State of Colorado
Department of Public Health and Environment
Health Facilities and Emergency Medical Services
Division

Level I
Trauma Center Designation
Colorado Application

UCHealth Memorial Hospital Central
1400 East Boulder Street
Colorado Springs, CO 80909
719-365-5000 (Phone)

Trauma Program
HFEMSD, CDPHE
4300 Cherry Creek Drive South
Denver, CO 80246-1530
303-692-2443 (Phone)

Trauma Review Contact Information

1  Facility Name: UCHealth Memorial Hospital Central
2  Requested designation level: Level I
3  Physical address: 1400 E. Boulder Street
   Colorado Springs, CO 80909
4  Primary contact name: Heather Finch RN, MSN, CEN, TCRN
5  Voice phone number: 719-365-5554
6  Fax phone number: 719-365-5473
7  email address: heather.finch@uchealth.org
8  This application must be completed by: 1/15/2018

Chart 1 - Facility and Staff Information

1  Facility name: UCHealth Memorial Hospital Central
2  Mailing Address: 1400 East Boulder Street
Colorado Springs, CO 80909
El Paso
Regional Emergency Medical and Trauma Advisory Council (RETAC): Plains to Peaks
Facility phone number: 719-365-5000

President or CEO:
Name: Joel Yuhas
Phone: 719-365-1804
Email: joel.yuhas@uchealth.org

Trauma Medical Director:
Name: Thomas Schroeppel, MD, FACS
Phone: 719-365-2422
Email: thomas.schroeppel@uchealth.org

Medical Co Director:
Name: Paul Reckard, MD, FACS
Phone: 719-364-6487
Email: paul.reckard@uchealth.org

Trauma Nurse Coordinator:
Name: Marissa McLean, MSN, MBA, CEN, TCRN
Phone: 719-365-8836
Email: marissa.mclean@uchealth.org

Trauma Program Manager:
Name: Heather Finch, MSN, RN, CEN, TCRN
Phone: 719-365-5554
Email: heather.finch@uchealth.org

Number of beds staffed and operational: 302
Total number of Emergency Department beds: 68
Average daily inpatient census for the reporting period: 222.00
Average daily inpatient census for the previous year: 208.00
Describe any anticipated changes in the number of beds and/or patient volume over the next few years.
We anticipate a change in the number of beds due to a recent initiative to redesign some units that will offer private rooms. The hospital’s leadership believes that by offering optimal medical services and privacy will enhance patient experience and satisfaction.
El Paso County’s population was 688,284 as of 2016 and is the second largest county in Colorado (census.gov). The county is expected to meet or exceed its current annual growth rate of 2.1% in the upcoming years. The Denver Post recently published the projection that over the next 15 years, El Paso County will surpass Denver County as the most populated county in the state (Svaldi, 11/9/17). UCHealth Memorial plans for continued patient volume growth.

Chart 2 - Trauma Service Statistical Information

Reporting Period: November, 2016 to October, 2017

1 Total number of Emergency Department visits during reporting period:

2 Total number of trauma related Emergency Department visits during reporting period:

3 Total number of Trauma Team Activations for the reporting period: Level 1 full
Level 2 partial
Level 3 consult

4 Total number of trauma patients meeting inclusion criteria:
   a Adult: 
   b Pediatric: 

5 What is the upper age limit for pediatric trauma in your facility?
   15

6 Number of trauma patients:
   a From ED to OR
   b From ED to ICU
   c From ED to floor
   d To trauma service
   e To orthopedic service
   f To neurosurgical service
   g To other surgical service
   h To non-surgical service

7 Total number of patients admitted with an ISS greater than 9 to non-surgical service.

8 Number of trauma patients:

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<tr>
<th>ISS</th>
<th>Patients</th>
<th>Mortality</th>
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8 Number of:
   a trauma deaths
   b DOA
   c ED trauma deaths
   d inpatient (including OR) deaths
   e trauma deaths receiving an autopsy

10 How many trauma patients
   a Transferred INTO your facility
   b Transferred IN then needed transfer OUT

11 Transferred OUT to other facilities
   a Transferred to designated trauma centers
     1 Transported by private vehicle
     2 Transported by ambulance
     3 Transported by helicopter/fixed wing
   b Transferred to non-designated facilities
     Please list where patients transferred to non-designated facilities went.
     N/A

Are the numbers provided on chart 2 considered confidential? Yes

Section I - Previous Review

A Has this facility undergone any previous reviews for trauma designation? Yes
   Date: 7/1/2015
1 Briefly describe any improvements to deficiencies or weaknesses from your most recent review.

"**THE INFORMATION CONTAINED IN THIS APPLICATION AND ITS ATTACHMENTS IS CONSIDERED PROPRIETARY AND
CONFIDENTIAL**"

There were no state criteria deficiencies or “met with reservation” found on the last CDPHE review. However, there was a plan of correction (POC) required by the state to address pediatric scope of care. Since that time, UCHealth- Memorial Hospital Central has successfully completed the terms of the plan of correction. Follow-up clearance and notification of POC closure was obtained from CDPHE dated September 1, 2017.

2 Describe administrative changes since the last review and the impact to the trauma program.

The Trauma Program Administration has undergone important transformations since the last review. Paul Reckard, MD, FACS, initially served as the interim Trauma Medical Director for one year is now the Pediatric TMD. Marissa McLean MSN, MBA, RN, CEN, who was previously a TCRN, was promoted to the position of full-time Pediatric Trauma Program Manager.

Thomas Schroeppel, MD FACS was recruited from a Level I trauma center to fill the Adult Trauma Medical Director position in September 2016. Heather Finch, MSN, RN, CEN, TCRN, was hired for the position of Manager of Trauma Services (TPM) in August 2015. Rochelle Armola, MSN, RN, CCRN, TCRN, was recruited to fill the Director of Trauma Services (DTS) position in August 2017.

Chris Cribari, MD, FACS has assumed the UCHealth system leadership position as Medical Director of Trauma and Acute Care Surgery for UCHMG, the multidisciplinary medical group that includes Memorial Hospital Central.

Section II - Hospital Commitment and Participation

A Is there a line item budget for trauma? Yes

B How does this facility’s designation fit into its RETAC destination protocols?

Memorial Hospital Central’s (MHC) trauma program is currently one of two state Level II Trauma centers identified in the RETAC designation protocols to receive trauma from the nearby facilities as well as from extended referral rural communities. MHC provides care for pediatric, adult, and high-risk pregnant trauma patients.

Section III - Prehospital

A List the EMS provider agencies that serve your primary catchment area.

Elbert Fire Department, Tri-Lakes Monument Fire Department, Palmer Lake Fire Department, Calhan Fire Department, Simla Fire Department, Peyton Fire Department, Donald Wescott Fire Department, Colorado Springs Fire Department, American Medical Response, Manitou Springs Fire Department, Cascade Fire Department, Green Mountain Falls Fire Department, Ute Pass Regional EMS, Aramark Pikes Peak, Pikes Peak Highway Patrol, Broadmoor Fire Department, Stratmoor Hills Fire Department, Security Fire Department, Action Care Ambulance, Rocky Mountain Ambulance, Rural Metro Ambulance, Fountain Fire Department, Hanover Fire Department, Tri-County Fire Department, Edison Fire Department, Colorado Center Fire Department, Ellicott Fire Department, Falcon Fire Department, Schriever AFB Fire Department, Peterson AFB Fire Department, USAFA Fire Department, Fort Carson Fire Department, Evans USA Hospital Ambulance, Highway 115 Fire Department, NORAD Fire Department, Flight For Life, Memorial Star Med-Trans, Memorial Health Emergency Services, El Paso County Sheriff’s Office Emergency Services Division

B Which categories of EMS providers exist in your EMS catchment area.

Volunteer
Paid
C If your facility has physician(s) serving as medical director for prehospital agencies, provide the physician name and agencies receiving direction.

The physicians noted below are all members of the MHC emergency medicine group.

Dr. Leslie Moats - Memorial Star Med-Trans

Dr. David Steinbruner - Associate Medical Director: Colorado Springs Fire Department and El Paso County AMR. Dr. Steinbruner is also the Medical Director for: UCHealth Memorial EMS Department, Ellicott Fire Protection District, Limon Ambulance Service, Big Sandy Fire Protection District, Kit Carson County Ambulance Service, Community Ambulance Service, Cheyenne County Ambulance Service.

Dr. Kate Steinberg - Primary Medical Director - Peyton Fire Department, Calhan Fire Department, Elbert Fire Department

Dr. Clinton (CJ) Fox - Primary Medical Director: Karval Fire Department, Hugo Fire and Rescue

Dr. Sean Donahue - Associate Medical Director: Colorado Springs Fire Department, El Paso County AMR Dr. Donahue is also the Primary Medical Director: Security Fire Protection District, Hanover Fire Protection District, Stratmoor Hills Fire Protection District.

Dr. Brett Banks - Associate Medical Director: Colorado Springs Fire Department, El Paso County AMR

Dr. Robin Johnson - Associate Medical Director: Colorado Springs Fire Department, El Paso County AMR

Dr. Matt Angelidis : Associate Medical Director- UCHealth Memorial EMS Department

D Does your facility own/operate an EMS agency? No

E What percentage of trauma charts includes prehospital trip sheets? 95.00%

What is your process for getting those reports if not left when the patient arrived at your facility? Trauma Service staff has electronic access for the primary transport agencies for El Paso County. In addition, the Hospital HUB website may be used. Pending or outstanding reports are requested by the trauma services by contacting the EMS liaison who works directly the agency involved to obtain records.

F Describe the process your facility uses to provide EMS feedback for quality improvement purposes.

MHC has a dedicated EMS Coordinator who works closely with the trauma program, EMS Medical Directors, and regional agencies in the evaluation of care, providing two-way communication, feedback, developing protocols, and implementing changes.

Section IV - Trauma Service

A Describe the admission criteria and services available to: trauma patients

1 Process for admitting to ICU:

Adult critical trauma patients are admitted from the Emergency Department directly to the ICU. If interventions are needed prior to ICU admission, the critical care team accompanies the patient to the OR or IR prior to arriving at the ICU. Surgical Critical Care providers are immediately consulted and assist the trauma surgeons in the management of the patient.

Process for admitting to medical surgical unit:

Patients admitted to Trauma Services needing non-ICU care are admitted directly to the trauma surgical acute care unit. Patients with an isolated injury admitted to other specialty services, such as isolated hip fractures, may be treated on other medical-surgical units. Patients are typically admitted through the emergency department.
2 pediatric trauma patients
Pediatric trauma resuscitation and emergency care is managed by the adult trauma surgeons. Pediatric trauma surgeons are available to respond as needed 24/7. For emergent consults, the pediatric surgeon is available within 30 minutes. Pediatric trauma patients may be admitted to the pediatric unit or PICU on the adult trauma service overnight and are transferred to the pediatric surgical service in the morning. There are pediatric hospitalists on the pediatric unit and the pediatric intensivist available to the PICU 24/7 available to support the pediatric surgeon.

B Trauma Team Activation
1 Who has the authority to activate the trauma team and how is the team notified?
Field activations are honored by the ED staff. EMS, ED charge RN, ED physician, and / or the Trauma Surgeon can activate the trauma team for adult and pediatric patients. Team members respond as defined in the Two-Tiered Trauma Team Activation policy. Notification involves a call placed to the Alarm Dispatch Center to have them send the appropriate trauma alert messaging to the appropriate trauma team group via the Everbridge paging notification system.

2 Describe the personnel and their roles on the trauma team for each level of activation.
The trauma team consists of multidisciplinary members experienced in the care of the multisystem trauma patients. Members have specific roles and responsibilities that allow for efficient and seamless access to equipment and personnel.

FULL TEAM LIMITED TEAM
Trauma Surgeon X
Trauma APP X
PGY-4 or 5 Surgery
Resident X

ED Physician X X
ED Charge Nurse X X
Primary ED Nurse X X
Secondary ED Nurse X X
Recorder RN X X
Respiratory X
ICU Charge RN X
OR Charge RN X
Radiology Technician(s) X X
ED Technician(s) X X
PICU RN X (Peds) X (Peds)
Pharmacist X X
Peds Pharmacist X (Peds) X (Peds)

• Trauma Surgeon – functions as Team Leader in Full Trauma Activations. Coordinates and directs trauma team in care of the patient. Performs initial assessment and communicates findings. Directs all surgical procedures, interventions and consultations.

• Trauma APP – performs duties as assigned by the Trauma Surgeon to include, assessment, coordination of care tasks, and assistance with procedures.

• PGY4 and 5 Surgical Resident – functions as a physician under the direct supervision of the trauma surgeon. Responsibilities may include: assessment, coordination of care tasks, and assistance with procedures.

• ED Physician - in Full Trauma Activations is responsible for airway assessment and maintenance, to include managing rapid sequence intubation (RSI) and indicated. Also responsible for maintaining cervical spine immobilization as appropriate. The ED Physician serves as team leader in Limited Trauma Activations. This includes: coordinating and directing trauma team, performing initial assessment of patient, and collaborating with the Trauma Surgeon on the continued care of the patient.

• ED Charge RN - directs activation Full or Limited Trauma Team Alerts based on activation criteria and/or communication with ED physician. Assembles team and assigns roles. Responds to Full and Limited activations, acting as a liaison facilitating care coordination, ensuring adequate resources, notifying blood bank with Massive Transfusion Protocol (MTP) activations, relays necessary information to trauma team, facilitates family presence, initiates debriefing as needed.

• Primary Trauma RN - Receives patient, obtains vital signs, places patient on cardiac, p/ox monitor. Ensures closed-loop...
communication with trauma leader and ensures team support for procedures and interventions. In absence of Charge RN, will assign blood bank communication for MTP, monitors for crowd/noise control, and delegate tasks as necessary. Accompanies patient to other departments. Responsible for ensuring accurate and complete documentation. Role is same with Limited activations working with ED physician as team leader.

• Secondary RN - present for both Full and Limited trauma activations. For adults, this role is filled by ED RN. For pediatrics 0-14 years, a PICU RN serves in this role. Secondary RN removes straps/head blocks on backboard under LIP direction, ensures large bore IV access, facilitates appropriate medication administration. May work with pharmacy in preparation and dosage calculation/verification. Assists trauma team leader with procedures. Works with ED Tech to ensure blood specimens are obtained. May assist with fluid resuscitation/blood product administration. Performs other interventions as directed.

• Recorder RN - Present for both Full and Limited TTA. Responsible for recoding all events related to the area and primary/secondary survey findings as dictated by the team lead or designee on the designated trauma record until released by the primary RN. Maintains communication to trauma team members to include: time elapsed, vital signs, medications given, patient changes.

• Respiratory - Respond to Full TTA, assist with airway maintenance, obtains ABG, prep and maintenance of ventilation equipment, may assist with CPR.

• ICU Charge RN - Respond to Full TTA, serves to facilitate admission transfer to ICU. May serve to support fluid RN role, operating rapid transfuser, blood administration, assisting with completing of blood administration documentation.

• OR Charge RN - Responds to ED for Full Trauma Activations and facilitates trauma surgical needs as directed by the Trauma Surgeon (ie. coordinating emergent OR transfer)

• Radiology - Respond to both Full and Limited TTA with portable equipment. CT tech clears table and prepares to receive patient for trauma scans.

• ED Technician(s) - present for both Full and Limited TTA, exposes patient, places armband, obtains labs, prepares procedure trays and equipment. Additional runner tech is assigned to retrieve blood coolers from blood bank for MTPs.

• PICU RN- (see secondary RN). Respond to both Full and Limited TTA. Also serves to facilitate transfer admit to PICU.

• Pharmacist- respond to both Full and Limited TTA. Help to prepare medications, calculate dosages

• Peds Pharmacist - Responds to Peds Full and LTTA (see pharmacist)

C Describe the performance improvement process for appropriateness of transfer and mode of transportation.
All transfers are reviewed at Level I through concurrent identification during daily rounds by the RNTCs. The TPM reviews all transfers in and will follow-up with the sending facility if there are missed injuries or issues identified. Transfers out are reviewed by the TPM and TMD for timeliness (within 4 hour benchmark) and appropriateness of care and transport.

D Trauma Bypass and Divert
1 Have you gone on trauma divert during the reporting period? Yes
   If yes, please list
   a Total number of hours on trauma divert during the reporting period: 14 hours
   b Number of times on trauma divert during the reporting period: 6

2 Total hours of other divert status:
   a ED divert: 0 hours
   b OR divert: 0 hours
   c CT divert: 0 hours

3 Describe how EMS providers, other facilities and your RETAC are notified when your facility is on divert status.
EMResource is updated immediately anytime MHC changes diversion status. EMResource provides an audible and visual alert to PSAPs and dispatch centers in the region. Major provider agencies utilize the text message feature of EMResource to receive these changes as well. The collaborative regions actively utilize EMResource to provide situational awareness of diversion status. The Memorial Emergency Services Liaison, Plains to Peaks RETAC Coordinator, and Pikes Peak MMRS Coordinators are trained and serve as EMSystem regional administrators. The Trauma Program Manager

https://www.hfemsd3.dphe.state.co.us/CEMSISWeb_TraumaDesignation/page4710PrintApplication.aspx
emails a report to the RETAC coordinator on a routine basis, with timely updates post a trauma divert/bypass occurrence.

E  Trauma Medical Director
1  Who is your Trauma Medical Director?  
   Thomas Schroeppep, MD, FACS
2  Describe the authority and involvement of the trauma medical director to oversee the following:
   a  Performance improvement
   The TMD is actively involved in providing direct oversight of patient care from admission through discharge. He is in daily contact with the DTS and TPM to discuss trauma program activities, address patient care issues, system policies and processes, or other administrative needs. The TMD meets formally at least once a week with Trauma quality team members to review cases in which care concerns have arisen, quality audit filters are triggered, or by direct referral. He is also available for concurrent consultation and as needed for patient care review. The TMD provides active oversight to the Trauma System PIPS process and serves as chairperson of both Trauma Multispecialty Peer Review Committee (TMSC) and Trauma Performance Improvement Patient Safety Committee (TPIPS). Trauma registry data is used to analyze trends and opportunities, which is reviewed by the TMD. He is actively involved in PI initiatives including policy and clinical practice guideline development. The TMD ensures that the trauma service is an integral part of MHC through dedicated involvement as a voting member on multiple hospital committees including the acute care, trauma and Medical Executive Committee.

   b  Trauma program policy development and enforcement
   The TMD oversees the development and routine revision of policies, protocols, and clinical practice guidelines through collaboration with specialty liaisons. Evidenced-based practice standards are incorporated from national organizations such as EAST, WTA, and AAST. Practice guidelines may also result from performance improvement opportunities identified in PIPS committee or from a TQIP report. Compliance with clinical practice guidelines and protocols are monitored by the trauma program and reviewed by the TMD. The TMD will communicate variances directly with providers. Compliance of certain policies and protocols are also presented at PIPS committee.

   c  Peer review
   The TMD has full authority for all aspects of trauma care including recommendation of trauma privileges and removal from trauma call panel. Patient care and systems issues undergo a multi-tiered review process. Cases identified with provider issues are reviewed in depth at the secondary level with the TMD. This includes review of deaths, complications, non-surgical admissions, escalations in care, transfers out, etc. At this level, the TMD has authority to make determinations, implement action plans, or close the issue. The TMD communicates directly with providers or trauma PIPS liaisons to solicit feedback, provide direct education, or provide corrective guidance via a collegial conversation. The TMD may also refer to the multidisciplinary trauma PIPS peer review committee (TMSC) for tertiary review. The TMD serves as Chair of the TMSC. Lastly, the TMD delivers Ongoing Professional Practice Evaluations (OPPE) annually and Focused Professional Practice Evaluations as required to trauma surgeon panel.

   d  Regional trauma system development
   The TMD currently serves as Vice Chair of the Colorado Committee on Trauma. He meets with Medical Directors and Trauma Center leadership from many other health systems throughout Colorado. The TMD supports regional RETAC activities in collaboration with the Emergency Medicine liaison and the trauma program staff.

   e  Public and provider education
   The TMD serves as planning committee chair for The Annual EMS and Trauma/Acute Care Surgery Symposium. This educational conference is attended by physicians, nurses, ancillary support professionals, and prehospital providers from across the state and surrounding areas. He is active with development and participation monthly Simulated Trauma Alert Training program (STAT) which is multidisciplinary training inclusive of prehospital agencies. He has traveled to other hospitals in southern Colorado for physician outreach and training. In addition, he has developed and oversees a monthly Trauma Grand Rounds education series that is simulcast and accessible via web. The TMD is also a course director for the Advanced Trauma Life Support (ATLS) Provider and Refresher Courses offered at MHC.

F  Trauma Program Manager
1  Who is your Trauma Program Manager?  
   Heather Finch, MSN, RN, CEN, TCRN
2  Describe the reporting structure for the trauma program manager.
   The Trauma Program Manager (TPM) reports directly to the Trauma Medical Director (TMD) and the Director of Trauma Services (DTS).
3 List other trauma support staff along with titles/duties/responsibilities.

The Trauma Service includes: the Trauma Medical Director (TMD), Associate Trauma Medical Director/Pediatric Trauma Medical Director (ATMD), Director Trauma Services (DTS), Manager Trauma Services (Adult TPM), Pediatric Trauma Program Manager (Peds TPM), four RN Trauma Clinicians (RNTC), one Senior Trauma Registrar (STR), three Trauma Registrars (TR), one Trauma Education Coordinator, a Trauma Outreach and Injury Prevention Specialist (IP), and a full time administrative assistant.

Position Name FTE
Director Trauma Services Rochelle Armola MSN, RN, CEN, TCRN 1.0
Manager, Trauma Services Heather Finch, MSN, RN, CEN, TCRN 1.0
(Peds TPM)
Pediatric Trauma Program Marissa McLean, MSN, MBA, RN, CEN, TCRN 1.0
Manager (Peds TPM)
RN Trauma Clinician Christal Villanueva, BSN, RN, TCRN 1.0
RN Trauma Clinician Valerie McColligan, RN, TCRN 1.0
RN Trauma Clinician Heather Estrada, BSN, RN, CCRN 1.0
RN Trauma Clinician

Trauma Outreach and Injury Prevention Specialist Lori Morgan, MS, Paramedic 1.0

Senior Registrar Joyce Roghair, CSTR, CAISS 1.0
Trauma Registrar Don Guyton, CAISS 1.0
Trauma Registrar Lynne Schmidt 1.0
Trauma Registrar (peds) Amber Nadaeu 1.0

Administrative Assistant Kathy Flahive 1.0

Trauma Education Coord Melissa Held 1.0

The TMD has full authority and is actively involved with all aspects of trauma care as described previously.

The TPMs report directly to the Director of Trauma Services. The DTS provides oversight and direction for all aspects of the Trauma Program. Responsibilities include; regulatory compliance, effectiveness of the PIPS program, trauma education, outreach, administration, marketing, and finance.

The adult and pediatric TPMs collaborate with the trauma medical director(s), the Director of Trauma Services (DTS), and organizational leaders to coordinate trauma care and oversee the regulatory compliance and performance of the trauma program. In concert with the TMD, the TPM responsibilities include the evaluation of policies, guidelines, procedures, standards, and regulations regarding trauma care. They each serve as the hospital representative with the Director, Trauma Services (DTS) and Trauma Medical Director (TMD) for all local, regional, state, and national trauma committees. Each TPM is responsible for all data management of trauma patients in their respective programs.

The Trauma Nurse Clinicians (RNTCs) evaluate the activities and flow of work for trauma patients. They simultaneously collect concurrent quality data while completing comprehensive case review on patients admitted with traumatic injury to evaluate compliance with standards of care. RNTCs are actively involved with the daily care of trauma patients by responding to trauma activations and participating in multi-disciplinary rounds. RNTCs also immediately review any unexpected events during the patient’s course. This ensures all of the appropriate providers are involved and the TPM and TMD are aware of the event. They collaborate with multidisciplinary teams to address program development, problem identification, problem resolution, regulatory compliance, and systems/performance/outcomes measures. They help with the development, implementation, and evaluation of process improvement initiatives. RNTCs function as expert resources, assist as liaisons between medical and nursing/allied staff, serve as a resource to staff, and provide extensive trauma education.

The Senior Trauma Registrar serves as a trauma registry subject matter expert and resource regarding database content, coding, and reporting. In addition to data abstraction, she writes and maintains reports from the registry. She acts as primary vendor contact regarding updates to database. She provides primary support for data validation.

The Trauma Registrars collect, abstract, and report on data collected from the trauma patient medical records. They perform diagnosis, procedure, and injury coding in accordance with national standards. They review documentation for compliance with quality assurance standards and regulatory requirements. Trauma registrars may assist in the preparation of reports for a variety of internal and external sources. TRs support data validation and regulatory survey
The full time injury prevention specialist has the responsibility for the surveillance and development, coordination, implementation, and evaluation of evidenced based injury prevention programs for the trauma center. The IP specialist coordinates outreach activities, seeks and manages grant funding, and provides oversight for programs such as SBIRT and B-CON.

The full time education coordinator is responsible for supporting internal and external educational offerings for the trauma program. She organizes and administers trauma-related education and ensures that mandatory trainings take place. She serves as the coordinator for the monthly STAT trainings and bi-monthly ATLS courses. In addition, the education coordinator organizes the Annual EMS and Trauma/Acute Care Symposium and supports the recruitment of nationally recognized healthcare providers to speak. This individual is also monitoring CMEs and other course credits for providers.

