

"Brenda is a wonderful, patient supervisor for whom I am proud to work. Her extensive knowledge of trauma registry data is sought not only from those of us in our registry but from those around the state."

"Brenda is the heart and soul of the registry." "You find value in what you do but the bigger part is that you love and feel supported by your team and your boss. Brenda is smart, patient and a tireless champion for us and the Trauma Department."

"Brenda is a huge advocate for quality for our trauma department and we could not ask for a better leader."

"Not a week, and often not a day, passes where I don't turn to Brenda for guidance, ideas or an answer to a data question. She is the all-

Upcoming Education around the Region

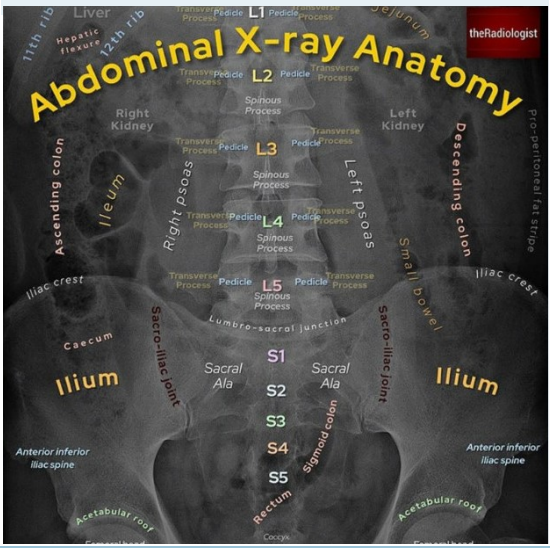
8/10-11.....TNCC
8/12.....ATLS Refresher
8/18-19.....ENPC
8/19.....Burn Management
8/26-27.....TNCC

- 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 media to help market it.
- Want to say good job to an EMS crew or another hospital for their excellent patient care? Let us know!



Atrium Health · CaroMont Health · NOVANT HEALTH · PIEDMONT MEDICAL CENTER

Brenda Medlin continued…

knowing Yoda of this trauma program!"

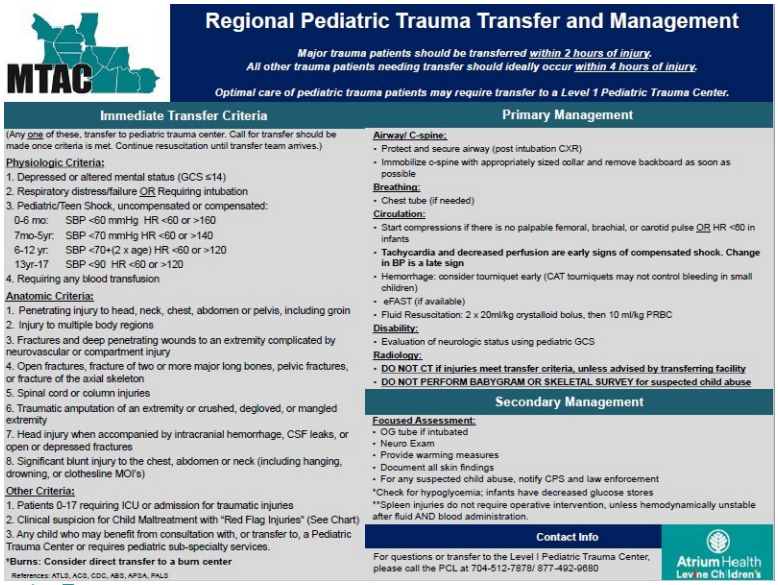
"It's quite an honor to work with someone like Brenda. Not only does she know her job inside and out, she has a true heart for her job and her team. She takes great pride in what she does and it resonates onto the team. I'm so thankful to be apart of this team!"

"I have grown personally and professionally under Brenda's leadership. She gave me the encouragement I needed to believe that I could be a STAC sub-committee chair. She transforms my mistakes into valuable lessons. She allows me to main tain a healthy work/life balance and the flexibility to be successful at both She has assembled a TEAM that is dedicated to excellence and to each other's success. I am humbled by her confidence in my abilities which makes we want to work harder for her and our Team. Thank you, Brenda, for all you have done for this Team and for your exemplary leadership."

When Brenda is not educating, running multitudes of reports people have requested or answering questions regarding the Trauma Registry, she could be found at home or in the great outdoors with her husband, her loving goldendoodle, or planning family outings with her 3 children and her 5 grandchildren.

ATLS®
ADVANCED TRAUMA LIFE SUPPORT

The June refresher course for existing certification holders has been rescheduled for August 12th. For more info, email lori.gottlieb@atriumhealth.org or go to the MTAC website.



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 <60 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

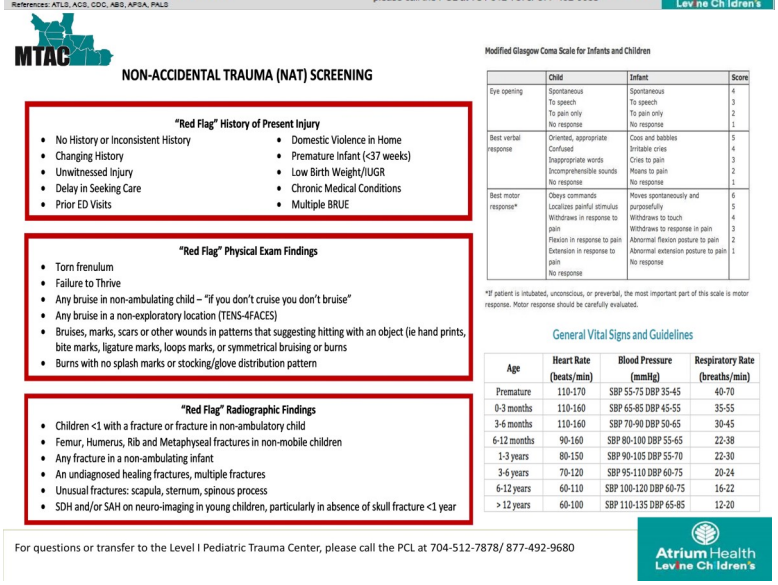
Focused Assessment:
- OG tube if intubated
- Neuro Exam
- Provide warming measures
- Document all skin findings
- For any suspected child abuse, notify CPS and law enforcement

*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

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Atrium Health Levine Children's

MTAC Pediatric Transfer Guideline

Introducing the new Regional Pediatric Trauma Transfer and Management Guidelines!

After review and input from multiple pediatric trauma and emergency medicine physicians, nurses, and other team members at our region's Pediatric Level 1 Trauma Center, guidelines on transfer criteria, primary and secondary management, contact information, and a supplemental guide with other useful information has been published.

Regional hospitals and Emergency Departments, be on the lookout for virtual meeting opportunities to review with your team as well as giving an opportunity to ask questions of the pediatric trauma team.

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