The Administrative Assistant (AA) supports 3 TMDs, 3 TPMS, and the DTS. She performs a vast array of duties to support the trauma services administration. She composes, types, and transcribes correspondence, forms, reports, presentation materials, meeting minutes, and other written communications. She receives customers and handles general inquiries. In addition, the administrative assistant schedules/coordinates meetings, conferences, special events, appointments, and travel arrangements. She maintains assigned calendars. The AA maintains filing system, orders and stocks supplies. She also helps to support regulatory survey preparation.

Trauma services program also benefits from the support of other positions in the hospital such as: the Trauma Research Department (3.0 FTEs); EMS Department (5.0 FTEs); and an Emergency Preparedness Manager (1.0 FTE).

**G Other**

1. **Describe the trauma call schedule and if any specialties (including general/orthopedic/neurosurgery and anesthesiology) are on call at more than one facility simultaneously, if applicable.**

   The Adult Trauma Surgeons provide 24/7 in-house call coverage with a published back up call for trauma surgeons. During the week (Monday to Friday), the call shift is 0600 to 1800 for Acute Care Surgery with night coverage by another acute care surgeon from 1800 to 0600. An additional surgeon assists with rounds at 0600 and functions as the back-up trauma surgeon (24-hours). Weekends (Saturday/Sunday) are covered by one surgeon for 24-hours with a back-up surgeon on call.

   The Surgical/Trauma ICU is covered by a surgical intensivist at all times. This is in addition to the coverage described above.

   Pediatric trauma resuscitation and emergency care is managed by the adult trauma surgeons. Pediatric surgeons are on call and available to respond as needed 24/7. For emergent consults, the pediatric surgeon is available within 30 minutes.

   The adult and pediatric Neurosurgeon and Orthopedic surgeons are both on-call 24/7 and are dedicated to the Memorial Trauma Services. The hospital has a formal contingency plan for times in which the neurosurgeon or orthopedic surgeon may become encumbered.

   Anesthesiology on-call is staffed by 5 call positions: 1 OB, 1 Trauma, 3 backup. OB and Trauma are in-house at all times (24/7).

2. **Describe the performance improvement process for evaluating physician availability and response time to trauma activations.**

   Surgeon availability and response time are monitored daily by the RNTCs. Should a specific issue be identified, the RNTC would concurrently discuss the problem with the TPM and/or TMD. If needed, the issue could go to the Trauma MSC (peer review) committee. The adult Trauma Surgeon in house 24/7 and in the trauma bay resuscitation area prior to the patient’s arrival the majority of the time and within the required 15 minutes of notification (98%). The RNTC monitors response time and reports any discrepancies to the TPM/TMD.

3. **If a neurosurgeon takes trauma call, provide neurosurgical activation criteria, response time requirement and volume of trauma related emergent (within 24 hours) neurosurgical operative procedures for the past year.**

   MHC criteria for emergent neurosurgeon response within 30 minutes is:
   1) Hypotension SBP less 90 or oxygen saturation less 90 greater than 5 minutes associated with spinal cord injury or severe TBI (GCS<10).
   2) Acute traumatic changes on head CT associated with severe TBI GCS<10 in absence of intoxication.
   3) Acute extra-axial hemorrhage greater12 mm thick, and/or greater10mm shift, with lateralizing neurologic exam or GCS<13.
   4) Unstable spinal injury with neurologic deficit or spinal cord compression.
   5) Status Epilepticus associated with trauma and acute change on head CT
4 List any specific credentialing procedures and/or criteria for physician participation in trauma call.

CORE privileging has been established for trauma surgery MHC, which include:

- Completion of an ACGME or AOA accredited postgraduate training program in general surgery;
- Current certification or active participation in the examination process, leading to certification by the American Board of Surgery, American Osteopathic Board of Surgery or the Royal College of Physicians and Surgeons;
- Provide documentation of competence and experience in trauma care or, completion of a trauma surgery or critical care surgery fellowship program;
- Approval by the trauma director;
- Must meet and maintain trauma CME as required by the ACS - 16 hours annually or 48 hours in 36 months (pediatrics trauma privileges 4 hours annually or 12 CME hours in 36 months must be in pediatric trauma care) to be tracked by Trauma Service;
- Required to have taken PALS one time

Section V - Emergency Department

A Emergency Department Medical Director. George Hertner, MD

B Describe physician coverage in the emergency department.

Dr. George Hertner is the Emergency Department Medical Director. David Steinbruner, MD is the ED Physician Liaison for Trauma PIPS.

ED physicians stagger their shifts for peak staffing times. The ED is scheduled with up 8 physicians and during the highest volume times (1700). The lowest minimum coverage falls to 2 physicians during lowest volume hours of 0300-0500. The ED physicians are supported by ED Advanced Practice Providers. APPS who are current with ATLS may respond to limited trauma activations to assist the ED Physician who is lead, help to scribe, enter orders, or assist with procedures.

DR 1: 0500-1400 DR 7: 1300-2300
DR 2: 0600-1500 DR 8: 1700-0100
DR 3: 0900-1700 DR 9: 1700-0100
DR 4: 0900-1900 DR 10: 1700-0300
DR 5: 1000-1800 DR 11: 2000-0600
DR 6: 1200-2200 DR 12: 2100-0600

C Describe emergency department staffing patterns and qualification requirements for: PAs, APNs, RNs, LPNs, certified EMS providers and other emergency department personnel.

ED staffing patterns are based upon volume needs in the Emergency Department, which are tracked and re-evaluated frequently. Daily schedule includes one RN and one ED Tech dedicated to our trauma/resuscitation rooms each shift and an RN assigned to a “float nurse” position to help support the trauma assignment as well as the patient care unit that sits adjacent to the trauma rooms. The charge nurses are very skilled at rapidly re-arranging assignments to respond to multiple trauma team activations. ED APPs are assigned to the non-trauma resuscitation care areas. Any advanced practitioners who participate in the initial evaluation of trauma patients must have current ATLS provider certification. ED technicians must have worked in the department for 6 months and must have a charge nurse recommendation before taking the trauma training courses. Once they qualify, technicians are provided with 5 hour of didactic classes and 24 hours of trauma room orientation with a designated preceptor. They also participate in the STAT program.

Discipline APP (PA/NP)
Qualification Requirements:
All APPs will be: licensed in the State of Colorado; certified; appropriately credentialled by the hospital medical staff. APPs that resuscitate trauma patients are current in ATLS.
Daily Staffing Pattern
6a-4p x 1 APPs
9a-7p x2 APPs
11a-9p x3 APPs
3p-1a x1 APP
4p-2a x1 APP
5p-3a x1 APP

Discipline: RN
Qualification Requirements: CO RN License, BLS, ACLS, ENPC or PALS, TNCC, NIHSS

Daily Staffing Pattern:
7a-7p x 6 RNs 12p-12a x 1RN
7a-3p x 4 RNs 1p-1a x 2 RN
9a-7p x 5 RNs 3p-1a x 1 RNs
9a-3p x 1 RN 3p-3a x 3 RNs
10a-10p x 2 RNs 7p-3a x 2 RNs
11a-11p x 3RNs 7p-7a x 10 RNs

Discipline: EMT
Qualification Requirements: CO EMT License, BLS, IV certification

Daily Staffing Pattern:
7a-7p x 4 EMTs 1a-1p x 2 EMTs
9a-3p x 3 EMTs 3p-3a x 2 EMTs
11a-11p x 4 EMTs 7p-7a x 4 EMTs

Discipline: Unit Clerks
Qualifications: None

Daily Staffing Pattern:
7a-7p x 1 UC 7p-7a x 1 UC

Discipline: Forensic Nurses
Qualifications: IAFN Education Program, BLS

Daily Staffing Pattern:
7a-7p x 1 FNE 7p-7a x 1 FNE
1p-1a x 1 FNE

Discipline: Associate Nurse Managers
Qualifications: CO RN License, BLS, ACLS, ENPC or PALS, TNCC, NIHSS

Daily Staffing Pattern: Varied hours and days to meet needs of the department

Discipline: Manager
Qualifications: CO RN License, BLS

Daily Staffing Pattern: Monday- Friday

Discipline: Director
Qualifications: CO RN License, BLS

Daily Staffing Pattern: Monday-Friday

D Is there a TNCC-certified nurse on duty in the ED 24/7/365? Yes

E What are the specific trauma-related educational requirements or qualifications for nursing staff in the ED.
Nurses with previous emergency or critical care experience are given preference upon hiring. Nurses must be verified in BLS, ACLS, TNCC and ENPC or PALS within 12 months of hire. Orientation to the ED consists of 6-8 weeks of precepted time in the department for a nurse. ED nurse residents are novice nurses and have an orientation period of 20 weeks. After verifying BLS, ACLS, ENPC or PALS, and TNCC status, new nurses get an eight hour Trauma Essentials class which covers didactic and hands-on skills with equipment. After attending this class, the RN spends 24 hours of precepted time in the trauma rooms, and are trained to be able to function in the secondary and recorder roles for trauma. To be considered for primary nurse, the nurse would need to have served in the secondary/recorder roles for 6 months, obtain charge RN recommendation, attain external jugular IV certification and spend an additional 12-24 hours of precepted time in the trauma bays focusing on the primary RN role

1 Percent of Registered Nurses with the following credentials:
   a TNCC: 86.00%
   b ACLS: 92.00%
Section VI - Radiology

A Describe the performance improvement process for the requirement to have radiology personnel available within 30 minutes of notification of trauma team activation.
Radiologists, Radiology Technologists, CT Technicians, and MRI staff are in-house 24/7. Angiography is staffed Monday through Friday 07:00-17:00 with on-call after hours and weekends.
The interventional radiology team maintain a 30-minute response time. On-call response times are tracked on a spreadsheet maintained in radiology. The RN Trauma Clinicians also review trauma patients’ procedures for timeliness. Any fall-outs would be sent to the radiology leadership for review with response, which would then be reviewed by the TPM and TMD, and if needed escalated to the Trauma MSC for final review, action plan and loop closure.

B What is the facility defined response time for radiologists:
1 Via telemedicine? 0 minutes
2 In person when requested by the trauma team leader? 5 minutes

C If ultrasound is utilized outside of radiology, describe the uses and credentialing process for physicians.
re: B1 - Radiologists are in house 24/7. Telemedicine is N/A;
re: B2- Radiologists are immediately available in-house 24/7 for emergent needs

The emergency department physicians and trauma surgeons utilize Focused Assessment Sonography for Trauma (FAST) to evaluate any trauma patient with concern for intra-abdominal hemorrhage or cardiac tamponade. Credentialing for FAST exams is based on proof of training in residency or through an approved course such as the ACEP Emergency Ultrasound Course.

D What type of monitoring equipment is available for resuscitation in the radiology department?
Patients requiring continuous monitoring travel with a trauma trained nurse and are attached to portable monitors. Full resuscitative equipment is readily available to provide advanced life support for adults or pediatrics including; emergency medications, difficult airway management, and defibrillation.
The radiology suite also has a crash cart with airway support equipment.

E Who accompanies and monitors the trauma patient while in radiology?
A critical care nurse accompanies the critically injured patient to radiology for continuous monitoring and patient care. In most instances, the trauma surgeon also accompanies the patient. A respiratory therapist is always present if the patient is intubated.

F How are tele-radiology capabilities utilized?
Off-site tele-radiology services are not utilized at MHC due to the Radiologist availability in-house 24/7. Trauma surgeons and sub-specialists; including neurosurgery, orthopedic surgery, and pediatric surgery have access to digital imaging from remote sites.

G Describe your process for dealing with interpretation discrepancies.
A call or direct conversation is made if there are questions or potential misses. All images are read and dictated by the radiologist, which are then reported in the electronic health record. For patients on the trauma service, the APPs (or surgeon) routinely monitor for potential radiology misreads. Cases are brought forward to the TMD and appropriate steps are taken to address.
Radiology tracks interpretation errors and missed injuries (misreads) through a randomized peer review process and through the Radiology Monitoring and Evaluation Committee.
Section VII - Operating Room and PACU

A  Number of operating rooms: 13

B  Is there a trauma dedicated OR? Yes

C  Describe the procedure for STAT OR access and the performance improvement process for addressing access issues.
   OR charge RN is paged with the highest level of trauma activations and there is always one OR room open for the
   emergent arrival of a trauma patient. The Trauma PIPS program monitors for delays or emergent response to OR. There
   have been no reported or found delays for emergent OR access.

D  What are the specific trauma related educational requirements/qualifications for OR nursing staff.
   Upon hire, qualified OR nurses must have Colorado RN license, 6 months nursing experience, or graduated from an
   accredited nursing program and have current BLS certification. Nurses who have obtained their Bachelor’s degree in
   Nursing and have 1 year experience are preferred. OR staff nurses go through perioperative training course. In addition,
   the nurses attend a yearly mandatory skills day, which includes Trauma skills such as cervical collar care and rapid
   infusers. They also have the opportunity to attend the Annual Trauma and Critical Care Symposium and other
   local/regional trauma offerings. Nurses participate in the STAT program in which a critical trauma operation is simulated
   in one of the Operating Suites.

E  Who is the Medical Director of Anesthesiology? Johnathan Rowell, MD

F  Describe the performance improvement process for anesthesia coverage and response times.
   E - Dr. Rowell is the Anesthesia Physician Liaison for Trauma PIPS

   Anesthesiologists are in house 24/7 and present for all operations. Anesthesiology coverage includes two in-house
   anesthesiologists and three on-call anesthesiologists. The anesthesiologist for trauma is in house at all times and
   available for emergent trauma procedures. The nurse in charge assigns staff members to the trauma room. If the
   required personnel are not present, the Operating Room (OR) Charge Nurse will notify the on-call team. The call team is
   required to acknowledge receipt of page within five minutes and responds to the hospital within 30 minutes. The OR
   Charge RN maintains a call-in log and tracks response times. The tracking log is shared with the trauma program
   manager on a routine basis. Additionally, any concerns with anesthesia coverage and response times can also be directly
   reported to the TPM/TMD or have an incident report filed electronically.

G  What are the hours of operation and staffing for the post anesthesia care unit?
   Mon thru Sat: staffed with 2 RNs 24 hours/day
   Sun: 0700-1900 staffed with 2 RNs
   1900-0700: staffed with 1 PACU RN + 1 on-call RN
   Holidays: 2 RNs on-call

Section VIII - Intensive Care Unit

A  Number of:
   1 ICU Beds 36
   2 Surgical ICU Beds 6
   3 Neurosurgical ICU Beds 6
   4 Trauma ICU Beds 11

B  who is the ICU surgical director or co-director?
   Brian Leininger, MD, FACS
C Who is the ICU surgical director or co-director for pediatric trauma patients?
Paul Reckard, MD, FACS

D Which physician specialty has primary responsibility for managing:
1 adult trauma patients in the ICU
RE: A 1-4: Adult ICU - has 36 beds total and is comprised of 5 subsections. However, it is a blended unit, which allows flexibility to adjust to patient population needs. General breakout is: Unit A (Neuro) 6 beds; Unit B (Trauma) 11 beds, Units C/D (Med-Surg ICU) 12 beds; Unit E (Cardiac) 7 beds.

The surgical critical care, in conjunction with the attending Trauma surgeon, is in charge of the trauma patient in ICU. New trauma admissions that need critical care services are initially evaluated and resuscitated by the trauma surgeon on-call. If an ICU admission is needed, the surgical critical care physician is consulted for assistance in management into the ICU. An intensivist is always immediately available to the ICU 24/7.

2 pediatric trauma patients in the ICU
RE: A 1-4: Peds ICU - has 12 beds total. It is also flexible in use of rooms which serves to accommodate patient population needs. (Any can be used for Trauma, Neuro, Medical, Surgical, etc.)

Pediatric trauma resuscitation and emergency care is managed by the adult trauma surgeons. Pediatric trauma surgeons are available to respond as needed 24/7. For emergent consults, the pediatric surgeon is available within 30 minutes. Pediatric trauma patients may be admitted to the pediatric unit or PICU on the adult trauma service over night and will be transferred to the pediatric surgical service in the morning. There are pediatric hospitalists on the pediatric unit and pediatric intensivist available to the PICU 24/7 to support the surgeon.

E What additional physician resources are readily available to the trauma patient in the ICU?
During daytime hours:
An intensivist is always immediately available.

During after hours:
An intensivist is always immediately available in-house 24/7.

F What are the specific trauma related educational requirements/qualifications for nursing staff treating adult trauma ICU patients?
All ICU RNs must be ACLS certified and complete TNCC as a one-time class. ICU RN credentialing and orientation to trauma patient care also consists of completion of a hospital based trauma education course “Beyond the Golden Hour”. Beyond the Golden Hour (BTGH) is a basic trauma nursing class focusing on acute care of the trauma patient after resuscitation phase. Subsequent to this initial training, the ICU trauma trained nurse advances to more complex trauma patient care after successful completion of a department specific advanced trauma course, “Trauma Core”. All ICU Charge RNs who respond to the ED for trauma teams have had TNCC.

G What are the specific trauma related educational requirements/qualifications for nursing staff treating pediatric trauma ICU patients?
Nurses are hired into the PICU with varying levels of nursing experience: PICU, adult ICU, pediatric med/surg, and new grads. New grads begin their residency on the pediatric floor and receive 3 months of orientation then work independently on the floor before transferring to the PICU where PICU orientation continues for an additional 8 weeks. Orientation for the others hired into PICU is tailored to their experience level.

Before independently caring for trauma patients the expectation is nurses must complete the following trauma focused online courses: pediatric traumatic brain injury, thoracic injuries, abdominal trauma, orthopedic trauma, spinal column/cord injuries, Diabetes Insipidus / SIADH, Disseminated intravascular coagulation, intracranial pressure monitoring, and nursing management of chest tubes are completed. Competency validation is completed on the following topics: ABG analysis, Abuse, ICP monitoring, EVD, NPI Pupillometer, Neuro, Ventilators, End of Life Care, Rapid infuser and Hot line.

PICU staff certifications:
1. TNCC: 100%
2. PALS: 100%
3. ACLS: 100%
4. ENPC 8%
5. CCRN: 28%
H How many RNs:
1 work in the ICU
2 left the ICU in the reporting year?
3 were hired in the reporting year?

I Percentages of staff with the following certifications:
1 TNCC: 33.00%
2 CCRN: 21.00%
3 ACLS: 100.00%
4 PALS: 0.00%

Section IX - Laboratory and Blood Bank

Laboratory

A Describe the performance improvement process for ensuring laboratory service availability 24 hours daily.
The laboratory staffing plan includes coverage 24/7. Electronic reporting is filled out by staff to report any delay obtaining lab samples/results. Also, in-depth reviews of the chart by the RNTCs may identify any delay or inaccuracy of lab results. These findings are relayed to the laboratory/blood bank liaison and followed by both the trauma services and lab leaders for trends or need for process improvements.

B Describe point of care testing in your facility.
Point of Care can be used to perform labs including: ABG, Lactates, Troponin, Pregnancy Test, and Glucose testing.

Point of Care testing available in the emergency department includes:
• iStat: Basic Metabolic Panel, Lactate, Troponin
• Nova Glucometer - whole blood glucose
• Urine Pregnancy via kit test

Point of Care testing available in the OR includes:
• iStat: ACT
• Nova Glucometer - whole blood glucose
•ABL90: Lactate, Blood Gases with or without electrolytes and HandH

Point of Care testing available in the ICU includes:
• ABL90: Lactate, Blood Gases with or without electrolytes and HandH
• Nova Glucometer - whole blood glucose

Point of Care testing available in the PACU includes:
• Nova Glucometer - whole blood glucose

Point of Care testing provided by respiratory therapy throughout the facility includes:
• iStat: Lactate, Blood Gases with electrolytes and HandH

C Describe the facility defined response time for STAT orders in the ED.
ED collects their lab specimens. All laboratory orders originating within the ED default to a STAT priority. The majority of tests approved for STAT testing are expected to be resulted within 45 minutes of receipt into the laboratory. There are processes in place for contacting the laboratory charge tech to further expedite if a need arises.
STAT turn-around time averages (from receipt of specimen in laboratory to result verification):
ABO Type Specific Blood 10 minutes
CBC 10 minutes
Electrolytes (CMP) 30 minutes
Coagulation Profile (ptt) 20 minutes
Drug Screen/Toxicology 15 minutes

D Describe the facility defined response time for STAT orders in the ICU.
ICU collection can be either by nursing or phlebotomy staff. Patients that are line draws are always performed by
nursing. Emergent tests should be drawn by bedside staff to expedite
STAT Turn-around times are the same as listed above.

Blood Bank

E List your source(s) of blood products.
Memorial maintains a contract with Bonfils Blood Center to supply blood and other blood products. The inventory at Memorial Hospital North is accessible to MHC for sharing in emergent situations

F Describe the quantity of blood products immediately available.
There are 10 units of PRBC (6 O-positive; 4 O-negative) and 2 units of thawed plasma maintained in a dedicated blood refrigerator in the ED Resuscitation room. Additional blood products are transported via regulated coolers from the blood bank to the ED or requesting department.

The blood bank also has, on average, 170 units of PRBCs, 250 units of plasma (8 of which are pre-thawed), 6 apheresis units of platelets, and 28 units of cryoprecipitate.

G Describe the performance improvement process for evaluating blood product access and use.
Massive Transfusions are monitored concurrently by the trauma program. Each MTP activation is reviewed for balanced transfusion/ appropriate ratio and turnaround time. There is also a Trauma PIPS Blood Bank Trauma subcommittee that meets bi-monthly to review and collaborate on trauma and shared quality measures and process improvement projects.

Turn-around times:
- Un-crossmatched, non-type specific blood is immediately available.
- Blood type for switching to type specific blood: 10 minutes.
- Full Cross-matched, type specific PRBCs: less 60 minutes.

Section X - Specialty Services

A Burn Services

1 Is your facility a verified or recognized burn unit? No

2 If your facility does not have a burn unit, are you aware of and do you follow the state burn unit referral criteria? If no, please explain.
Yes- Patients are transferred for definitive burn care based upon American Burn Association (ABA) burn transfer criteria guidelines and State rules.

Acute Burn Injury: Adult and Pediatric
The American Burn Association (ABA) burn criteria is considered is used for consideration of transfer and includes:
- Partial-thickness burns greater than 10% total body surface area.
- Burns that involve the face, hands, feet, genitalia, perineum, and or major joints.
- Third degree burns in any age group.
- High voltage electrical burns including lightning injury.
- Chemical burns.
- Inhalation injury.
- Burn injury in patients with pre-existing medical disorders, which could complicate management, prolong recovery, or affect mortality.
- Any burn patient with concomitant trauma in which the burn injury poses the greatest risk of morbidity or mortality.
- A lack of qualified personnel or equipment for the care of children.
- Burn injury in patients who require special social/emotional and/or long-term rehabilitative support, including cases involving suspected child abuse or substance abuse.

3 If your facility has a burn unit, describe acute and long term rehabilitation services provided for burn patients.
N/A (MHC does not have a burn unit)
Neurosurgical/Ortho Spine Services

1 Describe the admission and transfer criteria for patients with brain injuries.
   MHC treats all patients with traumatic brain injuries. There is dedicated unencumbered neurosurgical coverage to care for all traumatic brain injury. MHC also has transfer agreements in place with Level I and II centers with special capability for managing neurologic trauma. The acute management of the patient is managed collaboratively by the critical care services and acute care neurosurgery team.

2 Describe the admission and transfer criteria for patients with spinal cord and/or column injuries.
   MHC treats all patients with spinal column and spinal cord injuries. There is dedicated unencumbered neurosurgical coverage to care for all spinal cord injuries. MHC also has transfer agreements in place with Level I and II centers with special capability for managing neurologic or orthopedic trauma.

Neurosurgery Liaison

John McVicker, MD, FACS

4 Does your facility have a neurosurgeon or orthopedic surgeon available with special qualifications in spinal column management? If yes, please describe.
   Yes-
   Spinal cord trauma is cared for exclusively by neurosurgeons at MHC who are credentialed to provide acute spinal cord management.
   Surgeon availability and response time are monitored daily on all trauma patients by the RNTCs. Any identified issue is concurrently discussed with the TPM and TMD. If not resolved, the discussion may go to the Trauma MSC (peer review) committee.

Orthopedic Services

1 Describe the process for ensuring OR availability for emergent orthopedic procedures.
   There is block time dedicated to Orthopaedics Monday through Friday 0700-1700 each week. In addition to the block time, the OR utilizes “flex scheduling” which allows the OR Charge RN to assign the next available room for urgent cases. There is always an OR room available for Trauma 24/7 and this room may be utilized for an emergent orthopaedic trauma surgery.

2 Describe the process to ensure OR availability for urgent orthopedic injuries.
   The same process as described above; the peri-operative staffing is available to perform cases into evening and night hours as necessary to facilitate procedures without undue delay.

3 Describe plastic surgery, hand surgery and facial surgery capabilities.
   There is 24/7 coverage for plastic surgery, hand surgery, and facial surgery. Each are included on the daily call schedule.

4 What is the response time when the trauma team leader calls for orthopedic surgery assistance?
   An orthopedic surgeon is promptly available to respond to the resuscitation area within 30 minutes when consulted by the trauma team leader emergently. Emergent criteria are defined in a clinical practice guideline.

5 How many pelvic or acetabular cases were performed at this institution during the reporting year?

6 How many pelvic and acetabular cases were transferred out during the reporting year? Explain why those patients were transferred.

Rehabilitation Services

1 Who is the physician in charge of the rehabilitation services?
   Marc Kelly, MD

2 When do rehabilitative services become involved in the management of trauma patients?
   Rehabilitation services staffs PT in all area of acute care from ED, ICU, and trauma unit. OT and SLP are staffed in ICU and Trauma Unit. Rehab therapy is initiated in its basic form upon patient arrival with careful positioning, splinting, and mobility. Patients are seen in ED when consulted. Inpatient rehabilitation consultation is obtained within 24 hours of admission to determine level and appropriateness of therapy. The therapist will recommend and initiate early rehabilitation interventions appropriate to the patient’s phase of care, including the ICU.
3 **What rehabilitative services are provided to trauma patients in the ICU?**

Physical therapy, occupational therapy, and speech therapy are all available to trauma patients in the ICU. In addition there are Medical Social Workers, Dieticians, Pharmacists, Palliative Care and Discharge Planners available in the ICU.

4 **What is the availability and schedule of speech, physical and occupational therapy services for trauma patients?**

Inpatient acute care therapy staffing at MHC is from Monday through Friday includes 11-14 PTs, 8-10 OTs, and 2 Speech Therapists. On weekends there are 5-7PTs, 2-5 OTs, and 1 Speech Therapist.

Inpatient rehab unit (RPCU) therapy staffing at MHC is from Monday through Friday includes 5 PTs, 4 OTs, and 2 Speech Therapists and 1 Recreational Therapist (RT). On weekends there are 2 PTs, 2 OTs, and 1 Speech Therapist.

5 **Describe pediatric rehabilitation services if different from adult services.**

There are 2 PTs, 4 OTs and 2 Speech therapists that cover M-F from 8am-5pm. For Saturday and Sunday there is a PT on call from 8am-2pm, and OT or Speech from 8am-12pm. Certified Child Life Specialists are involved early and provide daily services as needed and appropriate based upon the patient condition.

6 **Describe transfer agreements for acute and long-term rehabilitation of trauma patients.**

MHC has a 22-bed inpatient rehabilitation unit (RPCU). The RPCU provides rehab for orthopedic injuries, brain injuries, stroke, spinal cord injury, amputation and de-conditioning.

In addition, MHC has a transfer agreements with HealthSouth in Colorado Springs and Craig Rehabilitation Hospital in Englewood.

E **Organ Procurement**

1 **Describe the organ procurement procedures for your facility.**

A referral to Donor Alliance is made within one hour of patient death or a patient meeting “clinical triggers” or “imminent death” criteria to be evaluated for tissue donation. A clinical trigger is defined as:

- A patient on ventilator with a Glasgow Coma Scale equal to or less than 5 (in the absence of paralytics, sedation, or hypothermia protocol)

- Prior to withdrawal of end-of-life care (withdrawal of mechanical or pharmacological support), the initiation of brain death testing, end-of-life family meeting, and if the family inquiries about donation.

The designated healthcare provider who can declare brain death is the attending neurosurgeon, neurologist, or critical care intensivist. The determination of brain death must be made in accordance with accepted medical standards and with Colorado Revised Statutes, § 12-36-136.

The physician uses a checklist to follow criteria. Clinical judgment will play a role in each individual case.

The Donor Information Line (DIL), as the designated referral service, performs eligibility screening and notifies both Donor Alliance (DA) and Rocky Mountain Lions Eye Bank (RMLEB) of eligible donors. It is the responsibility of DA and/or RMLEB to determine the medical suitability of potential donors before the family is approached regarding the option of donation.

The Coroner’s office is notified on reportable cases for clearance. Discussion about the release for organ and/or tissue donation will be coordinated by the recovery agencies.

Approach/ authorization for organ donor is completed by DA coordinators in collaboration with the UCHealth physicians and health care team.

2 **How many trauma patient referrals were there to the regional organ procurement organization in the reporting year?**

3 **How many trauma patient donors were there in the reporting year?**

F **Social Services**

1 **Is there a dedicated social worker for the trauma service?**

   - No

2 **Describe the social services available to the trauma patient.**

   Every admitted trauma patient has a social work consult. Each unit has dedicated social workers assigned to support. Social work participates in daily multidisciplinary rounds.
MHC has 9 FTE medical social workers (MSW) plus 3 part-time MSW who provide on-site services. Monday through Friday there are 8 MSWs scheduled from 8am-16:30 with one MSW working until 19:00. On Saturday and Sunday there are two MSW scheduled each day. Saturday coverage is from 9:30-19:00. Sunday coverage is one from 10:00-18:30, and one from 9:30-19:00.

The medical social worker is a contact for patient and family crisis intervention and counseling. The MSW does not secure placement for behavioral health patients who have been admitted to the hospital, this function is provided by BHE team. MSW will provide needed community resources as deemed appropriate.

If there is a crisis after-hours, Behavioral Health Evaluators (BHEs) are on 24/7 or a call can be placed to the Nursing House Supervisor who can contact the Manager or Director of MSW. Medical social workers are assigned to specific units during the day to provide continuity for patient needs. Evaluations initiated on patients that are admitted from the ED will be transferred to the MSW assigned to that unit the next day. The MSW also facilitates access to community resource and follows up on reportable cases. The medical social workers have been trained to conduct alcohol screening and brief intervention and provide SBIRT on all trauma patients.

Services provided by MSW include: psychosocial assessment; collaboration with BHE regarding mental health evaluations; substance abuse evaluations, including SBIRT; high social risk case finding and screening, information and referral, discharge planning; psychosocial counseling; mental health education; patient and family conferences; patient and family advocacy; evaluation and referrals to appropriate agencies.

Section XI - Performance Improvement

A Performance Improvement and Patient Safety Program

1 How are issues identified and tracked?

There is a multi-modal approach to issue identification in the trauma PIPS program. Audit filters and core measures are developed to identify and monitor key aspects of the trauma program, such as timeliness and appropriateness of care. The RN trauma clinician will refer issues to the TPMs and TMDs as well as enter them into the registry as they are discovered.

The trauma registry is used extensively to support the PI process. Indicators are programmed for automatic capture after entered into the registry and reports are generated monthly to flag cases to be reviewed. Data is abstracted concurrently and retrospectively, and cases are reviewed upon discharge to ensure all issues are identified. Informal referrals from physicians and advanced practice providers are sent to the TPMs for review of systems or patient care concerns. Nurses and other healthcare providers are also encouraged to make informal reports about issues identified either through occurrence reports or through their unit leadership team. The TPMs then review all information generated by the registry and referrals to validate the issues and events through a Level I review. Determination is then made whether to close with tracking and trending or if the issue should progress onto Level II review. Audit filters and issue tracking items are entered into the PIPS PI calendar to support routine monitoring. The PI calendar is maintained by the TPMS and referred to by the Senior Registrar for report generation. Information is reported to TMD and/or PIPS committee, as appropriate.

2 Does your facility use audit filters/indicators specific to trauma? If yes, please list below or attach with your performance improvement plan. (Attachment #34)

Yes

3 Describe the personnel and their roles in the trauma performance improvement process. Who is responsible for loop closure relating to trauma issues?

The MHC PIPS plan includes structured concurrent and retrospective review of trauma care and systems. Daily multidisciplinary rounds allow for concurrent identification of issues, complications, and compliance with practice guidelines. Issues identified are forwarded to the TPM and TMD as indicated for investigation and review at the appropriate level.

Patient data is abstracted into the trauma registry for monitoring and evaluation of trends. Registry data is reviewed in the trauma PIPS committee and is used for performance improvement, administrative, financial, community education and injury prevention support. Trauma registry data is entered, scored, and validated by specially trained trauma registrars that use the standardized state and NTDS data definitions. The registry is overseen by the TPMS and the Senior Registrar who ensures compliance with data definitions, validates data, creates reports, and manages database integrity. Data is benchmarked internally by monitoring monthly/quarterly trends and externally through participation in
the Trauma Quality Improvement Program (TQIP).

Patient care and systems issues undergo a multi-tiered review process. Level I review occurs through data validation and issue investigation by the Registered Nurse Trauma Clinicians (RNTCs) and TPM to ensure information is accurate and appropriate. Issues may be identified concurrently by the trauma team, through rounding, concurrent screening and review, critiques, occurrence reports, referrals, or audit filters. The RNTC and/or TPM may execute follow-up or education on nursing issues and close certain cases at Level I.

Cases identified with system or provider issues, or who meet certain audit filter criteria are then reviewed in depth at the Level II review with the trauma medical director (TMD). This includes review of deaths, complications, non-surgical admits, escalations in care, transfers outs, etc. Action plans may be implemented, the issue may be closed, or the case may be referred to the multidisciplinary trauma PIPS peer review committee.

In Level III review, cases are assigned to physician members in advance to review and present at the trauma multidisciplinary (MSC) peer review committee. Pertinent case information is presented. Reviews are also supplemented by radiology review of PACS imaging. Case determination, action plans, and disposition is determined by the committee members.

Lastly, a case may be referred to another committee or external reviewer for a Level IV review if indicated. This includes cases referred to Hospital Multispecialty Peer Review Committee. All cases reviewed, respective findings and pertinent action plans are documented in minutes. A member of the System Quality Department attends Trauma MSC peer review.

At any level, action plans may be developed. In addition, the trauma education coordinator and injury prevention and outreach specialist both have roles that support the PIPS process. The education coordinator helps to organize internal and external education offerings that support trauma initiatives. The injury prevention specialist is data driven and works to implement evidence-based injury prevention and outreach initiatives to help support the trauma program and improve outcomes.

Loop closure: The trauma medical director in concert with the trauma program manager resolve performance issues related to trauma care and process after the action plan has been implemented, monitored, and the issue has been resolved. The trauma medical director resolves medical provider issues through a similar method including collegial conversations, letters, and ultimately FPPE. Performance is then tracked for issue resolution. If the issue has not been resolved, the provider may be removed from the call panel closing the loop.

4 Give examples of how the performance improvement process has enhanced trauma patient care.
Examples of performance improvement initiatives include:

• Guideline development and education related to the management of the hemodynamically and structurally unstable pelvic fracture. Education included the development of a related injury scenario used in an interdisciplinary STAT (simulated trauma alert training). There have been no issues identified since.

• Change in surgical consult requirement for patients with a positive “seatbelt sign” associated with high energy mechanism of injury.

• Revision of the massive transfusion protocol (MTP) with elimination of a Dr. Blood process to reduce confusion and avoid delays in blood availability. This has resulted in a positive response through MTP monitoring.

• Implementing a NAT alert for the pediatric population to help identify this vulnerable population and avoid delays in treatment. This was done with a wide stake-holder network and has been deployed with staff and provider education.

5 Describe how nursing issues are identified and resolved by the performance improvement process.
The Trauma service works in close collaboration with the nursing leadership from all key patient care areas to identify, resolve, and re-evaluate quality of care in the traumatically injured trauma patient. Trauma nursing care and documentation issues are identified by the RNTCs and addressed directly with the trauma liaison on each unit. The TPM will address trended issues with the respective managers. Key Nursing Leaders also attend the Trauma Performance and Patient Safety (PIPS) committee as well as actively participate in sub-committees.

6 How does your facility monitor physician response times to your highest level of activation?
Response times for the attending trauma surgeon are monitored concurrently by the RNTCs case review. Times are also collected from the trauma registry and reported to the PIPS committee.

7 List all committees that are involved in trauma performance improvement and describe the following: roles,
membership, attendance requirements, issues discussed and how loop closure is documented. Include multidisciplinary or other trauma related committees, morbidity and mortality review, peer review and nursing performance improvement.

There are separate trauma PIPS and multi-specialty trauma peer review (MSC) committees for the adult and pediatric trauma programs. These are held consecutively and are chaired by the respective TMDs. This committee is comprised of all trauma surgeons, specialty liaisons, and the trauma program leadership staff. Minimum attendance is 50% and is monitored monthly by the TMD. The focus of review is on provider-related clinical care.

The adult and pediatric trauma performance improvement and patient safety (PIPS) committees oversee trauma operational and process improvement. It is chaired by the respective adult and pediatric TMDs and co-chaired by the TPMs. It is also comprised of all trauma surgeons and specialty liaisons. Additional membership includes the trauma staff, hospital administration, advanced practice providers, clinical directors, manager of hospital quality, managers, and clinical nurse specialists or educators of key departments. While there is not a required attendance minimum, it is tracked and monitored. This committee reviews any system or operational issues, monthly process audits, clinical practice guideline development and compliance, policies, etc.

In each trauma committee, opportunities for improvement are identified and when appropriate, action plans are implemented. Event resolution is attained after the loop closure plan has been completed and after any related data has been evaluated. Provider-related findings may be forwarded to the Hospital Multispecialty Committee or Medical Executive Committee and may be included in the provider’s credentialing file maintained by medical staff office. Confidential documentation of discussions, cases, judgments, action plans, and loop closure are maintained at each committee and level of review.

B Trauma Registry

1 In your trauma registry, are you tracking patients other than those defined in the inclusion criteria? If so, what types of patients?

In addition to the inclusion criteria for CDPHE and NTDB, the trauma registry also tracks trauma activations who are discharged home from the ED. Basic information is entered into the registry database to include demographics, cause codes, and RNTC review for triage compliance.

2 Give examples of how the registry is used to identify and track opportunities for improvement and injury prevention.

Examples include but are not limited to:

1. Collection, tracking and reporting of Performance Improvement initiatives for all Individual Peer performance and system issues.

2. Specific and general reports provide data for internal and external injury surveillance that leads to strategic injury prevention planning.

3. Monthly, Quarterly and Yearly reports identify progress on initiatives and loop closure as well as identify new trends for review and focus.

4. Data utilized for supporting new technology and processes.

5. Data submitted to the NTDB/ TQIP assists with benchmarking.

C Deaths

1 What committee reviews all inpatient and emergency department trauma deaths?

All trauma related deaths undergo immediate first level review by the RNTCs who notify the TMD, DTS, and TPM by verbal or email report. Deaths are presented at weekly case reviews with TMD for Level II review. Trauma deaths that have opportunity for improvement are referred to Trauma MSC peer review committee for further discussion and Level III review and determination. All trauma mortalities are reported monthly to the Trauma MSC committee.

2 What is your autopsy rate (in percent)?

77.00

3 How does your program use autopsy information?

Final written autopsy reports are requested on a monthly basis. Once received, the autopsy is reviewed by the TPM and TMD. The autopsy is reviewed for findings and injuries. Autopsy reports may be used to confirm injury coding. In addition, autopsy reports are provided to physician reviewers and incorporated into the peer review process and Level II and Level III review with Trauma MSC.

4 Describe several opportunities for performance improvement identified in death review and how that information has been used as an educational opportunity or other performance improvement activity.
Please refer to Section XI, question A-4 for examples. Each were identified from mortality review. Additional examples include:

- **“STRAUMA”** patient management: subsequent to mortality review in cases with patients who presented with both stroke and trauma indications, opportunities for improvement have been identified regarding development of management protocols that help guide TPA, neuro consultation, and CT protocols to include Blunt Cerebrovascular Injury (BCVI) screening.

- **REBOA/ ED Thoracotomy** - implementation of a Geriatric Protocol which outlines fundamental nursing care expectations and recommendations for the elderly trauma patient. Age specific considerations were incorporated into the trauma team activation criteria (SBP less 110 mmHg). An anticoagulation TBI pathway is being drafted in collaboration with the ED for geriatric patients taking anticoagulation medication and sustaining a suspected head injury.

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**Section XII - Education, Prevention and Regional Activities**

A **Educational Activities**

1. **If applicable, describe the general surgery residency program.**

   As a community hospital, Memorial Hospital has partnered with the University Of Colorado School Of Medicine and their Surgical Residency Program to provide continuous clinical rotations in trauma and acute care surgery for PGY5, PGY4 and PGY1 residents.

2. **Describe other specialty residency programs and the interaction with the trauma program.**

   No other disciplines of surgical residencies, however MHC also provides clinical rotations for medical students from the University of Colorado-SOM and Rocky Vista School of Osteopathic Medicine.

3. **Describe any trauma education or outreach sponsored by your facility for:**

   a. **Staff (medical, nursing or allied health)**

      MHC conducts the EMS and Trauma/Acute Care Surgery Symposium annually that includes nationally recognized faculty from multiple disciplines. MHC also provides Advanced Trauma Life Support (ATLS) courses and provides budgetary support for required certifications in TNCC, ENPC, PALS, and ACLS. Staff are encouraged to attend in-house training, including STAT simulations and Trauma Grand Rounds.

      Examples of education provided for the following:

      a. Physicians: Annual Trauma and Acute Care Surgery Symposium, monthly Trauma Grand Rounds and ATLS Provider/Refresher Courses.

      b. Nurses: Interdisciplinary Simulated Trauma Alert Training (STAT); ED Trauma Essentials: Acute Care “Beyond the Golden Hour”; ICU “Trauma Core”; TNCC; Unit-based trauma training; skills labs and newsletters.

      c. Prehospital providers: MHC provides over 1,000 hours of pre-hospital training each year. The Annual EMS and Trauma/Acute Care Surgery Symposium has a dedicated EMS track; weekly Pre-hospital Grand Rounds and monthly case reviews. In addition EMS participates in STAT events and attends Trauma Grand Rounds.

   b. **Other facilities**

      Annual EMS Trauma and Critical Care Symposium, TNCC, ATLS provider and refresher courses, Plains to Peaks RETAC Annual Conference, physician outreach education on trauma including: Arkansas Valley Regional Medical Center in La Junta, Colorado and Parkview Hospital in Pueblo, Colorado. Nursing outreach education per RETAC request to include: Pikes Peak Regional Hospital in Woodland Park, Colorado. Sharing of resources such as trauma resuscitation reference posters for GCS, RSI, and vital signs shared with requesting facilities across southern Colorado.

   c. **EMS providers**

      See previous sections on extensive EMS educational offerings. Routinely provide speakers for EMS education for providers at the Colorado Springs Fire Department that is televised throughout the region and recorded for later viewing. Memorial
Trauma Services is on the planning committee for the 2-day Plains to Peaks Annual EMS Conference for the rural EMS providers.

d **The general public**

In addition to the robust injury prevention programs, MHC provides a continuous flow of education to the public in a variety of venues including health fairs, schools, group speaking engagements, public events that include a safety booth, news stories on television and newspaper, radio broadcasts, webinars, and the hospital website. There are also various ways the hospital reaches out to the public through other websites including you-tube and partner websites, such as cpcan.org and safekids.org.

**4 Training courses:**

a How many ATLS courses did you provide in the reporting year? 3

b How many TNCC courses did you provide in the reporting year? 3

5 **Describe hospital funding allocated for trauma education for physicians and nurses.**

There is a full-time Trauma Education Specialist on staff that is responsible for coordinating and conducting trauma education venues at MHC. Trauma surgeons and trauma staff are also compensated for required trauma CME/CE. MHC sponsors the EMS and Trauma/Acute Care Surgery Symposium annually that includes nationally recognized faculty from multiple disciplines. This conference is offered at a discounted rate for UCHealth employees, physicians, and EMS providers. MHC also provides Advanced Trauma Life Support (ATLS) courses and provides budgetary support for required certifications in TNCC, ENPC, PALS, and ACLS.

**B Injury Prevention**

1 **Who coordinates the injury prevention efforts?**

Lori Morgan MS, Paramedic, Trauma Outreach and Injury Prevention Specialist

2 **Describe the facility’s participation in public injury prevention programs.**

Memorial Hospital has a full time injury prevention specialist who leads programs such as:

A. Stepping On is a multi-disciplinary, evidence-based community fall prevention workshop for people over 60 years of age who have fallen, are afraid of falling or are at high risk for falling. Participants meet for 2 hours a week for 7 weeks. Workshop is highly interactive, and includes topics such as balance and strength exercises, home hazard mitigation, bone health, medication management, vision, community safety and footwear. The program is endorsed by the Centers for Disease Control and the Colorado Department of Public Health and Environment, uses master trainers to sustain the program locally and regionally and has shown a 50% reduction in falls (Mahoney, 2015), from 6 months before to 6 months after the workshop.

B. Prevent Alcohol and Risk-Related Trauma in Youth (P.A.R.T.Y.) is an evidence-based program for teen drivers offered in the hospital and in the schools. This is a 5-hour program in the hospital or a time-modified version for on-the-road.

P.A.R.T.Y. is a multi-disciplinary, interactive program that provides information on anatomy and physiology, mechanism of injury, the effects that alcohol and drugs have on decision making, coordination, concentration and risk. Injury types and complications, legal consequences and the ripple effect are shown through visual and hands-on experiences. 21% of participants would modify risk-taking behavior in a pre-survey versus 57% in a post survey (Ho et al, 2012).

C. Stop the Bleed is a national program that was created by the Hartford Consensus after the 2012 tragedy in Sandy Hook. In this program the public are taught how to stop uncontrolled bleeding through visual presentation and hands on skill practice. Possible delays between the time of injury and arrival of first responders on the scene may occur in many situations. Without public intervention in these situations, many preventable deaths may occur. We began our program in July 2017 and to date have trained 150 people. Classes are offered both at Memorial Hospital Central and at locations within the community, such as public schools, churches and private businesses.

D. Abusive Head Trauma / Non-Accidental Trauma education is offered to parents of newborns and pediatric patient families. The Crying Baby program was developed in 2010 and consists of a mandatory video that newborn parents watch, printed materials (caring for a crying baby, what do if you get overwhelmed and tips for choosing a safe caregiver) and a contract that can be signed by caregivers/parents. We have shared this program with all of the hospitals in our region, as well as various child-care and education programs in the United States and Canada. In addition to the Crying Baby Program, Memorial Hospital has partnered with the Not One More Child Coalition, formed in 2012. This group consists of local government, law enforcement, faith-based, hospital and social providers with a common goal of not seeing one more child die of abuse or neglect in El Paso County.

Additional program offerings and highlights include:

- Think First: brain and spinal cord injury prevention program

https://www.hfemsd3.dphe.state.co.us/CEMSISWeb_TraumaDesignation/page4710PrintApplication.aspx
- Trauma Nurses Talk Tough: a teen and young adult injury prevention program
- Dr. Tiffany Willard presents one of our Outreach Programs to area 5th graders. The program offers students a hands-on opportunity to see what a day in the life of a trauma surgeon may be like. The program focuses on anatomy and physiology, role-playing and making wise choices, like staying away from alcohol and tobacco.

MHC’s trauma program is partnered with the following organizations for injury prevention: AHA/Life Support; CarFit; Child Fatality Review Team; Drive Smart; DUI Taskforce; EMS; HealthLink; Volunteer Services; Not One More Child Coalition; Safe Kids Coalition; Older Driver Coalition; Fall Prevention Network; State Emergency Medical and Trauma Advisory Council (SEMTAC) EMT’s Injury Prevention, Regional Emergency Trauma Advisory Council (RETAC) 1

C Regional Activities

1 What consultation and technical assistance is provided to other facilities and/or RETACs in the following areas:

a Education/Training

MHC provides trauma and emergency medicine educational opportunities throughout Eastern and Southern Colorado to rural hospital staff EMS. The trauma service partners with the health system’s Physician Outreach Program who helps organize specialty physicians such as Orthopedic Surgery, Acute Care Surgery, and Cardiology to visit with providers in Rural Communities. These physicians also provide clinics in areas that otherwise would have no access to these services. Our Injury Prevention Programs have been shared throughout the region including other hospitals, ambulance services, and schools, and sharing of Policies, Protocols to support program development.

b Performance improvement for hospitals and/or EMS

The TPM and TMD will reach out to referring facility programs or physicians to provide feedback on quality of care or systems opportunities identified.

MHC has a dedicated EMS Coordinator who works closely with the trauma program, EMS Medical Directors and regional agencies in the evaluation of care, providing two-way communication, feedback, developing protocols and implementing changes.

c EMS protocol development

The Medical Directors operating in the Colorado Springs region have chosen to utilize a uniform pre-hospital care protocol that is reviewed, evaluated, and modified on an ongoing basis. This is done using stakeholder input, PI opportunities and evidence-based practice changes. MHC has a dedicated EMS Coordinator who works closely with the trauma program, EMS Medical Directors and regional agencies in the evaluation of care, providing two-way communication, feedback, developing protocols and implementing changes.

d Transfer issues

There is direct physician to physician communication with patient transfers. The contact is initiated from the sending facility via dialing the DocLine/OneCall number. This is the UCHealth transfer center line. Conversations are coordinated and recorded, to include the direct physician to physician report. Transfer plan and acceptance may be noted by the receiving physician/charge nurse by entering a pre-arrival note into EPIC EHR.

The Trauma service routinely evaluates all transfers in and out. Initial review is conducted at primary level by RTNCs/TPM and evaluated for appropriateness of care/transfer, timeliness of intervention/transfer, and transfer resources/personnel. All transfer outs are reviewed at a secondary level of review with TMD. Referring facilities receive a phone call and discharge summary. If additional opportunities or recommendations are found, those are communicated with the facility’s Trauma Coordinator/TPM, or the appropriate agency representative.

e Communications

MHC is able to communicate with agencies in the region using a web-based EMS system for system resources as well as communicate with EMS through 800 mHz radios and UHF radios.

The EMS Liaison participates with community agencies and communications centers to identify and resolve communication issues

UCHealth operates a ‘one-call’ system-wide DocLine transfer center that facilitates smooth transfers, ensuring physician-to-physician communication and EMTAL compliance. The DocLine also has an integrated communication center that can dispatch ground or aeromedical services for facilities needing to transfer patients. All calls to DocLine are recorded and available for review if issues arise.

f Data collection

MHC has provided a monthly report to the RETAC’s Prehospital Care Committee, to include information regarding trauma activations arrived by EMS, reconciling over and under triage activations, and transfer out data.

g Other trauma related issues

https://www.hfemsd3.dphe.state.co.us/CEMSISWeb_TraumaDesignation/page4710PrintApplication.aspx
2 Describe your participation or involvement in local, RETAC, state or national activities not otherwise mentioned.

Dr. Schroeppel is the current Vice Chair of the Colorado Committee on Trauma and UCH Memorial hosted the state COT Resident Paper competition in conjunction with the annual UCH Health Trauma and Acute Care Symposium.

David Steinbruner, MD, the EM trauma liaison at MHC is a Governor appointed member of State Emergency Medical and Trauma Advisory Council (SEMTAC). He chaired the task force overseeing rule making for Community Para-medicine and is serving on the Chapter II rule revision task force of SEMTAC.

The trauma program director (DTS) Adult and Pediatric TPMs participate with the Regional Emergency Medical and Trauma Advisory Council (RETC), SEMTAC including the trauma subcommittees of STAC and the Chapter 2 and Chapter 4 rule revision task force. The TPD, TPMs and Senior Registrar actively participate in the Colorado Trauma Network, a state-wide coalition of Trauma Program Managers and Registrars. The Senior Registrar was appointed to participate on the Data Dictionary subcommittee of Trauma Center Association of America (TCAA).

Presentations

Abid Khan, MD
Level 2 Trauma Centers are More Likely to Operate for Blunt Splenic Injury Than are Level 1 or Level 3 Centers. Annual Meeting of the Southeastern Surgical Congress. Poster - February 2017.

Thomas Schroeppel, MD

Tiffany Willard, MD

Eliza Moskowitz, MD (Research Resident)

Rochelle Armola, MSN, RN, CCRN, TCRN

Book Chapters


Committees

Cribari
ACS - COT (Region VIII Chief)
ACS - COT VRC
ACS - COT PIPS
TQIP Best Practices Committee
AAST - Patient Assessment and Outcomes Committee

Leininger
EAST membership and recruitment committee
EAST military committee
Section XIII - Research

If applicable, please attach a copy of your ACS PRQ Research section in the required attachments below.

Required Attachments

Required at the Review

1. For each physician on the trauma panel, please have documentation of 1) board-certification, 2) ATLS course completion, if applicable, and 3) trauma-related CME. See charts 3 through 7.
2. Documentation of surgical response times to trauma team activations.
3. A trauma policy manual or if on-line, demonstrate how information is accessed.
4. Transfer agreements, for burns, pediatrics, pediatric ICU, neurotrauma backup, orthopedic backup and rehabilitation if applicable.
5. Documentation of the QI process to evaluate response time for radiology.
6. Documentation of the QI process for OR availability in response to the request of the trauma team leader.
7. Documentation of the QI process for Anesthesia in response to the request of the trauma team leader.
8. Policy/procedure for opening ICU beds for trauma patients.
9. Agendas, meeting minutes, membership and attendance documentation and policies available for the trauma multidisciplinary committee and the trauma peer review committee
10. Documentation of injury prevention efforts.
11. Reprints of publications and other documents identified in response to Section XIII - Research.
UCH-MHS BOARD OF DIRECTORS
DECEMBER 18, 2017

RESOLUTION AFFIRMING COMMITMENT TO THE PROVISION OF ADULT AND PEDIATRIC TRAUMA SERVICES

WHEREAS, the Board of Directors has discussed the alternative means of providing adult and pediatric trauma care to the citizens of Colorado Springs and the surrounding areas;

WHEREAS, it is the continuing desire of the Board of Directors to provide adult and pediatric trauma care at UCH-MHS;

WHEREAS, it is the belief of the Board of Directors that the provision of adult and pediatric trauma care at UCH-MHS can meet the needs of the community;

WHEREAS, the Board of Directors has been and continues to be committed to providing capable personnel who are immediately available to support adult and pediatric trauma care;

WHEREAS, the Board of Directors has been and continues to be committed to using sophisticated resources, equipment and providing ancillary services, which are available to the physicians in providing the highest quality of care to adult and pediatric trauma patients; and

WHEREAS, the Board of Directors is committed to maintaining priority of access to sophisticated clinical support services as well as to the operating suites and intensive care units for adult and pediatric trauma patients.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors does hereby affirm its commitment and dedication to providing the necessary resources and support for pursuing Level I adult and Level II pediatric trauma designations, the continued success of the adult and pediatric trauma programs, and regionalization of trauma care by:

- Providing capable professional and paraprofessional personnel in trauma care and UCH-MHS Administration who are immediately available to support the Trauma Center designations;
- Providing support to the role of the Trauma Medical Director and Trauma Programs Managers to ensure that trauma patients’ needs are met;
- Providing capable resources to support the Trauma Performance Improvement and Patient Safety Plan;
- Providing capable resources to support the Trauma Registry;
- Providing capable resources to support the outreach education and injury prevention; and
- Providing the resources necessary to advance the knowledge of trauma care at UCH-MHS.

Signed this 18th day of December, 2017.

[Signature]
Chair, Board of Directors, UCH-MHS
A RESOLUTION OF THE MEDICAL EXECUTIVE COMMITTEE
OF UCH-MHS AFFIRMING COMMITMENT TO THE PROVISION OF ADULT AND
PEDIATRIC TRAUMA SERVICES

WHEREAS, the Medical Executive Committee has discussed the alternative
means of providing adult and pediatric trauma care to the citizens of Colorado Springs
and the surrounding areas;

WHEREAS, it is the continuing desire of the Medical Executive Committee to
provide adult and pediatric trauma care at UCH-MHS;

WHEREAS, it is the belief of the Medical Executive Committee that the
provisions of adult and pediatric trauma care at UCH-MHS can meet the needs of the
community;

WHEREAS, the Medical Executive Committee has been and continues to be
committed to providing capable personnel who are immediately available to support
adult and pediatric trauma care;

WHEREAS, the Medical Executive Committee has been and continues to be
committed to using sophisticated resources, equipment and providing ancillary services,
which are available to the physicians in providing the highest quality of care to adult and
pediatric trauma patients; and

WHEREAS, the Medical Executive Committee is committed to maintaining
priority of access to sophisticated clinical support services as well as to the operating
suites and intensive care units for adult and pediatric trauma patients.

NOW, THEREFORE, BE IT RESOLVED:

That the Medical Executive Committee does hereby affirm its commitment and
dedication to providing the necessary resources and support for pursuing Level I adult
and Level II pediatric trauma designations, the continued success of the adult and
pediatric trauma programs and regionalization of trauma care by:

• Providing capable professional and paraprofessional personnel in trauma
care and UCH-MHS Administration who are immediately available to support
the Trauma Center designations;

• Providing support to the role of the Trauma Medical Director and Trauma
Programs Managers to ensure that trauma patients’ needs are met;
• Providing capable resources to support the Trauma Performance Improvement and Patient Safety Plan;

• Providing capable resources to support the Trauma Registry;

• Providing capable resources to support the outreach education and injury prevention; and

• Providing the resources necessary to advance the knowledge of trauma care at UCH-MHS.

Signed this 12th day of December, 2017.

[Signature]
Werner Ziegler
Chair of MEC
October 20, 2017

To Whom It May Concern:

This letter is written in support of not only the adult and pediatric trauma programs at Memorial Central but the entire Memorial-UC Health system. I have been the Regional Coordinator for the Plains to Peaks Regional Emergency Medical & Trauma Service (RETAC) region since its formation. The staff and administration of Memorial-UC Health have consistently supported the mission of the RETAC programs for injury prevention, education, and all other aspects of the system.

The Trauma Programs at Memorial Central work closely with area facilities to ensure consistent care to the residents and travelers in their catchment area. The relationship with pre-hospital agencies has continued to grow throughout the Region and this has raised the level of medical direction to many rural-frontier agencies.

Staff within the Trauma Programs have been instrumental at the annual Plains to Peaks EMS/Trauma Conference. This educational event brings quality education right to the rural agencies to enhance their skills and knowledge.

It has been my pleasure to work with all aspects of the Memorial Hospital-UCH. Their commitment and dedication to the system is to be commended.

Sincerely;

Kim E Schallenberger, Regional Coordinator
Plains to Peaks RETAC
How many facility-defined CMEs are required for this specialty? 16 annually or 48 within 3 years

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**Pediatric Trauma Med Director**

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## Chart 4 - Emergency Physicians

How many facility-defined CMEs are required for this specialty? 
Liaison? External only-16 annually or 48 within 3 years  All Others? 16 annually or 48 within 3 years

<table>
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<th>CME Hours Completed</th>
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### Chart 5 - Orthopedics

How many facility-defined CMEs are required for this specialty? Liaison? External only-16 annually or 48 within 3 years  All Others? 16 annually or 48 within 3 years

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<th>Name</th>
<th>Year Residency Completed</th>
<th>Board Cert. Acronym and Expiration Date</th>
<th>CME Hours Completed</th>
<th>Start Date (only if hired in last 3 years)</th>
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<td>2008</td>
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### Chart 6 - Neurosurgeons

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How many facility-defined CMEs are required for this specialty? Liaison? External only-16 annually or 48 within 3 years. All Others? 16 annually or 48 within 3 years.
### Chart 7 - Anesthesiologists

How many facility-defined CMEs are required for this specialty? Liaison? External only-16 annually or 48 within 3 years  All Others? 10 annually or 30 within 3 years

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Addendum to Job Description

Title: Prehospital Medical Director

The Prehospital Medical Director responsibilities and involvement:

Details

1. Works closely with the Medical Division to develop long term strategic plans for the Colorado Springs Fire Department (CSFD)/American Medical Response (AMR) regarding overall medical direction of the pre-hospital system as well as ongoing quality assurance and quality improvement.

2. Integrates the CSFD into the current quarterly simulated trauma alert training (STAT) at Memorial Hospital to assist communication and integration of trauma services with pre-hospital services.

3. Is a member of the medical direction team for CSFD/AMR, responsible for paramedic/Emergency Medical Technician (EMT) testing and training, presiding over system M&E for the pre-hospital providers and supporting paramedic refresher and paramedic symposium yearly.

4. Offers sit down sessions with the Medical Division and individual crews to discuss medical scenarios of actual patients in our system (redacted) and optimal clinical care of these individuals. These discussions promote questions about treatment protocols and destination guidelines.

5. Participate in ride-a-longs with the CSFD/AMR paramedics to help the education process and watch for any hand off issues with Memorial Hospital EMS.

6. Serves on the Plains to Peak Regional Continuous Quality Improvement steering committee. Participates with Medical Directors, Liaisons and Trauma Program Managers in the yearly Regional CQI Conference.

7. Identifies targeted issues annually and for improvement initiatives use the Plan, Do, Study, and ACT (PDSA) process.
**Central – Trauma Team Activation**

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<th>Replaces Policy: 3/21/16</th>
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<td><strong>Policy Owner:</strong> Trauma Services</td>
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**Introduction:**
To ensure optimal care for all patients presenting to the Emergency Department (ED) with traumatic injury, appropriate triage and activation of the multi-disciplinary trauma team will take place based upon the guidelines recommended by the American College of Surgeons (ACS) Committee on Trauma and the Colorado Department of Public Health and Environment.

**Scope:**
All employees involved with the care and treatment of the trauma patient

**Policy Details:**
The ED Charge Nurse, ED physician, and/or Trauma Surgeon (TS) will activate the trauma team for adult and pediatric patients who present to the ED. In addition, all Emergency Medical Services (EMS) activation requests will be honored per University of Colorado Health-Memorial Health System (UCH-MCH) internal trauma criteria activation. The trauma team will consist of multidisciplinary members experienced in the care of the multisystem trauma patient. Members will have specific roles and responsibilities that will allow for efficient and seamless patient care. Team members will respond as defined in the Two-Tiered Trauma Team Activation.

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*ED pharmacist will respond during staffed hours

Additional members, depending on the patient’s condition, may be involved in the resuscitation as delegated by the team leader and may include: additional ED technicians, Advance Practice Providers (APP), pharmacist, anesthesiologist, residents, Forensic Nurse Examiner’s (FNE), and others, as appropriate. To promote the most optimal and efficient care, all members of the trauma team are responsible for ensuring that only the appropriate staff needed are present in the trauma resuscitation area.

The Trauma Program will continually disburse the most current trauma activation criteria to trauma team members.

I. Notifying TS in Limited Trauma Alerts:
   A. The ED physician must notify/consult the Adult Trauma Surgeon in the following cases:
      1. The patient is unstable / critically injured and needs immediate TS evaluation. (*System notification of UPGRADE TO FULL ALERT, as described below.)
      2. Trauma Surgeon will be consulted if work-up reveals need for Trauma Service evaluation or admission, regardless of admission service. Response time for patient evaluation will be within six hours of consult request or more urgent based on physician to physician request. Mandatory trauma consults include, but are not limited to:
         a. Pediatric patients being admitted with suspected non-accidental trauma (NAT) require trauma services notification prior to admit.
         b. Patients who have sustained blunt abdominal trauma and demonstrate “seatbelt sign” and/ or abdominal tenderness require a trauma services consult prior to disposition, regardless of hemodynamic stability.
      3. Patient requires Operating Room (OR) intervention.

II. Transfers from Referring Facilities:

   Transfers from referring hospitals will be met by either the full or limited trauma team based upon the above criteria and by utilizing the judgment of the accepting physician based upon the level of evaluation and treatment received prior to arrival.

   Injured patients transferring in to Memorial Central (for admission or surgery) must first be seen in the ED by an ED Physician, regardless of activation, unless they are transferred as an inpatient. This includes transfers received from Memorial North ED. The exception to this is injured patients who are admitted to trauma services, should be met in the ED and assessed by Trauma Surgeon.

   The ED Physician will assess the patient and enter a note into the patient record that indicates the patient has been assessed, and that her/she is stable to go on to surgery or admission.

   In addition, a Memorial Central ED RN must document a focused assessment, including neurological status. Nursing will document a full set of vital signs including Glasgow Coma Scale (GCS). Refer to ED standard of practice for vital sign documentation “Vital sign recommendation of MH Emergency Departments.”
Memorial Hospital
Central Trauma-Trauma Team Activation

III. Trauma Team Activation Process:
   A. The ED will notify the following personnel/departments:
      1. Alarm Dispatch Center (ADC)/ Operator
      2. The In-House Trauma Surgeon (for “Full” Trauma Alerts only*)
   B. The ED will relay the following information to ADC/Operator:
      1. “Adult/Pediatric FULL Trauma Alert” for full trauma team activation, age, sex, mechanism of injury and medical record number (MRN) if known
      2. “Adult/Pediatric age, sex and mechanism of injury if known, LIMITED Trauma Alert” for limited trauma team activation.
      3. The Estimated Time of Arrival (ETA) of the patient.
   C. The operator will then page a silent alert to the appropriate Trauma Activation group with the above information.

IV. Upgrading of Trauma Team Activation
   After evaluation of the patient(s), the ED physician may determine the necessity to activate the full or limited trauma team to facilitate rapid further evaluation and/or treatment. Notification of the Trauma Team will then occur following the standard of practice above, with the addition of the following information for the trauma activation:
   “This is an upgrade, full/limited adult/pediatric Trauma Alert in the ED”.

V. Team Dismissal
   Per Team Leader discretion, team members may be dismissed based on patient status and resource needs.

Applicable Joint Commission Chapter(s):
   • Provision of Care Standard (PC)

Related Policies: None
Definitions: None
References(s):
   • Committee on Trauma American College of Surgeons, (2014), Resources for Optimal Care of the Injured Patient: 2014, USA.
   • CDC MMWR Recommendations and Reports, (2012), Guidelines for Field Triage of Injured Patients Recommendations of the National Expert Panel on Field Triage.[Online]
     Available from: http://www.cdc.gov/fieldtriage/index.html

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</tr>
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<td>Signs of abnormal perfusion</td>
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<td>• Trauma-related tourniquet</td>
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<td>• Consider Comorbidities:</td>
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<td>AVPU: responsive to pain or unresponsive</td>
<td>- Pregnancy over 20 wks w/ injury</td>
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<td>• Transfers receiving blood transfusion during transport</td>
<td>- Age over 65</td>
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<tr>
<td>• Transfers of intubated patients</td>
<td>- Morbid Obesity &gt;450 lbs</td>
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<td>• Penetrating injuries to the head, neck, torso, or extremities proximal to the elbow/ knee</td>
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Introduction:

UCHHealth Memorial Hospital (UCH-MHS) is dedicated to maintaining the recommendations set forth by the Colorado Department of Public Health and Environment (CDPHE) and the American College of Surgeons (ACS) Committee on Trauma (COT) to optimize the care of all patients involved in traumatic etiology.

UCH-MHS, is a Level II Trauma Center, and shall follow the regulations set forth in 6 CCR 1015-4 of the State Board of Health Rules Pertaining to the Statewide Emergency Medical and Trauma Care System. In addition, it shall follow the regulations of the American College of Surgeons (ACS) for Level II Trauma Centers to optimize the care of all patients received by the trauma center after involvement in traumatic etiology. This care includes providing the patient with a complete evaluation and comprehensive care from a multi-disciplinary team trained in the assessment, evaluation and treatment of trauma-related injuries.

Scope:

Applies to all employees and providers involved in the treatment and care of the trauma patient.
Policy Details:

I. Trauma Scope of Care

Memorial Hospital Central (MHC) is a Level II Trauma Center designated by the Colorado Department of Public Health and Environment and verified by the American College of Surgeons - Committee on Trauma. As such MHC provides comprehensive multi-specialty care to the full continuum of injured patients including complex surgical and critical care, neurosurgical and orthopedic care for the adult and pediatric trauma population. When resources become unavailable or depleted, contingency plans are described below including transfer criteria to provide seamless delivery and avoid delays in care.

II. Trauma Admission Service

A. Adult Trauma Admission Service

1. Patients with multi-system or high-mechanism injuries will be admitted to the Trauma Service at UCH-MHS.

2. The trauma surgeon, in collaboration with the multi-disciplinary team, will coordinate all aspects of treatment, including resuscitation, operation, critical care, recuperation and rehabilitation or discharge.

3. Contact to discuss with the trauma surgeon when admission for continued observation, evaluation and/or treatment is needed for the following adult patients who have sustained traumatic injuries and it is less than 48 hours after injury occurrence. These patients shall be admitted to the Trauma Service at UCH-MHS. An actual consultation with a trauma surgeon is recommended when adult patients are being admitted for treatment related to injuries that were sustained 48 hours after injury occurrence.

   a. Facial injuries, including isolated mandible fractures.

   b. Spinal injuries resulting from high energy mechanism* or with neurological compromise.

   c. Thoracic injuries, including isolated rib fractures.

   d. Abdominal injuries, including admission for observation when the patient is experiencing abdominal pain after trauma.

   e. Pelvic injuries resulting from high energy mechanism* or with pelvic hematoma.

   f. Other blunt trauma associated with high energy mechanism.*

   g. Patients with injury in greater than one body system. (ie, head + femur)
h. Patients receiving anti-coagulant therapy who have sustained an injury that puts them at risk of complications from bleeding (such as pelvic fractures, traumatic brain injuries, etc.). This does NOT include patients who have sustained low-mechanism (same height) falls with isolated extremity fractures.

*High Energy Mechanism includes, but is not limited to, the mechanisms outlined in the Trauma Activation Criteria.*

The adult patient who has sustained an isolated injury after low mechanism trauma, or who, after an appropriate work-up by Emergency Medicine, is determined to have isolated orthopedic or isolated spinal trauma, may be admitted to the appropriate specialty service (*i.e.*, Neurosurgery, Orthopedic Trauma Surgery) with consultation from the Trauma Surgery Service, as requested by the admitting physician. Patients may be admitted to the Medical Service if their medical co-morbidities are a higher admission priority than their injuries. Limited Trauma activations requiring admission or surgery require a Trauma Service Consult at admission or prior to operation regardless of admitting service.

B. Pediatric Trauma Admission

1. Pediatric patients, as defined below, will have their in-patient care managed by the Trauma Surgery Service/Pediatric General Surgery, in collaboration with the appropriate Trauma Specialist who can provide continued assessment and treatment of traumatic injuries (*i.e.* Pediatric Orthopedic Surgery, Pediatric Intensivist). Pediatric trauma care is provided in the ED at Memorial Hospital Central.

2. Pediatric trauma patients treated and triaged in the Emergency Department at MHS-UCH will be evaluated and if admission is required the guideline for age definition is as follows:

   a. Ages 0 to 14 with traumatic injuries other than isolated single long bone orthopedic injuries will be admitted to the Trauma Service with appropriate Pediatric Specialty Consultation. At a convenient time, consultation with Pediatric General Surgery will be obtained and primary trauma surgical care transferred to the Pediatric Surgery Service.

   Pediatric patients who have sustained isolated single long bone fractures may be admitted to the Pediatric Orthopedic Service. Pediatric patients activated as a Limited Trauma require a Trauma Service Consult at admission or prior to operation regardless of admitting service.

   b. MHS-UCH shall resuscitate, stabilize and/or initiate transfer of the pediatric patient, after consultation with a trauma surgeon or emergency physician at the closest designated
pediatric trauma center. Transfer shall be to the closest appropriate trauma facility as defined by RETAC protocols and as determined in consultation with the trauma surgeon or emergency physician.

c. D.15-18 will be admitted to the trauma service at MHS-UCH.

3. Pediatric trauma patients who activate a FULL trauma team alert will be evaluated and initial care stabilization managed by the Emergency Physician and Trauma Surgeon (TS) upon arrival at the ED. Pediatric trauma patients who activate a LIMITED trauma alert will be evaluated by the Emergency Physician upon arrival at the ED. The TS will be contacted if evaluation and/or admission are warranted per the Trauma Team Activation Policy.

4. Any patient admitted with the diagnosis of non-accidental trauma requires a Pediatric Trauma Surgery consultation.

III. Trauma Admission Exclusion Considerations (Adult and Pediatric)

The following populations who have suffered isolated medical sequelae, as outlined below, will be admitted to, and managed by, the physicians most appropriately trained to treat their conditions (i.e., Critical Care Intensivist, Pulmonologist, Hospitalist, etc.). A Trauma Surgery Consult may be obtained, as requested by the admitting physician. The Trauma Service Department at Memorial Hospital Central will collect data and review these cases as dictated by the requirements set forth by the American College of Surgeons and/or the State of Colorado Department of Public Health and Environment.

A. Isolated Anoxic Injury as a result of hanging or near drowning.

B. Isolated Ingestion of Caustic Substances (acids, pesticides, etc.).

C. Isolated Thermal Injuries from lightning strike, electrocution, heat stroke, hypothermia. Isolated animal, insect, human, or reptile bites.

IV. Burn Center Consultation and Transfer

UCH-MHS's Trauma Center will follow the criteria established by the American College of Surgeons and the State of Colorado for the referral and transfer of burn patients. This includes patients from the Emergency Department, direct admits and any patients sustaining a burn injury within UCH-MHS.

A. Burn center consultation will be completed for all adult and pediatric patients with:

1. Partial thickness burns greater than 10% of the total body surface area (TBSA).

2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints.

3. Third-degree burns in any age group.
Memorial Hospital
Adult and Pediatric Trauma System-Admission, Consultation, Transfer and Exclusion Policy

4. Electrical burns, including lightning injury.
5. Chemical burns.
6. Inhalation injury.
7. Burn injury in patients with preexisting medical disorders that could complicate management, prolonged recovery, or affect mortality.
8. Any patients with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient may be initially stabilized in a trauma center before being transferred to a burn unit. Physician judgment will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols.
9. Pediatric patients requiring qualified personnel or equipment for the care of children not provided by UCH-MHS.
10. Burn injury in patients who will require special social, emotional, or long-term rehabilitative intervention.

B. Additionally it is recommended to consult the burn center for circumferential burns of the chest or in any extremity that appears to need surgical intervention such as escharotomy, or fasciotomy.

C. Poison center consultation is recommended for toxin/chemical exposures.

V. Transfer of Trauma Patients for Higher Level of Care

The patient’s medical condition and UCH-MHS’s resources (available expertise and equipment) will be assessed to determine the most appropriate treatment plan for the patient.

In the case of the on-call neurosurgeon or orthopedic surgeon that is encumbered in the operating room, consideration of transferring a critically injured neurotrauma or orthotrauma patient will be evaluated at the time by the trauma surgeon in conjunction with the on-call neurosurgeon or orthopedic surgeon by following UCHHealth Memorial's contingency plans for those service lines.

To identify the specific regulatory requirement criteria for consultation or transfer of a trauma patient to a higher level of care please reference DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, Health Facilities and Emergency Medical Services Division CCR 1015-4 Chapter Two – State Emergency Medical and Trauma Care System Standards: 202D. Interfacility Transfer and Consultation.
The Applicable Joint Commission Chapters:
- Provision of Care Standard (PC)

Related Policies: None

Definitions: None

References:
- Department of Public Health and Environment. State Board of Health Rules Pertaining to the Statewide Emergency Medical and Trauma Care System: 6 CCR 1015-4
**Central – Trauma Team Activation**

<table>
<thead>
<tr>
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<td>Policy Owner: Trauma Services</td>
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**Introduction:**
To ensure optimal care for all patients presenting to the Emergency Department (ED) with traumatic injury, appropriate triage and activation of the multi-disciplinary trauma team will take place based upon the guidelines recommended by the American College of Surgeons (ACS) Committee on Trauma and the Colorado Department of Public Health and Environment.

**Scope:**
All employees involved with the care and treatment of the trauma patient.

**Policy Details:**
The ED Charge Nurse, ED physician, and / or Trauma Surgeon (TS) will activate the trauma team for adult and pediatric patients who present to the ED. In addition, all Emergency Medical Services (EMS) activation requests will be honored per University of Colorado Health-Memorial Health System (UCH-MCH) internal trauma criteria activation. The trauma team will consist of multidisciplinary members experienced in the care of the multisystem trauma patient. Members will have specific roles and responsibilities that will allow for efficient and seamless patient care. Team members will respond as defined in the Two-Tiered Trauma Team Activation.

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*ED pharmacist will respond during staffed hours

Additional members, depending on the patient’s condition, may be involved in the resuscitation as delegated by the team leader and may include: additional ED technicians, Advance Practice Providers (APP), pharmacist, anesthesiologist, residents, Forensic Nurse Examiner’s (FNE), and others, as appropriate. To promote the most optimal and efficient care, all members of the trauma team are responsible for ensuring that only the appropriate staff needed are present in the trauma resuscitation area.

The Trauma Program will continually disburse the most current trauma activation criteria to trauma team members.

I. Notifying TS in Limited Trauma Alerts:

A. The ED physician must notify/consult the Adult Trauma Surgeon in the following cases:

1. The patient is unstable / critically injured and needs immediate TS evaluation. (*System notification of UPGRADE TO FULL ALERT, as described below.)

2. Trauma Surgeon will be consulted if work-up reveals need for Trauma Service evaluation or admission, regardless of admission service. Response time for patient evaluation will be within six hours of consult request or more urgent based on physician to physician request. Mandatory trauma consults include, but are not limited to:

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   b. Patients who have sustained blunt abdominal trauma and demonstrate “seatbelt sign” and/or abdominal tenderness require a trauma services consult prior to disposition, regardless of hemodynamic stability.

3. Patient requires Operating Room (OR) intervention.

II. Transfers from Referring Facilities:

Transfers from referring hospitals will be met by either the full or limited trauma team based upon the above criteria and by utilizing the judgment of the accepting physician based upon the level of evaluation and treatment received prior to arrival.

Injured patients transferring in to Memorial Central (for admission or surgery) must first be seen in the ED by an ED Physician, regardless of activation, unless they are transferred as an inpatient. This includes transfers received from Memorial North ED. The exception to this is injured patients who are admitted to trauma services, should be met in the ED and assessed by Trauma Surgeon.

The ED Physician will assess the patient and enter a note into the patient record that indicates the patient has been assessed, and that her/she is stable to go on to surgery or admission.

In addition, a Memorial Central ED RN must document a focused assessment, including neurological status. Nursing will document a full set of vital signs including Glasgow Coma Scale (GCS). Refer to ED standard of practice for vital sign documentation “Vital sign recommendation of MH Emergency Departments.”
III. Trauma Team Activation Process:
   A. The ED will notify the following personnel/departments:
      1. Alarm Dispatch Center (ADC)/ Operator
      2. The In-House Trauma Surgeon (for “Full” Trauma Alerts only*)
   B. The ED will relay the following information to ADC/Operator:
      1. “Adult/Pediatric FULL Trauma Alert” for full trauma team activation, age, sex, mechanism of injury and medical record number (MRN) if known
      2. “Adult/Pediatric age, sex and mechanism of injury if known, LIMITED Trauma Alert” for limited trauma team activation.
      3. The Estimated Time of Arrival (ETA) of the patient.
   C. The operator will then page a silent alert to the appropriate Trauma Activation group with the above information.

IV. Upgrading of Trauma Team Activation
   After evaluation of the patient(s), the ED physician may determine the necessity to activate the full or limited trauma team to facilitate rapid further evaluation and/or treatment. Notification of the Trauma Team will then occur following the standard of practice above, with the addition of the following information for the trauma activation:
   “This is an upgrade, full/limited adult/pediatric Trauma Alert in the ED”.

V. Team Dismissal
   Per Team Leader discretion, team members may be dismissed based on patient status and resource needs.

Applicable Joint Commission Chapter(s):
   - Provision of Care Standard (PC)

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<td>Paralysis or suspected spinal cord injury</td>
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<td>Chest trauma w/ difficulty breathing or flail chest</td>
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<td>Unstable pelvic fracture</td>
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<td>Amputation, or degloving proximal to the wrist or ankle</td>
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<td>Crush to torso or extremity (w/ distal perfusion or neuro deficits)</td>
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Revised 12/15/17
Memorial Hospital

### Adult and Pediatric Trauma System
**Admission, Consultation, Transfer and Exclusion Policy**

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<td>Adult and Pediatric Memorial Health</td>
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<td>Burn Patients: Consultation and Transfer Criteria</td>
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<td>Transfer of Trauma Patients for Higher Level of Care</td>
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| Approval Date: 12/15/2017 | Policy Owner: Trauma Services |

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**Introduction:**

UCHealth Memorial Hospital (UCH-MHS) is dedicated to maintaining the recommendations set forth by the Colorado Department of Public Health and Environment (CDPHE) and the American College of Surgeons (ACS) Committee on Trauma (COT) to optimize the care of all patients involved in traumatic etiology.

UCH-MHS, is a Level II Trauma Center, and shall follow the regulations set forth in 6 CCR 1015-4 of the State Board of Health Rules Pertaining to the Statewide Emergency Medical and Trauma Care System. In addition, it shall follow the regulations of the American College of Surgeons (ACS) for Level II Trauma Centers to optimize the care of all patients received by the trauma center after involvement in traumatic etiology. This care includes providing the patient with a complete evaluation and comprehensive care from a multi-disciplinary team trained in the assessment, evaluation and treatment of trauma-related injuries.

**Scope:**

Applies to all employees and providers involved in the treatment and care of the trauma patient.
Policy Details:

I. Trauma Scope of Care

Memorial Hospital Central (MHC) is a Level II Trauma Center designated by the Colorado Department of Public Health and Environment and verified by the American College of Surgeons-Committee on Trauma. As such MHC provides comprehensive multi-specialty care to the full continuum of injured patients including complex surgical and critical care, neurosurgical and orthopedic care for the adult and pediatric trauma population. When resources become unavailable or depleted, contingency plans are described below including transfer criteria to provide seamless delivery and avoid delays in care.

II. Trauma Admission Service

A. Adult Trauma Admission Service

1. Patients with multi-system or high-mechanism injuries will be admitted to the Trauma Service at UCH-MHS.

2. The trauma surgeon, in collaboration with the multi-disciplinary team, will coordinate all aspects of treatment, including resuscitation, operation, critical care, recuperation and rehabilitation or discharge.

3. Contact to discuss with the trauma surgeon when admission for continued observation, evaluation and/or treatment is needed for the following adult patients who have sustained traumatic injuries and it is less than 48 hours after injury occurrence. These patients shall be admitted to the Trauma Service at UCH-MHS. An actual consultation with a trauma surgeon is recommended when adult patients are being admitted for treatment related to injuries that were sustained 48 hours after injury occurrence.

   a. Facial injuries, including isolated mandible fractures.

   b. Spinal injuries resulting from high energy mechanism* or with neurological compromise.

   c. Thoracic injuries, including isolated rib fractures.

   d. Abdominal injuries, including admission for observation when the patient is experiencing abdominal pain after trauma.

   e. Pelvic injuries resulting from high energy mechanism* or with pelvic hematoma.

   f. Other blunt trauma associated with high energy mechanism.*

   g. Patients with injury in greater than one body system. (ie, head + femur)
h. Patients receiving anti-coagulant therapy who have sustained an injury that puts them at risk of complications from bleeding (such as pelvic fractures, traumatic brain injuries, etc.). This does NOT include patients who have sustained low-mechanism (same height) falls with isolated extremity fractures.

*High Energy Mechanism includes, but is not limited to, the mechanisms outlined in the Trauma Activation Criteria.*

The adult patient who has sustained an isolated injury after low mechanism trauma, or who, after an appropriate work-up by Emergency Medicine, is determined to have isolated orthopedic or isolated spinal trauma, may be admitted to the appropriate specialty service (*i.e.*, Neurosurgery, Orthopedic Trauma Surgery) with consultation from the Trauma Surgery Service, as requested by the admitting physician. Patients may be admitted to the Medical Service if their medical co-morbidities are a higher admission priority than their injuries. Limited Trauma activations requiring admission or surgery require a Trauma Service Consult at admission or prior to operation regardless of admitting service.

B. Pediatric Trauma Admission

1. Pediatric patients, as defined below, will have their in-patient care managed by the Trauma Surgery Service/Pediatric General Surgery, in collaboration with the appropriate Trauma Specialist who can provide continued assessment and treatment of traumatic injuries (*i.e.* Pediatric Orthopedic Surgery, Pediatric Intensivist). Pediatric trauma care is provided in the ED at Memorial Hospital Central.

2. Pediatric trauma patients treated and triaged in the Emergency Department at MHS-UCH will be evaluated and if admission is required the guideline for age definition is as follows:

   a. Ages 0 to 14 with traumatic injuries other than isolated single long bone orthopedic injuries will be admitted to the Trauma Service with appropriate Pediatric Specialty Consultation. At a convenient time, consultation with Pediatric General Surgery will be obtained and primary trauma surgical care transferred to the Pediatric Surgery Service.

   Pediatric patients who have sustained isolated single long bone fractures may be admitted to the Pediatric Orthopedic Service. Pediatric patients activated as a Limited Trauma require a Trauma Service Consult at admission or prior to operation regardless of admitting service.

   b. MHS-UCH shall resuscitate, stabilize and/or initiate transfer of the pediatric patient, after consultation with a trauma surgeon or emergency physician at the closest designated
pediatric trauma center. Transfer shall be to the closest appropriate trauma facility as defined by RETAC protocols and as determined in consultation with the trauma surgeon or emergency physician.

c. D.15-18 will be admitted to the trauma service at MHS-UCH.

3. Pediatric trauma patients who activate a FULL trauma team alert will be evaluated and initial care stabilization managed by the Emergency Physician and Trauma Surgeon (TS) upon arrival at the ED. Pediatric trauma patients who activate a LIMITED trauma alert will be evaluated by the Emergency Physician upon arrival at the ED. The TS will be contacted if evaluation and/or admission are warranted per the Trauma Team Activation Policy.

4. Any patient admitted with the diagnosis of non-accidental trauma requires a Pediatric Trauma Surgery consultation.

III. Trauma Admission Exclusion Considerations (Adult and Pediatric)

The following populations who have suffered isolated medical sequelae, as outlined below, will be admitted to, and managed by, the physicians most appropriately trained to treat their conditions (i.e., Critical Care Intensivist, Pulmonologist, Hospitalist, etc.). A Trauma Surgery Consult may be obtained, as requested by the admitting physician. The Trauma Service Department at Memorial Hospital Central will collect data and review these cases as dictated by the requirements set forth by the American College of Surgeons and/or the State of Colorado Department of Public Health and Environment.

A. Isolated Anoxic Injury as a result of hanging or near drowning.

B. Isolated Ingestion of Caustic Substances (acids, pesticides, etc.).

C. Isolated Thermal Injuries from lightning strike, electrocution, heat stroke, hypothermia. Isolated animal, insect, human, or reptile bites.

IV. Burn Center Consultation and Transfer

UCH-MHS’s Trauma Center will follow the criteria established by the American College of Surgeons and the State of Colorado for the referral and transfer of burn patients. This includes patients from the Emergency Department, direct admits and any patients sustaining a burn injury within UCH-MHS.

A. Burn center consultation will be completed for all adult and pediatric patients with:

1. Partial thickness burns greater than 10% of the total body surface area (TBSA).

2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints.

3. Third-degree burns in any age group.
4. Electrical burns, including lightning injury.
5. Chemical burns.
6. Inhalation injury.
7. Burn injury in patients with preexisting medical disorders that could complicate management, prolonged recovery, or affect mortality.
8. Any patients with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient may be initially stabilized in a trauma center before being transferred to a burn unit. Physician judgment will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols.
9. Pediatric patients requiring qualified personnel or equipment for the care of children not provided by UCH-MHS.
10. Burn injury in patients who will require special social, emotional, or long-term rehabilitative intervention.

B. Additionally it is recommended to consult the burn center for circumferential burns of the chest or in any extremity that appears to need surgical intervention such as escharotomy, or fasciotomy.
C. Poison center consultation is recommended for toxin/chemical exposures.

V. Transfer of Trauma Patients for Higher Level of Care

The patient’s medical condition and UCH-MHS's resources (available expertise and equipment) will be assessed to determine the most appropriate treatment plan for the patient.

In the case of the on-call neurosurgeon or orthopedic surgeon that is encumbered in the operating room, consideration of transferring a critically injured neurotrauma or orthotrauma patient will be evaluated at the time by the trauma surgeon in conjunction with the on-call neurosurgeon or orthopedic surgeon by following UCHealth Memorial's contingency plans for those service lines.

To identify the specific regulatory requirement criteria for consultation or transfer of a trauma patient to a higher level of care please reference DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, Health Facilities and Emergency Medical Services Division CCR 1015-4 Chapter Two – State Emergency Medical and Trauma Care System Standards: 202D. Interfacility Transfer and Consultation.
The Applicable Joint Commission Chapters:
- Provision of Care Standard (PC)

Related Policies: None

Definitions: None

References:
- Department of Public Health and Environment. State Board of Health Rules Pertaining to the Statewide Emergency Medical and Trauma Care System: 6 CCR 1015-4
Introduction:

Patients requiring adult critical care services may be admitted to UCHealth Memorial Hospital (MH) (Central or North) by order of a qualified Licensed Independent Provider or as the result of a MET response, pending the notification of the patient’s attending physician. Patient Placement and the ICU Charge Nurse must be notified of request for ICU admission.

Scope:

All MH staff that send patients to the MH Intensive Care Unit (ICU) at Central and North, as well as the MH ICU nurses who care for the patients.

Policy Details:

I. Admission to ICU will be based upon patient condition and medical/surgical needs to allow for specialization of nursing care.

   A. Adult trauma, cardiovascular, post-op open heart, neurological, general medical, critically ill obstetric, and surgical patients will be admitted to the ICU at Central. Adult patients with trauma injuries, cardiovascular intervention, general medical, and general surgical patients will be admitted to the ICU at North. Neurologic impairment and trauma patients are cohorted in Units A/B. In the event that units A/B are full of neuro trauma patients without ability to safely move or transfer patients to other areas then Unit C can be used for overflow. Post-op cardiac patients are cohorted in ICU-E. In the event that unit E is full Unit D can be used for overflow.

   B. If all ICU beds are full or unable to maintain an emergency “bed ahead” and no patients qualify for transfer to a lower level of care, the ICU Charge Nurse

The current version of this policy can be viewed on The Source. Printing is discouraged.
will collaborate with the clinical manager, clinical director and medical directors to determine alternative options.

C. When maximum triage has occurred and “bed ahead” has been utilized, consider adult critical care divert (see Memorial Hospital [MH] Divert Policy).

D. Patients admitted to the ICU will have the appropriate ICU admission order set.

II. Guidelines for admission to the ICU should be based on active or potential life, vision, limb threatening condition, requiring immediate intervention, monitoring or specialized nursing/allied health care, which cannot be provided outside of the critical care area. These guidelines are not intended to substitute the reasonable clinical judgment of the physician provider. Examples include, but are not limited to, the following:

Hemodynamic instability
  Acute MI
  Unstable Angina
  Arrhythmia
  Shock
  Active Hemorrhage

Respiratory/Airway Instability
  Need for Mechanical Ventilation
  Hypoxia
  Hypoventilation

Neurologic Instability
  Brain Injury
  Stroke Coma Progressive Neuromuscular Weakness
  Refractory Seizures
  Spinal Cord Injury (self-injurious behavior resulting in need for sedation and/or restraint)

Metabolic Derangement
  Intoxication/Overdose
  Hyperglycemic Crisis
  Severe Electrolyte Derangement

III. Physician Responsibilities:

A. Medical, Surgical, and Neuro Intensivists, Cardiology or Cardiothoracic surgery, and vascular physicians may admit to ICU. Others need a critical care consult to be admitted.

B. All patients admitted to ICU will be seen by their admitting or consulting physician within 4-8 hours depending upon stability of the patient.

The current version of this policy can be viewed on The Source. Printing is discouraged.
C. Any physician, attending or consulting, will be available in person or by phone within fifteen minutes. This includes physicians covering or on call. Every attempt should be made by the intensivist to respond by phone or in person within 5 minutes.

D. The primary or consulting physician must evaluate a patient in person if requested to do so by the ICU RN at any time.

E. It is the physician’s responsibility to provide twenty-four hour coverage and to report off to an on-call physician. The nursing staff will be informed of changes in physician coverage by the physician providing care to the patient. Each patient shall be seen a minimum of once every 24 hours by their attending physician and/or intensivist or the designated physician providing coverage.

F. When nursing staff request an immediate response to a change in patient condition, and the admitting physician or consulting physician is not accessible, or refuses to respond, the nursing staff will immediately contact the ICU clinical manager or nursing house supervisor and the appropriate chain of command for communication will be followed.

G. When orders conflict, nursing staff will notify the physicians involved. It is the responsibility of the involved physicians to communicate with each other to resolve the orders in question.

H. The Medical Directors will be informed of any physician who fails to comply with the above guidelines and may request/recommend revocation of ICU admitting privileges.

IV. Nursing Responsibilities for Physician Notification

A. The primary attending and/or consulting physician is promptly notified of changes in the patient’s condition by the RN caring for the patient and/or the Charge Nurse.

B. Significant changes include but are not limited to, invasive hemodynamic values, NICOM, vital signs, laboratory values, drainage, dysrhythmias, change in level of consciousness, intracranial pressure monitoring, etc.

C. The physician may be contacted by phone, overhead page, beeper page, answering service page, office or if deemed necessary, at home.

V. General Nursing Guidelines for ICU

A. Multi-Disciplinary rounds are done daily seven days a week.

B. Critical care patients receive a complete head to toe physical assessment upon arrival and a minimum of every four hours and more often as needed.
Memorial Hospital  
Adult Admissions to the ICU

based upon patient condition. Vital signs are reviewed and validated by the RN and then documented in the Electronic Health Record a minimum of every two hours and more often as patient condition warrants.

C. A comprehensive admission history will be completed on all ICU patients within 24 hours.

D. All ICU patients will have continuous cardiac and pulse ox monitoring.

E. Rhythm strips will be printed, measured, and posted to the chart approximately every 4 hours and more often as patient condition warrants.

F. Advanced hemodynamic parameters - arterial line, pulmonary artery catheter/volumetric lines, ICP, etc., will be documented approximately every hour. Waveforms will be printed and posted to chart once per shift and more often as patient condition warrants.

Definitions:  
N/A

References:  
The Leapfrog Group, *ICU Physician Staffing (IPS)*, Revision 02/23/10

Pronovost PJ, Angus DC, Dorman T, Robinson KA, Dremsizov TT, Young TL, Physician staffing patterns and clinical outcomes in critically ill patients: a systematic review. *JAMA*, 2002; 288:-:2151-62

Related Policies:  
Divert Policy

Applicable Joint Commission Chapter(s):  
Provision of Care Standard (PC)
Introduction:

Patients requiring pediatric critical care services may be admitted to the Pediatric Intensive Care Unit (PICU), by order of a qualified provider (Physician) or as the result of a Pediatric Emergency Team (PET) response, pending the notification of the patient’s attending physician. Patient Placement and the PICU Charge Nurse must be notified of request for PICU admission.

Scope:

All University of Colorado Health Memorial Hospital (MH) staff that send patients to the Pediatric Intensive Care Unit (PICU) as well as the PICU nurses who care for the patients.

Policy Details:

I. Admission to the PICU will be based upon patient condition and medical/surgical needs to allow for specialization of nursing care.
   
   A. Admission Options
      Pediatric trauma, cardiovascular, neurological, general medical and surgical patients will be admitted to the PICU at Central.
   
   B. The PICU specializes in the care of children, newborn through adolescent years (0 – 18). Patients over the age of 18 years requiring specialized pediatric care will be cared for by a Pediatric provider.
   
   C. If all PICU beds are full or unable to maintain Pediatric critical care bed and a trauma “bed ahead” and no patients qualify for transfer to a lower level of care, the PICU Charge Nurse will collaborate with the clinical manager, clinical director and medical directors to determine alternative options.
   
   D. When maximum triage has occurred and “bed ahead” has been utilized, consider pediatric critical care divert (see Memorial Hospital’s (MH) policy, Divert Policy).
Memorial Hospital
Pediatric - Admissions to the Pediatric Intensive Care Unit (PICU)

E. The PICU admission order sets, which are evidenced based for optimal outcome for all pediatric critical care patients, are instituted on all patients admitted/transferred to the PICU.

II. Guidelines for admission to the PICU should be based on active or potential life, vision, limb threatening condition, requiring immediate intervention, monitoring or specialized nursing/allied health care, which cannot be provided outside of the critical care area. These guidelines are not intended to substitute the reasonable clinical judgment of the physician provider.

Examples include, but are not limited to, the following:

A. Hemodynamic instability
   Arrhythmia
   Shock
   Active hemorrhage

B. Respiratory/Airway instability
   Need for mechanical ventilation
   Hypoxia
   Hypoventilation

C. Trauma based on state regulations
   Neurologic instability
   Brain injury
   Stroke
   Coma
   Progressive neuromuscular weakness
   Refractory seizures
   Spinal cord injury

D. Metabolic derangement
   Intoxication/Overdose/ Suicide attempt/ ingestions
   Hyperglycemic crisis
   Severe electrolyte derangement
   Acute renal insufficiency

E. Infectious Diseases

F. Surgical post op

III. Physician Responsibilities

A. Members of the medical staff may admit patients to the PICU according to privileges delineated in the bylaws and regulations of medical staff.

B. PICU admissions are subject to review by the intensivists on call to verify appropriate utilization of resources and to determine the need for intensivist consultation. Consultation/evaluation by an intensivist is always available and is recommended on all patients admitted to the PICU unless the admitting physician is Board Certified or Board Eligible in any recognized discipline of critical care. Consultations will be accomplished by physician to physician communication and
cannot be delegated to nursing staff or allied health staff. PICU nursing staff may request intensivist evaluation of any patient in the PICU at any time.

C. All patients admitted to the PICU, under PICU status, will be seen by their admitting or consulting physician within 1 hour depending upon stability of the patient. Patient admitted to the PICU, under Stepdown status, will be seen by their admitting or consulting physician within 8 hours.

D. Direct Admits from another facility must be seen within 1 hour.

E. Any physician, attending or consulting, will be available in person or by phone within fifteen minutes. This includes physicians covering or on call. Every attempt should be made by the intensivist to respond by phone or in person within 5 minutes.

F. The primary or consulting physician must come in to evaluate a patient if requested to do so by the PICU RN at any time.

G. It is the physician’s responsibility to provide twenty-four hour coverage and to report off to an on-call physician. The nursing staff will be informed of changes in physician coverage by the physician providing care to the patient. Each patient shall be seen a minimum of once every 24 hours by their attending physician and/or intensivist or the designated physician providing coverage.

H. If the nursing staff requires an immediate response to a patient’s change in condition, and the admitting physician or consulting physician is not accessible, or refuses to respond, the nursing staff will immediately contact the PICU clinical manager, director and the intensivist on call who will respond.

I. When orders by two physicians conflict, it is the responsibility of the involved physicians to communicate with each other to resolve the orders in question.

J. The Medical Director will be informed of any physician who fails to comply with the above guidelines and may request/recommend revocation of PICU admitting privileges.

IV. Nursing Responsibilities for Physician Notification

A. The primary attending and/or consulting physician is promptly notified of changes in the patient’s condition by the RN caring for the patient and/or the Charge Nurse.

B. Significant changes include, but are not limited to, invasive hemodynamic values, vital signs, laboratory values, drainage, dysrhythmias, change in level of consciousness, etc.

C. The physician may be contacted by phone, overhead page, beeper page, answering service page, office or if deemed necessary, at home.

V. General Nursing Guidelines for PICU:

A. Multi-Disciplinary rounds are done daily Monday through Friday.
B. Critical care patients receive a complete head to toe physical assessment upon arrival and a minimum of every four hours and more often as needed based upon patient condition. Vital signs are documented a minimum of every two hours and more often as patient condition warrants.

C. A comprehensive admission history will be completed on all PICU patients within 24 hours.

D. All PICU patients will have continuous cardiorespiratory and pulse oximetry monitoring.

E. Rhythm strips will be printed, measured, and posted to the chart every 12 hours and more often for patients admitted with cardiac dysrhythmias and as patient condition warrants.

F. Advanced hemodynamic parameters (arterial line, ICP, etc.) will be documented hourly.

G. Nursing will ensure video monitoring is suspended during times of personal patient care and/or specific procedures (i.e., baths, Foley insertions, etc.) to protect patient privacy.

Related Policies:
   Divert Policy
   Adult and Pediatric Trauma System – Admission, Consultation, Transfer and Exclusion Guidelines

References:


   Applicable Joint Commission Chapter(s)
   -Provision of Care Standard (PC)
Introduction:

Each patient admitted to the Rehabilitation Patient Care Unit (RPCU) will meet the criteria for admission, continued stay and discharge. A pre-admission screening will be conducted by the Inpatient Rehabilitation Liaison to determine whether the patient is likely to benefit significantly from an intense inpatient rehabilitation program.

Admission to RPCU is made without regard to race, creed, color, age, sex, or national origin. Referrals are made primarily by physicians but may also issue from health facilities, health care professionals or by patients themselves. Screening is accomplished by direct consultation with the RPCU physician and review by the Inpatient Rehabilitation Liaison. The final decision relating to patient admission to the RPCU is made by the RPCU physician and the RPCU Admissions Team, which includes the Director, Managers, RPCU physician, Inpatient Rehabilitation Liaison and the PPS Coordinator/Compliance. The ongoing assessment for continued stay and/or discharge will be conducted at weekly patient care conferences and Utilization Review (UR) meetings.

Scope:

This policy applies to all University of Colorado Health – Memorial Hospital System (MH) staff/employees involved in the Rehabilitation Patient Care Unit (RPCU).

Policy Details:

I. Admission

   A. RPCU admission provides a comprehensive, interdisciplinary program of services directed towards rehabilitation of the patient. The patient must meet admission criteria in order to be admitted to RPCU. See attached document entitled, RPCU Admission Criteria.
B. Diagnostic criteria considered most appropriate for a comprehensive program are:

1. Stroke
2. Spinal cord injury
3. Congenital deformity
4. Amputation
5. Major multiple trauma
6. Fracture of femur (hip fracture)
7. Brain injury
8. Neurological disorders, including multiple sclerosis, motor neuron diseases, polyneuropathy, muscular dystrophy and Parkinson’s disease
9. Burns
10. Active polyarticular rheumatoid arthritis, psoriatic arthritis and seronegative arthropathies resulting in significant functional impairment of ambulation and other activities of daily living that have not improved after an appropriate, aggressive and sustained course of outpatient therapy services, or services in other less intensive rehabilitation settings immediately preceding the inpatient rehabilitation admission, or that result from a systemic disease activation immediately before admission, but have the potential to improve with more intensive rehabilitation.
11. Systemic vasculitides with joint inflammation, resulting in significant functional impairment of ambulation and other activities of daily living that have not improved after an appropriate, aggressive and sustained course of outpatient therapy services, or services in other less intensive rehabilitation settings immediately preceding the inpatient rehabilitation admission, or that result from a systemic disease activation immediately before admission, but have the potential to improve with more intensive rehabilitation.
12. Severe or advanced osteoarthritis (ostearthrosis or degenerative joint disease) involving two or more major weight bearing joints (elbow, shoulders, hips, or knees, but not counting a joint with a prosthesis) with joint deformity and substantial loss of range of motion, atrophy of muscles surrounding the joint, significant functional impairment of ambulation and other activities of daily living that have not improved after the patient has participated in an appropriate, aggressive, and sustained course of outpatient therapy services or services in other less intensive rehabilitation settings immediately preceding the inpatient rehabilitation admission but have the potential to improve with more intensive rehabilitation. (A joint replaced by prosthesis is no longer considered to have osteoarthritis, or other arthritis, even though this condition was the reason for the joint replacement.)
13. Knee or hip joint replacement, or both, during an acute hospitalization immediately preceding the inpatient rehabilitation stay and also meets one or more of the following specific criteria:
   a) The patient underwent bilateral knee or bilateral hip joint replacement surgery during the acute hospital admission immediately preceding the Inpatient Rehabilitation Facility (IRF) admission.
   b) The patient is extremely obese with a Body Mass Index of at least 50 at the time of admission to the IRF.
Memorial Hospital
Admission, Continued Stay and Discharge Criteria for Rehab Patient Care Unit (RPCU)

c) The patient is age 85 or older at the time of admission to the IRF.

C. By regulation, 60% of the patients must meet one or more of the diagnoses mentioned above. Other conditions which may be appropriate for rehabilitation include: cardiac conditions; oncology; joint replacements, fractures and other orthopedic injuries; pulmonary; pain; and, wound care. These referrals will be considered on a case-by-case basis.

D. Rehabilitation potential is evaluated by assessment of impairment in one or more of the following functional areas:

1. Bowel/Bladder management
2. Self-care activities
3. Mobility and ambulation
4. Transfers
5. Cognitive function
6. Swallowing
7. Perception
8. Communication
9. Psychosocial issues
10. Medical needs (skin, respiratory, nutrition)

E. Admission to RPCU occurs according to the following procedures:

1. Upon receiving a referral, the Inpatient Rehabilitation Liaison will perform a preadmission screening in accordance with the written admission criteria form. If the Inpatient Rehabilitation Liaison deems that the patient is an appropriate candidate for RPCU, then a consultation will be conducted by the RPCU physician.
2. Upon approval, the admitting RPCU physician will notify the inpatient Rehabilitation Liaison to arrange for a transfer to the RPCU. Upon admission the RPCU physician will issue orders. If the patient is transferred from another University of Colorado Health – Memorial Hospital System unit or facility, the attending physician from the other unit or facility will need to write a discharge order.
3. Admission priority is based on those patients who most appropriately meet the admission criteria as determined by the pre-admission evaluation. Bed availability will be considered in the admission process and a waiting list will be maintained. The waiting list will be maintained by the inpatient Rehabilitation Liaison. The Medical Director, Director of Rehabilitation, RPCU Managers, Inpatient Rehabilitation Liaison and the PPS Case Manager will meet, as necessary, for final admission determination.
4. A new account number will be generated for admission to RPCU in order to maintain a separate chart from the acute care stay.
II. Continued Stay Criteria

A. Each patient will undergo an assessment by each discipline involved with the patient (“Team”). A Plan of Treatment will be developed by the RPCU physician in consultation with the Team. The Plan of Treatment will be re-assessed at least weekly by the Team and the RPCU physician.

B. The following criteria will be utilized to determine the appropriateness of continued stay in an intense inpatient rehabilitation setting:

1. The patient continues to meet the admission criteria and is demonstrating a continued need for an intensive inpatient rehabilitation program.
2. The patient demonstrates participation and tolerance of three (3) hours of rehabilitation therapy per day for a minimum of five (5) days per week or fifteen (15) hours of rehabilitation therapy over a consecutive seven (7) day period, beginning with the date of admission, in accordance with CMS guidelines.
3. The patient demonstrates continued progress towards measurable realistic goals identified through the Team assessment process. The patient may not achieve goals in the time-frame expected, but demonstrates a continuous process of improvement towards meeting goals that cannot be actualized in a less intensive setting.
4. If an unexpected clinical event occurs during the patient’s stay in the RPCU that limits the patient’s ability to participate in the intensive therapy program for a brief period not to exceed three (3) consecutive days (for example, extensive diagnostic tests, prolonged intravenous infusion of chemotherapy or blood products, bedrest due to signs of deep vein thrombosis, exhaustion due to recent ambulance transportation or surgical procedure), the specific reasons for the patient’s inability to participate in rehabilitation therapies must be documented in the medical record.

III. Discharge Criteria

A. The patient will be discharged when one or more of the following criteria are met:

1. The patient does not demonstrate any rehabilitation potential as determined by comprehensive team assessment.
2. The patient has achieved maximum potential and/or rehabilitation goals.
3. The patient does not make any measurable progress towards goals for a continuous seven (7) day period absent medical rationale.
4. The patient has improved to a functional level that will allow safe discharge to a less intensive level of care or community environment.
5. The patient experiences a major medical problem or intervention that precludes benefit from a continued inpatient rehabilitation program.
6. The patient and/or family is/are no longer willing to participate in the intensive rehabilitation level.
7. The patient and/or family choose to pursue an alternative rehabilitation program, or desire(s) to leave against medical advice.
8. The patient requires a surgical procedure that is determined to be an inpatient procedure.
9. The patient has not met the three (3) hour rule criteria for three (3) consecutive days and there is no documented rationale in the patient’s medical record by the RPCU physician.

Applicable Joint Commission Chapter(s):
Provision of Care Standard (PC)
Rights and Responsibilities of the Individual Standard (RI)

Related Resources and/or Policies:
N/A

Definitions:
N/A

References:
Centers for Medicare and Medicaid Services 42 CFR Part 412

Centers for Medicare and Medicaid Services, Pub 100-02, Medicare Benefit Policy, Transmittal 119, Subject: Coverage of Inpatient Rehabilitation Services, January 15, 2010
Memorial Hospital
Admission, Continued Stay and Discharge Criteria for Rehab Patient Care Unit (RPCU)

RPCU Admission Criteria

Non Negotiable

CMS 13:
- Stroke
- Spinal Cord Injury
- Congenital Deformity
- Amputation
- Major Multiple Trauma
- Fracture of the femur
- Brain Injury
- Neurological disorders (MS, motor neuron diseases, polyneuropathy, MD, Parkinson’s)
- Active polyarticular rheumatoid arthritis (w/ many conditions)
- Systemic Vasculidities w/ joint inflammation
- Severe or advanced osteoarthritis (w/ many conditions)
- Knee or Hip Joint replacement w/conditions (bilateral knee or bilateral hip, BMI over 50 age 85 or older)

*CMS 13 are case by case evaluations

Medical Stability: Medically stable without complications that may interfere with intensive rehabilitation and goals per CMS, “The patient’s condition is sufficiently stable to allow the patient to actively participate in an intensive rehabilitation program”.

Full course of treatment on acute side must be complete: Per CMS, “A patient’s full course of treatment in the referring hospital has been completed and the patient can appropriately be transferred to the IRF once that patient’s medical condition can be safely managed in the IRF at the same time that the patient is fully participating in and benefitting from the intensive rehabilitation therapy program provided in the IRF”.

Requires at least two therapies: OT PT SLP/per CMS, “The patient requires active and ongoing therapeutic intervention of at least two therapy disciplines, one of which must be physical therapy or occupational therapy”. CMS Federal Register Vol 74/No 151 Friday Aug 7 2009: Rules and Regulations; p39793

Able to tolerate 3 hours of therapy starting on the day of admission: According to CMS, “Patients admitted to IRF’s are expected to require, participate in and benefit significantly from the intensive rehabilitation therapy program provided in an IRF” also, “Patients who are still building up to being able to receive this intensive level of therapy must remain in the referring hospital setting (or another setting of care) until they are able to participate in and benefit from the intensive rehabilitation therapy program”. “The patient is expected to make measurable improvement that will be of practical value to improve the patient’s functional capacity or adaptation to impairments”.

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Memorial Hospital
Admission, Continued Stay and Discharge Criteria for Rehab Patient Care Unit (RPCU)


**Respiratory requirements:** If patient has new tracheostomy or has just been weaned from the ventilator, the patient must have had no respiratory crisis for at least 36-48 hours prior to admission to the IRF (this includes, but is not limited to, being bagged, mucous plugs that require RT intervention, significant desaturation when mobilizing with therapy)

*case by case evaluation*

**PT and/or OT evaluation:** Must be completed on the acute care side. The ideal situation would be an evaluation and at least on treatment.

**Discharge Disposition:** Patient must have one and according to CMS, “The typical rehabilitation patient is one who…is discharged to the community” (Home, Board and Care, Transitional Living Unit, Assisted Living Residence) 2010 Uniform Data System for Medical Rehab PPS Coordinators Boot Camp; p 74-75

**Negotiable**

Chest tubes
Drips (dependent on the type of drip/to follow MHS policy)
Need for frequent suctioning
Wound vats (dependent on placement)
Hemodialysis and/or Hyperbaric Oxygen Therapy
Memorial Hospital
Admission, Continued Stay and Discharge Criteria for Rehab Patient Care Unit (RPCU)

APPROVED:

____________________________________
Name

____________________________________
Title

______________
Date

Reviewer(s)  Title  Date  Print Name
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Original Date:  12/1997
12/2015
UCH-MHS dba Memorial Hospital
ORGANIZATIONAL-WIDE PLAN FOR PROVIDING PATIENT CARE

The UCH-MHS dba Memorial Hospital ("MH") Organizational Plan ("Plan") describes the framework by which it provides its community with quality services and benefits. The Plan is a collaborative effort between the Board of Directors, physicians, and leadership which plans, coordinates, and continuously improves the services MH provides. As a result of this collaboration, MH functions as a network of integrated processes. The plan of care is supported by MH’s strategic plan, annual budget, and policies.

MH is a non-profit, full-service organization that includes Memorial Hospital Central ("MHC") and Memorial Hospital North ("MHN") and is part of University of Colorado Health ("UCHealth"). In 2012, the University of Colorado Hospital System and Poudre Valley Health Care, Inc. dba Poudre Valley Health System, which includes Poudre Valley Hospital in Ft. Collins, Colorado and Medical Center of the Rockies in Loveland, Colorado, formed UCH and entered into a joint operating agreement to set forth the governance structure and operations of UCHealth. In 2012, MH and Poudre Valley Health System entered into a lease agreement with the City of Colorado Springs for Memorial Health System. Along with University of Colorado Hospital in Aurora, Colorado, these five hospitals comprise UCHealth.

MH consists of MHC, MHN, Memorial Hospital Outpatient Surgery Center at Printers Park ("MOSPP") and outpatient clinics. MHC functions under one license and has a capacity of 583 licensed beds. MHN has a separate hospital license for 88 beds. MH provides services for its local community, southern and eastern Colorado, western Kansas, and northern New Mexico.

The populations of the El Paso County and Teller County communities are comprised of:


- White alone, not Hispanic/Latino: 69.9%
- Hispanic/Latino: 16.6%
- Black/African American: 7.0%
- Two or more races: 4.7%
- Asian: 3.0%
- American Indian/Alaska Native: 1.3%
- Native Hawaiian/Pacific Islander: 0.4%


- White alone, not Hispanic/Latino: 89.2%
- Hispanic/Latino: 6.4%
- Black/African American: 0.8%
- Two or more races: 2.4%
- Asian: 0.9%
- American Indian/Alaska Native: 1.2%
- Native Hawaiian/Pacific Islander: 0.1%
A. **UCHealth Vision, Mission, Strategy, and Values:**

**Vision** – The vision of UCH ealth is: From Health Care to Health.

**Mission** - The mission of UCH ealth is: We improve lives. In big ways through learning, healing and discovery. In small, personal ways through human connection. But in all ways, we improve lives.

**Strategy** - The mission will be achieved through the creation of a community-focused health care system. The system will have employees as the core and will include equitable partnerships with physicians as well as alliances built with providers, payers, and the community. The organization will seek innovative opportunities and will be willing to take risks in developing this system which will feature:

- Documented high quality care
- Cost-efficient healthcare services
- Effective operations within a capitated environment
- Shared information systems
- Focus on customer expectations
- Proactive initiatives for health promotion and education

**Strategic Objectives** - In order to provide care to our patients/clients in a dynamic environment, we employ the following Strategic Goals:

- Quality and Patient Experience
- Engaged workforce
- Growth
- Integration
- Deliver Superior Value
- Maintain and Enhance the Academic Enterprise
- Mission, Vision, and Brand Awareness

**Values** - In pursuing this mission, we will adhere to the following values:

Patients first
Integrity
Excellence

B. **Responsibilities of Leadership:**

- MH is responsible for planning health care services provided by Memorial Health System ("System") based on its mission and for developing and implementing an effective planning process that allows for time-defined and clear goals. The planning process includes a
collaborative assessment of patient, customer and community needs, defining a strategic plan, developing operational plans, establishing annual operating and capital budgets and ongoing evaluation of the plan’s implementation and success. The Plan minimally addresses both patient care functions (access, treatment, patient rights, patient teaching, discharge planning and assessment) and organizational support functions (information system, infection prevention, safety, environment and performance measurement, assessment and improvement).

- MH is responsible for ensuring collaboration with community leaders and organizations to design services to be provided by the system that are appropriate to the scope and level of care required by the patients it serves.
- MH will ensure communication of the system’s mission, vision, values, goals, and strategic plans.
- MH ensures uniform delivery of patient care services provided throughout its facilities.
- MH provides appropriate job enrichment, employee development and continuing education opportunities that serve to promote retention of staff and to foster excellence in care delivery and support services.
- MH ensures appropriate direction, management, and leadership of all services and or/departments.
- MH ensures staffing resources are available to appropriately meet the needs of the patients served.
- MH strives to ensure that systems are in place that promote the integration of services that support the patient’s continuum of care needs in a way that makes sense to the consumer.
- MH appoints appropriate committees, task forces, and other forums to ensure interdepartmental collaboration on issues of mutual concern and requiring inter-disciplinary input.
- MH involves physicians, directors, and staff in evaluating, planning, and recommending annual expense and capital budgets based on expected resource needs of their departments. Directors are held accountable for managing and justifying their budgets and resource use. This includes, but is not limited to, identifying, investigating, and budgeting for new technologies that can be expected to improve the delivery of patient care and services.

C. **Integration of Services:**

The importance of a collaborative interdisciplinary team approach, which considers the unique knowledge, judgment, and skills of a variety of disciplines in achieving desired patient outcomes, serves as a foundation for integration. Open lines of communication exist between all departments providing patient care, patient services, and support services within the System and, as appropriate, with community agencies in order to ensure efficient, effective and continuous patient care. To facilitate effective interdepartmental relationships, problem solving is encouraged as close to the patient as possible within the system. Staff should be open to addressing other’s concerns and seeking mutually acceptable solutions. Supervisors and managers have the authority to mutually solve problems and seek solutions within their spans of control. Positive interdepartmental communication is strongly encouraged as part of MH’s philosophy.
D. **Scope of Services:**

In accordance with federal and state regulations, professional practice care standards, and codes, MH provides its community with the following essential health care services:

- Audiology
- Cardiology
- Cardiac Rehabilitation
- Cardiac surgery
- Community Patient Education
- Counseling
- Critical Care
- Dermatology
- Diabetic Education
- Diagnostic Radiology
- Emergency
- Endocrinology
- Gastroenterology
- General Medicine
- General Surgery
- Gynecology
- Hematology
- Hyperbaric Oxygen therapy (HBO)
- Infectious Disease
- Medical Dietetics
- Neonatology
- Neonatal Intensive Care units; Level 2/3
- Nephrology
- Neurology
- Neuropsychology
- Neurosurgery
- Normal Newborns
- Nuclear Medicine
- Obstetrics
- Oncology
- Ophthalmology
- Oral Surgery
- Orthopedic
- Otolaryngology
- Outpatient Diagnostic
- Outpatient services, e.g. Rehabilitative, Laboratory and Radiology Services
- Pastoral Care
- Pathology and Clinical Laboratory
- Pediatrics
- Pediatric Intensive Care
Pharmaceutical
Physical Medicine and Rehabilitation
Pulmonary Rehabilitation
Respiratory Care
Rheumatology
Sleep Lab
Thoracic Surgery
Trauma-Level 2/3 Trauma
Urology
Vascular Surgery
Wound Care

A list of Patient Care Contracted Services is available.

MH's philosophy of patient care delivery is consistent with its vision and mission statements and recognizes each patient as an individual and a member of a family (socio-cultural group) and a member of the community. The design of patient care services throughout the organization is appropriate to the scope and level of care required by the patient served. MH believes that each patient has basic needs, rights, privileges, and preferences, which must be respected. It is MH's belief that all employees have a responsibility to assist the patient in the achievement of an optimum level of functioning and the maintenance or recovery of personal dignity in a timely manner. MH further believes that patient care delivery and nursing practice is dependent upon, and interacts with, the medical plan of care. All services are designed to be responsive to the needs and expectations of patients and/or their families/decision-makers.

The practice of nursing is independent and is based on the professional practice model. The Registered Nurses accept the responsibility, accountability, and authority for the assessment, plan, implementation, and evaluation (nursing process) of patient care within established standards of nursing practice. Nursing practice is also based upon a partnership with the medical staff and diagnostic/support departments to ensure the care provided to a patient is coordinated and covers the continuum. The Chief Nursing Officer is responsible for nursing care.

All patient care delivery, including nursing practice, addresses the holistic nature of the patient, including the physiological, psychological, spiritual, social, cultural, and age specific needs. Consistent practice standards, protocols, patient care standards, policies, and procedures, based on evidence based research, are used to monitor and evaluate the quality of care provided throughout the health care system. The goal of patient care services is to assist the patient and family to identify and use available resources to adapt to and cope with the changes resulting from illness.
Divert Policy

<table>
<thead>
<tr>
<th>Effective Date: 12/8/2017</th>
<th>Replaces Policy:</th>
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<tbody>
<tr>
<td></td>
<td>Revision</td>
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<td>Policy Owner:</td>
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Introduction:
Colorado Springs and the surrounding communities depend upon the acute medical care resources provided by UCHealth Memorial Hospital (MH) and all other hospitals within the community of Colorado Springs. At times, internal or external conditions may create situations where demand for these resources exceeds the capacity of one or more hospitals, also referred to as “facilities” to provide care. Such conditions may cause a hospital to go on divert status.

Scope:
All UCHealth Memorial Hospital Employees that are involved in decisions regarding divert status.

Policy Details:

I. General Information
   
   A. Whenever a facility is considering divert status for ambulance or patients transported via air, the following communication practices should be followed:

   1. Notify all Colorado Springs hospitals of the impending divert status by contacting the Emergency Department (ED) Charge Nurse or Physician.
   2. The EM System will be updated to reflect the appropriate status type.
   3. The status type will be specifically identified due to lack of bed availability, physician specialists, necessary equipment or other necessary resources.

The current version of this policy can be viewed on The Source. Printing is discouraged.
B. Types of Divert

1. Emergency Department (ED) Divert
   a) The hospital ED cannot accept Emergency Medical Services (EMS) traffic.
   b) This status must be updated by the facility approximately every hour until the status changes.
   c) This status is displayed in red on the status screen.

2. Advisory
   a) The hospital ED is experiencing specific limitations.
   b) For example, the ED may be at capacity for a particular patient type, such as psychiatric patients.
   c) This status must be updated by the facility approximately every three hours until the status changes.
   d) This status is displayed in yellow on the status screen.
   e) Information must be provided under the comments section as to the nature of the limitation.

3. Open
   a) The hospital ED is accepting all EMS traffic.
   b) This status is displayed in green on the status screen.
   c) This status must be updated approximately every twenty-four hours.

C. Decisions regarding divert status for specific service areas should be made known to the following individuals or services prior to either hospital (Central and/or North) going on divert or declining a divert status.

1. Contact the ED and notify one of the following at 365-6820:
   a) ED Charge Nurse
   b) ED Lead Physician

2. Contact the Nursing House Supervisor (NHS) at 365-5000.
   i. The NHS will be responsible for notifying the appropriate Nursing Directors, Administrator-on-Call and the CEO (or designee) regarding the potential divert of their specific areas or the impact of divert on their areas.

3. Records will be kept noting the times and reasons for going on divert status.

D. Divert Categories

1. Emergency Department
   a) Emergency Department Divert will be considered when the ED bed capacity and/or resources are at maximum capacity or it can no longer ensure safe, patient-centered care.

The current version of this policy can be viewed on The Source. Printing is discouraged.
Note: The hospital will make every effort to avoid divert for pediatric patients, acute strokes, patients experiencing acute coronary syndrome (ACS) and trauma patients.

b) The ED Charge Nurse, ED On-Call Manager and Lead Emergency Physician will collaborate to assess the current status of patients in the ED to determine the ability of the ED to provide quality care when the ED is at capacity with respect to its equipment and/or staffing resources.

c) The hospital will use capacity management strategies to mitigate throughput issues in all areas of operation.

2. Trauma Divert

a) The trauma surgeon on duty has the authority to implement Trauma Divert.

b) The Trauma Program Director and Trauma Medical Director (or designee), must be consulted, if trauma services may be impacted.

c) Possible reasons for periodic trauma divert include, but are not limited to:
   i. Trauma surgeon availability due to multiple patients being treated in the operating room.
   ii. Catastrophic equipment failure
   iii. Serious internal facility or safety issues

d) The trauma surgeon will communicate directly with the ED Charge Nurse in order to initiate Trauma Divert.

e) The ED Charge Nurse is to act on this request immediately by notifying the Nursing House Supervisor and ED Manager-on-Call.

f) The Nursing House Supervisor will ensure subsequent communication with Administrator-on-Call, Hospital Executives and Trauma Medical Director (or designee) has occurred.

Definitions:

**Capability:** The medical facility has qualified personnel, physical space, equipment and supplies necessary to provide treatment.

**Divert:** As defined in the Colorado Board of Health Rules pertaining to the statewide emergency medical and trauma system, divert is the redirection of the patient to a different receiving facility. A hospital(s) may go on divert status secondary to a lack of critical equipment or staff, operating room, emergency department, or intensive care unit saturation; disaster or facility structural compromise. UCHealth Memorial Hospital acknowledges that communication among hospital facilities is necessary to meet the needs of our community.

**EM System:** Colorado Emergency Management Resource is a web-based emergency management resources communication tool used throughout the State of Colorado by health care agencies, emergency management and public safety entities.
Memorial Hospital
Divert Policy

References:
   Colorado EM System User Guide
   Paramedic Protocol Guidelines, El Paso County 2010 Edition

Related Policies:
   N/A

Applicable Joint Commission Chapter(s):
   Provision of Care Standard
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<th>Time of Bypass Occurred</th>
<th>Time Bypass Ended</th>
<th>Reason for Bypass</th>
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JOB DESCRIPTION REPORT

Prepared for:  
Prepared Date: 12/5/2017 12:55:06 PM

POSITION DESCRIPTION

Job Title: Medical Director


Patient Contact: Direct  Physical Requirements: Light

<table>
<thead>
<tr>
<th>Populations Served For Direct Patient Care Providers</th>
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<tbody>
<tr>
<td>Premature - less than 37 weeks gestation:</td>
</tr>
<tr>
<td>Adolescent - 13 -17 years:</td>
</tr>
<tr>
<td>Infant - birth to 12 months:</td>
</tr>
<tr>
<td>Adult - 18 - 64 years:</td>
</tr>
<tr>
<td>Pediatric - 1 - 12 years:</td>
</tr>
<tr>
<td>Geriatric - 65 years older:</td>
</tr>
<tr>
<td>Not Applicable - N/A:</td>
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Position Summary
Leads and oversees the medical and administrative aspects of assigned programs. Provides medical care direction and clinical coordination of services.

Minimum Required Education:
Graduate of an accredited medical school.

Required Experience
5 years’ experience in area of specialty.

Licenses and Certifications
Unrestricted Colorado Board of Medical Examiners physician license.  Unrestricted DEA permit to prescribe all medications commonly prescribed in the course of practice.  Board certification or eligibility for Board certification by American Board of specialty.  Unrestricted medical staff membership at a system hospital, with appropriate practice privileges. If primary practice facility is not a system hospital, then appropriate documentation must be submitted showing privileges at the primary practice facility.  Appropriate credentialing through Medical Staff Services office required.  Eligible to provide reimbursable Physician services and maintain provider status with Medicare and Medicaid.

Preferred Qualifications

Skills and Abilities
Within scope of job, requires critical thinking skills, decisive judgment and the ability to work with minimal supervision. Must be able to work in a fast-paced environment and take appropriate action.

Duties and Responsibilities
Provides medical direction and clinical coordination for patient care in the service area. Monitors clinical outcomes to facilitate high-quality care.  Serves as liaison regarding work performed in assigned areas to determine if services provided are appropriate, that medically reliable data is being generated, and that there is optimal utilization and correlation of such data for purposes of diagnosis and patient management.  Lead the preparation of the strategic and financial plans for the area.  Oversee capital budget requests.  Provides direct patient care to patients according to scope of service and policies and procedures.

Leadership Competencies (for Leaders only):
Focus:  Charts team direction that promotes UCHealth Mission, Vision, Values and Strategic Imperatives  Achieves results
Relationships:  Promotes UCHealth Standards of Excellence  Champions Service Excellence  Stewardship:  Stewards
UCHealth resources  Drives continuous improvement  Engagement:  Facilitates the development of others  Engages staff
(promotes staff engagement)  Growth:  Focuses on personal development  Applies strategies to maintain personal health

Driving Personal Vehicle  O  
Driving Company Vehicles  N

This job description reflects the general level of physical work, knowledge, skills, abilities, and essential functions
expected of an incumbent and it is not designed to contain an exhaustive list of activities, duties, or responsibilities that
an incumbent may be assigned. Reasonable accommodations may be provided to qualified individuals with disabilities, in
accordance with the ADA Amendment Act of 2008 (ADAAA).

I verify that I have reviewed the job description and will be able to perform the duties of this position with or without
reasonable accommodations. If accommodations are needed, please list below.

Signature
EXHIBIT D

Trauma Medical Director - Memorial Hospital

Faculty and Community Physician Position Combined
The Trauma Medical Director at Memorial Hospital Central, part of University of Colorado Health in Colorado Springs, CO will be a faculty member of the Department of Surgery at the University of Colorado School of Medicine, and will be a provider in the Colorado Health Medical Group.

University of Colorado Health serves nearly 3 million people in Denver, Colorado Springs and Fort Collins in addition to areas in Nebraska, Wyoming and Kansas. The Trauma Medical Director will be both an administrative leader and a provider of the highest quality of trauma care. Memorial Hospital Central has 12 ORs and 36 critical care beds. A second hospital of this system in northern Colorado Springs has 6 ORs and 87 licensed beds, and operates a Level III trauma program. A new hybrid operating room with biplane imaging capability is being built and the hospital is the beneficiary of other significant investment in providers, facilities and programs. The current emergency department cares for over 100,000 patient visits yearly and is the busiest emergency room in the State. A health record system (EPIC) connects all of our community site practices, hospital campuses and specialty facilities.

This position will include leadership, oversight and responsibility for the Acute Care Surgery (Trauma, Surgical Critical Care and Emergency General Surgery) service at Memorial Hospital. It is anticipated that the clinical/administrative split will be 50% clinical and 50% administrative.

The trauma service will be supported by rotating surgical residents, full-time advanced practitioners as well as full time neurosurgeons, orthopedic trauma surgeons and other subspecialists such as cardiac and vascular surgeons, interventional radiologists, plastic surgery, otolaryngologists, and ophthalmologists, among others.

The Trauma Medical Director is responsible for the ongoing development, growth and oversight/authority of the Trauma Program. He/she must be able to demonstrate effective interpersonal and leadership skills and an understanding of the interdependent roles of various allied health professions. The Trauma Medical Director is responsible for promoting high standards of practice through development of trauma policies, protocols and practice guidelines, participating in rigorous performance improvement and patient safety (PIPS) activities, monitoring resident and staff education, and trauma research. He/she has authority to act on all trauma performance improvement and administrative issues and critically review trauma deaths and complications that occur within the hospital. Decisions affecting the care of trauma patients will not be made without the knowledge, input and approval of the Trauma Medical Director.

Principal Duties and Responsibilities:

- Oversee to fruition the development of a Level I Trauma Center
- Participate in the research, development and revision of trauma policies, protocols and practice guidelines on an ongoing basis.
- Implement all trauma program policies and procedures as they pertain to patient care.
- Organize, direct and integrate the trauma program with all other departments and services within the hospital.
- Promote a cooperative and collaborative working environment among the multiple clinical disciplines involved in trauma care.
- Maintain an effective working relationship with the medical staff, trauma service staff, administration and other departments.
- Provide advice and direction in recommending privileges for the trauma service.
- Participate in trauma program marketing activities.
- Direct and lead the Trauma PIPS program, actively review TQIP data, and critically review the care provided to trauma patients to foster cost-effective, high quality patient care and outcomes.
- Assess need for equipment, supplies, and personnel. Participates in submission of an annual service line budget.
- Actively participate as a member of the UC Health System Acute Care Surgery Executive Committee.

SOM faculty duties and responsibilities

Program Initiatives:
- Lead efforts to develop and maintain a Level I trauma center.
- Collaborate with the Trauma Program Manager and Trauma Program Director to establish trauma program goals and objectives consistent with those of the hospital and ensure that those of the trauma program are being met.
- Develop and provide input on the development and maintenance of practice guidelines, policies and methodologies for medical/surgical trauma care.
- Participate in site review by regulatory agencies.
- Organize, direct and implement departmental practices to assure continued compliance with applicable laws, as well as regulations and guidelines established by organizations including, but not limited to, the State of Colorado, the American College of Surgeons Committee on Trauma, and the Joint Commission on Accreditation of Hospitals.
- Demonstrate positive interpersonal relationship with colleagues, referral MDs, hospital personnel, and patients/families in order to achieve maximum operational effectiveness and customer satisfaction.
- Assure transfer agreements are in place and in good standing; maintain and foster collaborative relationships with transferring facilities.
- Make appropriate referrals for specialty services and communicate regularly with referring physicians as appropriate.
• Broad oversight of all trauma patients and has the authority to manage all aspects of trauma care, including but not limited to the correcting deficiencies in trauma care.
• Ensure that adequate attending physician availability is provided to render care to trauma patients.
• Ensure establishment of physician/surgeon call schedules for all trauma care, excluding those who do not meet educational and credentialing requirements.
• Provide trauma care leadership and consultation for emergency, surgery and intensive care unit departments.
• Participate in regional and statewide activities affecting the trauma program.
• Attend local and national meetings and conferences to remain current regarding issues relevant to the performance of duties.
• Demonstrate consistent, efficient, cost effective and quality trauma care at all times.
• Participate in trauma patient/family satisfaction projects as developed by hospital.

Performance Improvement
• Determine and implement PI activities appropriate to the trauma program.
• Oversee the trauma PI program and participate in other quality initiatives that deal with the care of the trauma-ically injured patient.
• Review and investigate all trauma PI inquiries in collaboration with the Trauma Program Director and refer to the appropriate committees.
• Monitor compliance, and identify and correct deficiencies with, trauma treatment guidelines, policies and protocols.
• Assure that the quality and appropriateness of patient care are monitored and evaluated and that appropriate actions based on findings are taken on a consistent basis.
• Report quality of care issues promptly to appropriate individuals, including Trauma Program Director and hospital administration.
• Consult with appropriate medical staff and administration regarding quality care issues and adverse outcomes; identify areas to improve patient care.
• Provide oversight to the entire continuum of care, including but not limited to helping to solve intermittent obstacles to care and meeting the requirements listed within the latest version of Resources for the Optimal Care of the Injured Patient.
• Identify representatives from various disciplines appropriate to participate in PI activities.
• Coordinate, schedule and facilitate the PI peer review process, and initiate action as necessary.
• Chair the Morbidity and Mortality Committee meeting and the Multidisciplinary Trauma Conference.
• Assist the Trauma Program Director in evaluating the effectiveness of corrective actions resulting from PI processes.
• Oversee the accuracy and validity of trauma statistics in conjunction with the Trauma Program Manager and Chief Nursing Officer.
Clinical Education:
- Support the requirements for trauma CME by participating and assisting in the education and training of hospital personnel physicians and specialists.
- Provide education for hospital staff regarding trauma program policies and appropriate medical practices.

Community Outreach:
- Maintain relations with community organization and legislative bodies whose activities relate to trauma care and injury prevention
- Participate in hospital and trauma-specific outreach activities as may be requested by administration.
- Develop and participate in trauma community education and injury prevention activities.
- Function as a liaison to other hospitals within the region.

Knowledge and Skill:
- Lead the hospital in program development.
- Oversee the clinical practice of medical staff.
- Analyze and interpret complicated information.
- Determines a course of action based on research, data, standards of care and general guidelines/protocols.
- Communicate effectively with a wide variety of intra- and inter-facility staff and administration using both oral and written communication.
- Possess critical thinking, analytical, teaching/coaching and research skills.

Requirements:
Distinguished personal record of clinical and research accomplishments in this specialty and strong interest in teaching.
- Graduate of an accredited medical school
- Completion of an accredited general surgery residency program
- Completion of an accredited Acute Care Surgery or Surgical Critical Care fellowship
- ABMS Board Certification in General Surgery and Surgical Critical Care.
- Eligible for licensure in the state of Colorado
- Prior leadership experience is highly desirable
- Experience at an academic teaching and research program, highly desirable
- Minimum of 8 years of Trauma surgery experience
- Instructor in Advanced Trauma Life Support (ATLS).
- Ability to establish and maintain effective interpersonal relationships.
- Ability to accept and implement change.
- Ability to problem solve and make decisions.
• Demonstrated history of positive collegial relations with colleagues, support staff, hospital-based providers, administrators and patients.

The Trauma Medical Director will report to the Chair of Surgery, through the Chief of the Division of G.I., Tumor, and Endocrine Surgery (GITES), University of Colorado, the CHMG CMO, through CHMG Medical Director for Acute Care surgery, and the CEO at Memorial Hospital.
Description of Associate Medical Director Activities and Duties for Trauma Services

The Associate Medical Director for Trauma Services agrees to assist the Trauma Medical Director (TMD), currently Thomas J. Schroeppel, M.D., in providing medical and administrative direction to the medical staff, nursing staff and administrative personnel providing trauma services and trauma related services.

It is understood that the Associate Medical Director will be appointed the Pediatric Trauma Medical Director in the event of Level II ACS Pediatric Trauma Center verification.

The Associate Medical Director will:

1. Primary responsibility will be to the pediatric trauma peer review process, as well as pediatric trauma process improvement activities and loop closure.

2. Associate Trauma Medical Director will assist TMD with adult trauma peer review as well as process improvement activities including loop closure.

3. Assist in the development, implementation and review of various Trauma Program policies, procedures and services as assigned by the TMD.

4. Develop processes in conjunction with Director and Manager of Trauma Services to improve provider documentation, Trauma Registry and TQIP data capture, including but not limited to injuries, complications and co-morbidities.

5. Develop processes in conjunction with other UCH-MHS Medical Directors to improve data capture related to acute care surgery work volumes.

6. Associate Trauma Medical Director will attend meetings identified by UCH-MHS and Medical Staff Leadership including but not limited to the following:
   - Serve as chair at UCH-MHS Trauma meetings when TMD is unavailable to attend.
   - Attend local and national trauma meetings in accordance with ACS recommendations and institutional needs.

7. Assist TMD with development of Trauma research platform at UCH-MHS.

8. Assist MHS-UCH Residency Program Site Director, currently Daniel Valentino, M.D. with definition of scope of resident trauma responsibilities for Level I ACS Trauma Verification application.

Thomas John Schroeppe1, M.D.

Curriculum Vitae

Home Address & Telephone

Work Address & Telephone

Memorial Hospital
Department of Surgery
1400 E. Boulder Street
Suite 600
Colorado Springs, CO 80909
(719) 364 6487

Academic Appointment

07/2007 – 06/2013 Assistant Professor of Surgery
University of Tennessee Health Sciences Center, Memphis, TN

07/2013 – 8/2016 Associate Professor of Surgery
University of Tennessee Health Sciences Center, Memphis, TN

7/2017 Clinical Associate Professor of Surgery
University of Colorado School of Medicine
Pending

Hospital Leadership Positions

08/2016 – Present University of Colorado Health - Memorial Hospital Central
Trauma Medical Director – Level 2 Trauma Center

Hospital Appointments

08/2016 – Present Memorial Hospital Central
Colorado Springs, CO

07/2006 – 08/2016 Regional Medical Center
Memphis, TN
Relinquished due to relocation.

08/2007 – 08/2016 Methodist University Hospital
Memphis, TN
Relinquished due to relocation.

07/2006 – 07/2015 Veterans Administration
Memphis, TN
Relinquished due to expired contract to cover facility.

02/2012 – 10/1/15 Baptist Memorial Hospital,
Memphis, TN
Relinquished voluntarily as practice did not include facility.

**Education**

08/2015 – Present University of Tennessee Health Science Center, Memphis, TN
Masters in Clinical Research – in progress.
Graduation date: 12/17

08/2009 – 05/2010 University of Tennessee Health Science Center, Memphis, TN
Certificate in Clinical Research

07/2005 - 06/2007 University of Tennessee Health Science Center, Memphis, TN
Trauma/Critical Care Fellowship

06/2000 - 07/2005 Gundersen Lutheran Medical Foundation, La Crosse, WI
General Surgery Residency

08/1996 - 05/2000 University of Minnesota Medical School, Minneapolis, MN
MD

08/1992 - 05/1996 Boston College, Chestnut Hill, MA
BS, Biology, Magna Cum Laude

**Honors and Awards**

May 2003 Adolf L. Gundersen Award for Surgery Research,
Gundersen Lutheran Medical Center

August 1999 Minnesota Medical Foundation Scholarship,
University of Minnesota Medical School

October 1998 Alpha Omega Alpha Scholarship,
University of Minnesota Medical School

July 1998 Academic Honors Year Two,
University of Minnesota Medical School

August 1998 Minnesota Medical Foundation Scholarship,
University of Minnesota Medical School

November 1997  Minnesota Medical Foundation Scholarship, University of Minnesota Medical School

August 1997  Academic Honors Year One, University of Minnesota Medical School

November 1996  Minnesota Medical Foundation Scholarship, University of Minnesota Medical School

May 1996  Phi Beta Kappa, Boston College

May 1995  Alpha Epsilon Delta, Boston College

Certification

American Board of Surgery Qualifying Examination
  August 2005
American Board of Surgery Certifying Examination
  May 2006

American Board of Surgery Re-Certification Examination
  December 2013

American Board of Surgery Critical Care Certifying Examination
  September 2006

American Board of Surgery Critical Care Maintenance of Certification Examination
  September 2014

Advanced Trauma Life Support – Instructor

Advanced Cardiac Life Support

Licensure

August 2016 – Present  State of Colorado – Medicine and Surgery

October 2001 – Present  State of Wisconsin – Medicine and Surgery


Memberships

September 2012 – Present  American Association for the Surgery of Trauma

February 2008 – Present  Eastern Association for the Surgery of Trauma
October 2007 – Present  Surgical Infection Society
August 2007 – Present  Southeastern Surgical Congress
June 2007 – Present  Harwell Wilson Surgical Society
July 2006 – Present  Society of Critical Care Medicine
October 2003 – Present  Society of American Gastrointestinal Endoscopic Surgeons
October 2008 – Present  American College of Surgeons

Committees
March 2017 – Present  American College of Surgeons
Colorado Committee on Trauma - Vice Chair
January 2017 – Present  University of Colorado Health
Institutional Review Board
Colorado Springs, CO
September 2016 – Present  Memorial Hospital Central
Medical Executive Committee
Colorado Springs, CO
September 2016 – Present  Memorial Hospital Central
Trauma Multi-Specialty Committee – Chairman
Colorado Springs, CO
September 2016 – Present  Memorial Hospital Central
Trauma Performance Improvement Patient Safety
Committee – Chairman
Colorado Springs, CO
September 2016 – Present  Memorial Hospital Central
Operating Room Committee
Colorado Springs, CO
September 2016 – Present  Memorial Hospital Central
Antibiotic Stewardship Committee
Colorado Springs, CO
August 2015 – August 2016  University of Tennessee Health Science Center
Institutional Review Board
Memphis, TN
August 2014 – August 2016  University of Tennessee Health Science Center, College of Medicine, Memphis TN
Promotion and Progress Committee
Memphis, TN

July 2014 – August 2016  University of Tennessee Health Science Center, Graduate Medical Education
Clinical Competency Committee – Surgical Residency
Memphis, TN

July 2014 – August 2016  University of Tennessee Health Science Center, Graduate Medical Education
Clinical Competency Committee - Surgical Critical Care Fellowship
Memphis, TN

November 2013 – August 2016  Mid-South Transplant Advisory Board
Memphis, TN

November 2013 – August 2016  Organ and Tissue Committee
Regional One Health
Memphis, TN

**Presentations**

February 27, 2017  Southeastern Surgical Congress, Nashville, TN
*Guideline Driven Care Improves Outcomes in Patients with Traumatic Rib Fractures.*

May 22, 2016  Surgical Infection Society, Palm Beach, FL
*A Multidisciplinary Approach to Antibiotic Stewardship Limits Development of Antibiotic Resistance*

February 22, 2015  Southeastern Surgical Congress, Chattanooga, TN
*How to Further Increase the Burden on a Level-I Trauma Center: Implement the Amended Work Hours*

November 19, 2014  “Pop-Up” TBI Conference
Hamilton Eye Institute, Memphis, TN
*TBI in Memphis: Past, Present, and Future Research*

March 27, 2014  Connecticut Trauma Conference, Ledyard, CT
*Heal with Steal: Operative Management of Pancreaticoduodenal Injuries*
*Invited Lecture*
February 24, 2014  Southeastern Surgical Congress, Savannah, GA
*How to Increase the Burden on Trauma Centers: Implement the 80-Hour Work Week*

September 20, 2013  American Association for the Surgery of Trauma, San Francisco, CA
*Traumatic Brain Injury and Beta-Blockers: Not All Drugs Are Created Equal*

September 20, 2013  American Association for the Surgery of Trauma, San Francisco, CA
*Traumatic Brain Injury and Beta-Blockers: Not All Drugs Are Created Equal*
e-Learning Webpage Interview

January 16, 2011  Society of Critical Care Medicine Critical Care Congress, San Diego, CA
*Impact of a Mandatory Screening Protocol for Propofol Infusion Syndrome in High Risk Trauma Patients*

October 15, 2010  Gundersen Lutheran Medical Center, La Crosse, WI
*Invited Lecture*
The July Phenomenon, A Surgical Prospective

October 1, 2009  American Association for the Surgery of Trauma, Pittsburg, PA
*Beta-adrenergic Blockade and Traumatic Brain Injury: Protective?*

January 13, 2008  Eastern Association for the Surgery of Trauma, Orlando, FL
*Invited Discussant - Redefining Screening Criteria for Blunt Cerebrovascular Injuries*

February 3, 2008  Society of Critical Care Medicine Critical Care Congress, Honolulu, HI
*The “July Phenomenon,” is trauma the Exception?*
**Oral Abstract Award Winner in Education Category**

June 9, 2006  Harwell Wilson Surgical Society, Memphis, Tennessee
*Penetrating Duodenal Injuries*
October 28, 2005  Wisconsin Surgical Society/Wisconsin Chapter ACS
Kohler, Wisconsin
An Economic Analysis of Hospital Charges for
Choledocholithiasis by Different Treatment Strategies

April 13, 2005  Society of American Gastrointestinal and Endoscopic Surgeons
Hollywood, FL
An Economic Analysis of Hospital Charges for
Choledocholithiasis by Different Treatment Strategies
Poster of Distinction Award

October 31, 2003  ACS – Committee on Trauma Region V Competition
Indianapolis, Indiana
Non-operative Management of Blunt Solid Organ Injuries: Are
Routine Follow-up Abdominal Computed Tomography Scans
Necessary?
Honorable Mention – Trauma Paper Competition

May 27, 2003  ACS – Wisconsin Committee on Trauma
La Crosse, WI
Non-operative Management of Blunt Solid Organ Injuries: Are
Routine Follow-up Abdominal Computed Tomography Scans
Necessary?
2nd Place – Trauma Paper Competition

May 30, 2002  ACS – Wisconsin Committee on Trauma
Milwaukee, WI
Aeromedical Transport of Trauma Victims Following
Cardiopulmonary Arrest: Life lost versus Lives Enriched.

Funding/Grants

August 2015

December 2015
Chapters


Publications

11. Sharpe JP, Magnotti LJ, Croce MA, Paulus EM, Schroeppe1 TJ, Fabian TC,


25. Schroeppe1 TJ, Fischer PE, Zarzaur BL, Magnotti LJ, Clement LP, Fabian TC,


38. Kim MP, Schroeppe1 TJ, Magnotti LJ, Fischer PE, Croce MA, Fabian TC.


Revised 8/24/17.
Paul Eugene Reckard, MD, MBA, FACS

Home Address:

Present Position:

Trauma, Acute Care Surgery & Surgical Critical Care
Pediatric Trauma Medical Director
Associate Trauma Medical Director
Senior Medical Director for Perioperative Services
University of Colorado Health Medical Group
Memorial Hospital
Colorado Springs, CO
February 2012 - Present

Employment History:

Trauma, Acute Care Surgery & Surgical Critical Care
Prevea Clinic

Trauma Director
St. Vincent Hospital
Green Bay, WI 54301
March 2011 - December 2012

Acute Care Surgery
Marshfield Clinic
Marshfield, WI
September 2010 - February 2011

General and Trauma Surgeon
Prevea Clinic and St. Vincent Hospital
Green Bay, WI
July 1992 - May 2009

Squadron Flight Surgeon
176th Fighter Squadron
Wisconsin Air National Guard
Truax Field, Madison, WI
October 1993 - November 1999

Chief of Surgical Services
49th Medical Group Hospital
Holloman AFB, NM
July 1990 - June 1992
Postgraduate Medical Education:

Fellowship
Surgical Critical Care
Division of Acute Care Surgery
University of Michigan
Ann Arbor, Michigan
July 2009 – June 2010

MBA in Medical Group Management
University of St. Thomas
Graduate School of Business
Minneapolis, MN
September 1999 – December 2002

Residency
Department of General Surgery
VA Medical Center and Mercy Hospital Medical Center
Des Moines, Iowa
July 1985 – June 1990

Internship:
Department of Family Practice
Hennepin County Medical Center
Minneapolis, MN
July 1984 – June 1985

Education:

Medical School:
University of Minnesota
Medical School
Minneapolis, MN
August 1980 – June 1984

Undergraduate:
University of Minnesota – Morris
Morris, MN
Bachelor of Arts, Chemistry
Honor Graduate
Scholar of the College
September 1976 – May 1980

Certification:

American Board of Surgery
Surgical Critical Care, 9/2010, expires 12/2021
General Surgery, 3/1993
Re-certification 11/2011, expires 12/2023
Pediatric Fundamentals of Critical Care July 2017
ATLS Instructor
Organizations:
Fellow American College of Surgeons
Eastern Association for the Surgery of Trauma
Pediatric Trauma Society

Licensure:
Colorado #0051777 2011 - active
Wisconsin #33021 1992 - active
Michigan #2345378 2009 - inactive
Tennessee #45474, 2009 - inactive
Minnesota #029789-7 1985 - inactive
Iowa #25243 1985 - inactive

Publications/Presentations:
ICU-acquired Clostridium difficile is an independent predictor of in-hospital mortality, Vandy, Kussman, Osborne, Reckard, Zalewski, Meldrum, Park, Napolitano, Raghavendran, University of Michigan School of Medicine, Abstract presented at SCCM Meeting, 2011

Rapid Response Teams (RRT) Improve Outcome In Surgical Patients Compared To Medical Patients, Dickinson, Bettis, Lagrou, Thompson, Campbell, Todd, Reckard, Park, Napolitano University of Michigan Hospital and Health Centers, Abstract presented at SCCM Meeting, 2010

Steroid Use is Associated with Pneumonia in Pediatric Chest Trauma, Williams, Reckard, Knox, Peterson, & Schiller, The Journal of Trauma, Vol. 32, No. 4, 1992

Morbidity and Mortality of Pediatric Chest Trauma, First Place paper in the McDonald Wood Resident Essay Contest, Arizona Chapter of the American College of Surgeons, 1988

References available upon request
POSITION DESCRIPTION

Job Title: Mgr Trauma Services

Job Code: NUR6MGRTRAEX

Exempt: Y

Created: 5/11/2017

Modified: 5/11/2017

Patient Contact: Indirect

Physical Requirements: Sedentary

Populations Served For Direct Patient Care Providers

- Premature - less than 37 weeks gestation:
- Adolescent - 13 -17 years:
- Infant - birth to 12 months:
- Adult - 18 - 64 years:
- Pediatric - 1 - 12 years:
- Geriatric - 65 years older:
- Not Applicable - N/A: NA

Position Summary

In collaboration with the medical director and organizational leaders will coordinate trauma care and systems and oversee the regulatory compliance and performance of the program as aligned with the institution's goals.

Minimum Required Education:

Bachelor of Science in Nursing (BSN) or ADN with BSN in progress.

Required Experience

3 years' relevant experience in acute care. Preferred: Leadership experience.

Licenses and Certifications


Preferred Qualifications

Skills and Abilities

Within scope of job, requires critical thinking skills, decisive judgment and the ability to work with minimal supervision. Must be able to work in a fast-paced environment and take appropriate action.

Duties and Responsibilities

Assists with developing departmental budget, goals and standards which directly support the strategic plan and vision of the service line and organization.

Maintains knowledge of all regulatory requirements and aligns the program for compliance based on institutional objectives that includes all related components in the service line continuum.

Maintains a quality program that effectively improves the performance of physicians, staff, processes, and systems related to trauma care that is aligned with national standards. Participates on and leads multidisciplinary teams.

Manages staff including performance, development, satisfaction, and conflict management. Performs and oversees scheduling, recruitment, payroll, and student engagements.

Leadership Competencies (for Leaders only):
Focus:
Charts team direction that promotes UCHealth Mission, Vision, Values and Strategic Imperatives. Achieves results.

Relationships:
Promotes UCHealth Standards of Excellence
Champions Service Excellence

Stewardship:
Stewards UCHealth resources
Drives continuous improvement

Engagement:
Facilitates the development of others
Engages staff (promotes staff engagement)

Growth:
Focuses on personal development
Applies strategies to maintain personal health

Driving Personal Vehicle  O
Driving Company Vehicles  N

This job description reflects the general level of physical work, knowledge, skills, abilities, and essential functions expected of an incumbent and it is not designed to contain an exhaustive list of activities, duties, or responsibilities that an incumbent may be assigned. Reasonable accommodations may be provided to qualified individuals with disabilities, in accordance with the ADA Amendment Act of 2008 (ADAAA).

I verify that I have reviewed the job description and will be able to perform the duties of this position with or without reasonable accommodations. If accommodations are needed, please list below.

Signature  


Addendum to Job Description

Title: Manager, Trauma Services (Adult Trauma Program Manager)

Job Code: NUR6MGRTRAE

The Manager, Trauma Services will have the following additional requirements and duties:

Manager of Trauma Services is responsible for ensuring excellence in clinical practice at Memorial Hospital Central with regard to adult trauma patient’s ages 15 years and greater. This role includes the trauma manager role responsibilities (TPM) of: the development, implementation, education, and evaluation of policies, procedures, standards, and regulations regarding trauma care. Serves as the hospital representative with the Trauma Medical Director (TMD) and Trauma Services (DTS) and for all local, regional, state, and national trauma committees. Responsible for all data management of trauma patients.

In addition, the Manager, Trauma Services responsibilities include, but are not limited to; managing direct reports, and assisting with budget/monitoring department productivity. This includes providing direct supervision and performance evaluation for the Trauma Services Employees.

Details

1. Monitors clinical outcomes and system issues related to quality of care delivery, development of quality filters, audits and case reviews, identifies trends and sentinel events, and helps to outline remedial actions while maintaining confidentiality.

2. Interacts across the system to advocate for patient care and make recommendations as needed. Assists with clinical path development and assessment related to trauma services and consults on other pathways as requested.

3. Collaborates with physicians, hospital based Management and Patient Care Managers and multi-disciplinary team members to ensure optimal clinical outcomes throughout hospital stay. Serves as a resource for clinical practice.

4. Manages the operational and personnel aspects of the Trauma Program, assists DTS with serving as a Liaison to administration and representing the Trauma Program on hospital and community committees to include EMS region four, SEMTAC, RETAC and any other local or state groups working with the Trauma Program. Hospital committees include but are not limited to Surgery, Trauma, Emergency Department and Trauma MSC/PIPS.

5. Works with the trauma outreach and injury prevention coordinator to coordinate the trauma prevention educational program extending it into the local, urban, and rural communities. Ensures that the Education Outreach Program encompasses all targeted age groups.

6. Oversees trauma registry database to include data entry, review, abstraction, and reporting. Works collaboratively with State and National trauma groups in providing and receiving data and other pertinent information.
7. Maintains advanced knowledge of the clinical practices pertaining to the trauma patient population and demonstrates ability to function as an expert clinical resource. Shows knowledge and expertise through formal/informal education, patient care conferences, and patient records. Meets annual continuing education standards, and remains competent in necessary computer skills.

8. Develops, monitors, and reports on performance improvement projects related to trauma patients. Ensures that reports are provided monthly to trauma section and produces quarterly and annual summaries. Participates in research selection, analysis and distributes findings to facilitate changes in protocols, policies or trauma interventions.
POSITION DESCRIPTION

Job Title: Trauma Program Manager RN

Job Code: NUR7PMGTRAEC  Exempt: Y  Created: 5/12/2017  Modified: 5/12/2017

Patient Contact: Direct  Physical Requirements: Medium

<table>
<thead>
<tr>
<th>Populations Served For Direct Patient Care Providers</th>
<th>Populations Served For Direct Patient Care Providers</th>
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<tr>
<td>Premature - less than 37 weeks gestation:</td>
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</tr>
<tr>
<td>Infant - birth to 12 months:</td>
<td>Geriatric - 65 years older:</td>
</tr>
<tr>
<td></td>
<td>Not Applicable - N/A:</td>
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</table>

Position Summary
In collaboration with the medical director and organizational leaders will coordinate trauma care and systems and oversee the regulatory compliance and performance of the program as aligned with the institution's goals.

Minimum Required Education:
Bachelor's degree in Nursing or ADN with BSN in progress.

Required Experience
3 years relevent experience in acute care. Preferred: Leadership experience.

Licenses and Certifications

Preferred Qualifications

Skills and Abilities
Within scope of job, requires critical thinking skills, decisive judgment and the ability to work with minimal supervision. Must be able to work in a fast-paced environment and take appropriate action.

Duties and Responsibilities
Assists with developing departmental budget, goals and standards which directly support the strategic plan and vision of the service line and organization.

Maintains knowledge of all regulatory requirments and aligns the program for compliance based on institutional objectives that includes all related components in the service line continuum.

Maintains a quality program that effectively improves the performance of physicians, staff, processes, and systems related to trauma care that is aligned with national standards.

Participates on multidisciplinary teams to collaboratively address program development, process improvement and change management.

Leadership Competencies (for Leaders only):
<table>
<thead>
<tr>
<th>Driving Personal Vehicle</th>
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<tbody>
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<td>Driving Company Vehicles</td>
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I verify that I have reviewed the job description and will be able to perform the duties of this position with or without reasonable accommodations. If accommodations are needed, please list below.

Signature ____________________________
Addendum to Job Description

Title: Trauma Program Manager RN (Pediatrics)

Job Code: NUR7PMGTRAЕ

The Trauma Program Manager RN will have the following additional requirements and duties:

Pediatric Trauma Program Manager (Pediatrics TPM) is responsible for ensuring excellence in clinical practice at Memorial Hospital Central and pediatric trauma patients (ages 0 through 14 years). This role includes the trauma manager responsibilities (TPM) of: the development, implementation, education, and evaluation of policies, procedures, standards, and regulations regarding trauma care. Serves as the hospital representative with the Pediatric Trauma Medical Director (Pediatric TMD) and Director, Trauma Services (DTS) and for all local, regional, state, and national trauma committees. Responsible for data management of pediatric trauma patients.

Details

1. Monitors clinical outcomes and system issues related to quality of care delivery, development of quality filters, audits and case reviews, identifies trends and sentinel events, and helps to outline remedial actions while maintaining confidentiality.

2. Interacts across the system to advocate for patient care and make recommendations as needed. Assists with clinical path development and assessment related to trauma services and consults on other pathways as requested.

3. Collaborates with physicians, hospital based Management and Patient Care Managers and multi-disciplinary team members to ensure optimal clinical outcomes throughout hospital stay. Serves as a resource for clinical practice.

4. Manages the operational aspects of the Pediatric Trauma Program, assists DTS with serving as a Liaison to administration and representing the Trauma Program on hospital and community committees to include EMS region four, SEMTAC, RETAC and any other local or state groups working with the Trauma Program. Hospital committees include but are not limited to Surgery, Trauma, Pediatrics, Emergency Department and Trauma MSC/PIPS.

5. Works with the trauma outreach and injury prevention coordinator to coordinate the trauma prevention educational program extending it into the local, urban, and rural communities. Ensures that the Education Outreach Program encompasses all targeted age groups (i.e., pediatrics).

6. Oversees trauma registry database to include data entry, review, abstraction, and reporting. Works collaboratively with State and National trauma groups in providing and receiving data and other pertinent information.

7. Maintains advanced knowledge of the clinical practices pertaining to the trauma patient population and demonstrates ability to function as an expert clinical resource. Shows knowledge and expertise through formal/informal education, patient care conferences, and patient records. Meets annual continuing education standards, and remains competent in necessary computer skills.
8. Develops, monitors, and reports on performance improvement projects related to trauma patients. Ensures that reports are provided monthly to trauma section and produces quarterly and annual summaries. Participates in research selection, analysis and distributes findings to facilitate changes in protocols, policies or trauma interventions.
Heather Finch, MSN, RN, CEN, TCRN
Manager Trauma Services

PROFESSIONAL PROFILE

Highly skilled and dedicated professional registered nurse with 19 years of clinical and leadership experience. Currently serving role as Manager Trauma Services in a Level II Trauma Center. Previous experience primarily in the Emergency Department setting with strong emphasis in management, process improvement, Trauma, Behavioral Health, and Pediatrics.

WORK EXPERIENCE

MANAGER TRAUMA SERVICES
UCHealth Memorial Hospital Central / August 2015 - Present
Trauma Program Manager for state designated and ACS verified Level II trauma center. Partnered with trauma leadership to grow towards Level I goal. Improved productivity and registry validation processes. Planned and taught trauma education programs. Assisted in bringing in updated equipment. Managed multiple quality improvement projects.
- Oversee Trauma Database (Lancet, Trauma One)
- Monitor the quality of care provided to trauma patients
- Coordinate interdisciplinary trauma performance projects
- Manage operations budget, including 15.6 FTE Trauma Department personnel.
- Supervising RN Trauma Clinicians, Trauma Registrars, Injury Prevention Specialist, and Education Coordinator
- Develop and deliver trauma related education, including annual Trauma Symposia
- Act as liaison for the hospital trauma program with other local, regional, and national trauma centers and organizations.

CLINICAL MANAGER, EMERGENCY DEPARTMENTS AND BEHAVIORAL HEALTH
UCHealth Memorial Hospital / August 2014 – August 2015
- Managed four departments, over 250 employees, ED annual volume 110,000 visits
- Maintained clinical competency in emergency nursing, trauma, behavioral health
- Budget, position control, strategic development, quality, service recovery, community
- Superuser in successful department transition from Cerner EMR to EPIC HER
- Participated in the development and operationalized Behavioral Health programming in the emergency departments and hospital setting to include helping to build a consultative liaison line for acute care.

INTERIM BEHAVIORAL HEALTH PROGRAM MANAGER/ INTERMIN CO-CLINICAL MANAGER EMERGENCY DEPARTMENT
UCHealth Memorial Hospital / July 2013 and March 2014 – August 2014
- Managed two departments, approximately 30 FTEs in BH
- Supported director with leadership and administrative functions for two emergency rooms, approximately 160 FTEs, annual budget, strategy, personnel development
EXPERIENCE continued

ED TEAM LEAD BEHAVIORAL HEALTH & ANCILLARY SERVICES
Memorial Health System / September 2010 – July 2013
- Managed behavioral health services line on department, systems, and community levels
- Coordinated best care practices with ancillary services
- Functioned as a clinical expert in service line

CLINICAL COORDINATOR EMERGENCY DEPARTMENT NORTH
Memorial Health System / March 2008 – September 2010
- Assist with opening new hospital emergency department and managing 30,000 patient/ year ED (staff of 60)
- CMS, JCAHO readiness, process improvement, patient satisfaction
- Project management with emphasis in Trauma Services, Fall Prevention, Relationship Based Care, and Behavioral health
- Clinical resource and staff as Charge RN, Trauma, Triage, MET response

RELIEF CHARGE NURSE EMERGENCY DEPARTMENT NORTH
Memorial Health System / April 2007 – March 2008

CO-OWNER/DIRECTOR OF BUSINESS ADMINISTRATION
NurseCall, LLC / April 2006 – May 2008

MEMBERSHIPS
Emergency Nurses Association
Society of Trauma Nurses
Sigma Theta Tau International (alumnus)
Colorado Trauma Network (organizational membership)

PUBLICATIONS

PROFESSIONAL ACCOMPLISHMENTS
- Testified in front of the Colorado Senate Judiciary Committee, for SB-15-067. (Jan 28, 2015)
Marissa L. McLean, MSN, MBA, RN, CEN

Experience

Pediatric Trauma Program Manager
UCHC Health Memorial Hospital Central, Colorado Springs, CO May 2017- Present
- Perform quality reviews on pediatric trauma patients seen within the hospital
- Teach directed pediatric trauma education to departments within the hospital
- Perform outreach teaching on injury prevention as needed
- Collaborate with Trauma Registry staff to ensure accurate data collection
- Perform data analysis using trauma registry data for process improvement
- Coordinate and participate in multidisciplinary rounding on trauma patients
- Coordinate and participate in multidisciplinary review
- Ensure processes and protocols are followed per system policy
- Collaborate with EMS stakeholders to ensure optimal care of patients
- Actively participate in designation and verification reviews for trauma center

Trauma Quality Coordinator
UCHC Health Memorial Hospital Central, Colorado Springs, CO April 2016- May 2017
- Perform quality reviews on trauma patients seen within the hospital
- Teach directed trauma education to departments within the hospital
- Perform outreach teaching on injury prevention as needed
- Collaborate with Trauma Registry staff to ensure accurate data collection
- Perform data analysis using trauma registry data for process improvement
- Participate in multidisciplinary rounding on trauma patients
- Participate in multidisciplinary review
- Coordinate and perform time keeping for annual trauma symposium
- Ensure processes and protocols are followed per system policy
- Collaborate with EMS stakeholders to ensure optimal care of patients
- Actively participate in designation and verification reviews for trauma center

Trauma Coordinator
Monterey County Health Department, EMS Agency, Monterey CA June 2014- May 2016
- Worked as designating agency for the first and only Level II Trauma Center
- Implemented standardized data collection and reporting for trauma, STEMI, and stroke programs
- Oversee STEMI, stroke, and trauma programs within the county
- Aggregate, analyze, and present data for and to stakeholders within the county
- Implement trauma quality improvement program for county
- Attend local, regional, and state meetings
- Work collaboratively with the Medical Director to develop policies and perform case reviews
- Develop, implement, and update policies for all Emergency Medical Service providers
- Work collaboratively with stakeholders to improve the system and act as a resource
- Perform case reviews and manage disciplinary actions with Emergency Medical Service providers
- Collaborate with EMS Agency team to ensure optimal functioning of the agency and the system

Registered Nurse
Mee Memorial Hospital, King City CA August 2015- May 2016
- Duties as a relief charge nurse to include delegation of staff and managing all patients within the department.
- Working as a team with other members of the department to maximize patient care.
- Assisting physician with procedures.
- Using autonomy to increase patient care and outcomes.
- Clinical surveillance for acute and chronically ill patients.
- Stabilization of patients for transport to secondary facility.
- Medication administration, along with fluid administration.
- Ensuring total patient care throughout patient stay.
- Collaborating with other departments to ensure maximized patient care.
- Utilizing interpreter services for large population of foreign language speakers.
Interim Director of Women’s Services
Castle Rock Adventist Hospital, Castle Rock, CO March, 2014-June, 2014
- Managed Labor, deliver, recovery, and postpartum unit
- Managed Neonatal Intensive Care Unit (NICU)
- Both units comprised of over 35 staff
- Created and implemented new schedule for staff
- Created a staffing plan for both units
- Acted as a liaison between administration and staff
- Hired staff to meet staffing plan
- Performed disciplinary actions as required
- Worked closely with Human Resources
- In charge of decision making on both units
- Managed patient complaints and incident reports

Administrative Manager
Castle Rock Adventist Hospital, Castle Rock, CO June, 2013- June, 2014
- Function as Lead of Administrative Manager team.
- Manage internal float pool staff, to include payroll, scheduling, appropriate delegation, and performance feedback with direct reports.
- Interview potential staff for float pool positions.
- Monitor and assist with staffing patterns for hospital.
- Set up and train directors and ancillary staff on staffing software.
- Operate as a resource to nursing staff in all departments.
- Ensure hospital functions at optimal efficiency and efficacy.
- Assist case management to ensure prompt and correct admission orders are placed.
- Serve as a first line administrator to staff.
- Assist with process improvement and process utilization.
- Work closely with physicians as a resource.
- Work closely with clinical directors as a resource.
- Monitor and manage all patient movement throughout the hospital.
- Served on People’s Council (Council dedicated to staff recognition).
- Champion, design, and implement a program to reduce compassion fatigue and burnout.
- Champion, design, and implement a hospital wide program to reduce falls.

Registered Nurse
Castle Rock Adventist Hospital, Castle Rock, CO August, 2011- June, 2013
- Registered nurse experience in a stand-alone emergency department.
- Duties as a relief charge nurse to include delegation of staff and managing all patients within the department.
- Working as a team with other members of the department to maximize patient care.
- Assisting physicians with procedures.
- Using autonomy to increase patient care and outcomes.
- Clinical surveillance for acute and chronically ill patients.
- Stabilization of patients for transport to secondary facility.
- Medication administration, along with fluid administration.
- Extensive charting in Meditech.
- Ensuring total patient care throughout patient stay.

Registered Nurse
Pikes Peak Regional Hospital, Woodland Park, CO April, 2011- June, 2013
- Registered nurse experience a rural mountain hospital.
- Using autonomy to increase patient care and outcomes.
- Clinical surveillance for acute and chronically ill patients.
- Medications administration along with fluid administration.
- Utilizing proper monitoring equipment.
- Extensive charting in HMS.
- Work as a team with other members of the department to maximize patient care.
- Utilizing technicians and delegating proper tasks.

Registered Nurse
Memorial Central Emergency Department, Colorado Springs, CO July 21, 2008-July, 2011
- Registered nurse experience in a busy, 100 bed, emergency department.
- Using autonomy to increase patient care and outcomes.
- Clinical surveillance for acute and chronically ill patients.
Medication administration along with fluid administration.
Utilizing proper monitoring equipment.
Ordering lab tests under pre-determined nursing protocols.
Extensive charting in Cerner, as well as pre-printed paper charting.
Worked as a team with other members of the department to maximize patient care.
Utilizing technicians and delegating proper tasks.

Forensic Nurse Examiner  
Memorial Central Emergency Department, Colorado Springs, CO December, 2009-August, 2010
- Perform evidence collection on both victims of violence and suspects.
- Work autonomously using pre-determined nursing protocols.
- Work as a team with other members as resources.
- Initiating lab tests based on individual patient needs using pre-determined protocols.
- Perform pelvic examinations on children and adults.
- Work extensively with child and adult victims of violence.
- Consult with patients and families who are victims of sexual and physical violence.
- Provide expert witness testimony during court trial.

Skills
Microsoft Office (Word, Excel, Power Point), Alpha keyboard 70+ wpm, numeric keyboard, data entry and filing.

Professional Organizations
- Current member of Emergency Nurses Association since 2008
- Current member of the Society of Trauma Nurses since 2017
- Current member of the Pediatric Trauma Society since 2017

Licensure
- Current Colorado Registered Nursing License in good standing.

Certifications
- Board certified emergency nurse since 2010

Verifications
- Basic Life Saver Course (BLS) 2015
- Trauma Nurse Core Course (TNCC) 2016
- Emergency Nursing Pediatric Course (ENPC) 2017
- Advanced Cardiac Life Saver Course (ACLS) 2016
- Pediatric Advanced Life Saver Course (PALS) 2016
- Hazmat training 2011
- Electrocardiogram Interpretation 2008
- Electrocardiogram 12-lead Interpretation 2008
- Successfully completed Sexual Assault Nurse Examiner Course (SANE) 2009
- Trauma Program Manager Course 2014
- Trauma Outcome Process Improvement Course 2015
- Trauma Nursing Core Course (TNCC) Instructor Course 2017
- Emergency Nursing Pediatric Course (ENPC) Instructor Course 2017

Education
- Keller School of Management  
  Attended and successfully completed Master's in Business Administration Online March 2016–October 2017
- Chamberlain College  
  Attended and successfully completed Master's in Science of Nursing Online September, 2013–December 2015
- University of Phoenix College  
  Attended and successfully completed Bachelor of Science in Nursing degree with current licensure Online May, 2008–March, 2011
- Pikes Peak Community College  
  Attended and successfully completed Registered Nurse with Associate of Science in Nursing Degree with current licensure Colorado Springs, CO January, 2006 – May 2008
- Pikes Peak Community College  
  Colorado Springs, CO October, 2002 – November, 2002
Attended and successfully completed Nurses Assistant course

**Speaking Engagements**

- Compassion Fatigue: A Pro-Active Approach  
  St. Joseph’s Hospital Critical Care Education Day, Feb, 2014

**Volunteer**

Introduction:

UCHealth Memorial Hospital is a State Designated and American College of Surgeons (ACS) Verified Level II Trauma Center. Physicians participating on all trauma call panels are required to maintain Continuing Medical Education (CME) or complete requirements for the Trauma Performance Improvement Internal Education Program consistent with the State and ACS regulations as outlined below.

Scope:

Applies to all physicians who are members of the trauma call panel at UCHealth Memorial Hospital Central.

Policy Details:

I. General Information

A. Adult and Pediatric physicians on the trauma call panels are responsible for maintaining Trauma Related CME, Advance Trauma Life Support (ATLS) and Pediatric Advanced Life Support (PALS) requirements as outlined in the attachment.

B. All liaisons to the Trauma Service shall assist in the review and compliance with CME requirements for their specialty service.

C. When a physician does not maintain the requirements shown on the attachment, the Trauma Medical Director(s) and Chief Medical Officer have the authority to suspend the non-compliant provider’s participation on the Trauma Call Panel until their CME is brought into compliance.
D. Physicians are responsible for providing verifiable documentation of trauma related CME to the Trauma Services Administration Office.

1. Documentation must include date, course or conference agenda, type and documented number of adult and/or pediatric trauma specific education hours attended and/or completed.

E. CME will be prorated for physicians new to the trauma call panel within the subsequent 36 months.

1. 1.5 CME per month will be required

F. Will accept 33 CMEs (5 crediting towards pediatrics) for each certification or recertification to count as trauma CME for all specialties if it falls in the subsequent 36 months.

G. ACLS and PALS will be granted 1 certification each for every 3-year designation cycle.

Definitions:
External Trauma Related CME shall include programs provided by visiting professors, invited speakers, attending an ATLS/PALS course, Web seminars, Childrens’ Hospital Lecture Series.

Examples of Internal CME include the following: Trauma Grand Rounds, educational conference, STAT training, educational case presentations.

Specialty specific annual meetings, conferences and symposiums (i.e., vascular, orthopedics, emergency medicine): Only the portion of the event that is documented to have relation to the care of the traumatically injured patient shall count towards Trauma CME requirements. (i.e., Total Conference 40 CME; 25 trauma related). Examples of documentation may include a copy of program schedule.

Trauma Related CME can include care related to victims of burns, mass casualty, hazardous material incidents, and critical care management.

References:
Resources for the Optimal Care of the Injured Patient 2014 (ACS)
Human Resources Standard (HR)
Medical Staff Standard (MS)

Related Policies: N/A

Applicable Joint Commission Chapter(s): N/A

The current version of this policy can be viewed on The Source. Printing is discouraged.
Introduction:
As a Colorado Department of Public Health and Environment (CDPHE) designated Level II Trauma Center, UCHealth - Memorial Hospital will require nurses participating in care of the trauma patient to maintain certain certifications and annual trauma-related education.

Scope:
UCHealth - Memorial Hospital

Guideline Details:
I. Qualifications: Registered Nurses who work in the Emergency Department (ED), Intensive Care Unit (ICU), Operating Room (OR), Post Anesthesia Care Unit (PACU), Pediatric Intensive Care Unit (PICU), or as Nursing House Supervisors (NHS) are recommended to obtain trauma-related education hours or certification annually based on the chart below:

<table>
<thead>
<tr>
<th>Required Education</th>
<th>ER</th>
<th>ICU</th>
<th>OR</th>
<th>PACU</th>
<th>PICU</th>
<th>NHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma Orientation Course Within 6 Months of Hire</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>O</td>
<td>X</td>
</tr>
<tr>
<td>Beyond the Golden Hour</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>TNCC Current Within 1 Year of Hire</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>ICU Trauma Core Within 1 Year of Hire</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>O</td>
<td>X</td>
</tr>
<tr>
<td>ENPC Current Within 1 Year of Hire</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attend a trauma conference with 4 or greater CE or Attend live or watch two Trauma Grand Rounds CE videos and Complete two online trauma CE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Annual Trauma-Related CE Hours</td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>10</td>
<td>tbd</td>
<td>8</td>
</tr>
</tbody>
</table>

X = currently in place  O = will be implemented in 2018
**Memorial Hospital**

**Guidelines for Trauma-Related Continuing Education for Nursing**

II. **Required Documentation:** A copy of continuing education (CE) certificate and/or official documentation provided should be kept with each department manager/educator for a period of 3 years. Nurses should also keep a copy in their personal files. Documentation of education ours and attestations of completions should be kept in each department and an overview be reported to the Trauma Program Manager annually.

III. **Examples of Trauma-Related CE’s**

   A. Any conference with “trauma” in the title (e.g. 2017 UCHealth Trauma, Critical Care & EMS Symposium or Rocky Mountain EMS and Trauma Conference).
   
   B. On-line CE’s pertaining to trauma (e.g. cervical spine injuries, traumatic brain injuries, wound management, etc.). This may be from any source with proof of certificate.
   
   C. Certification courses, such as Trauma Nurse Core Curriculum (TNCC) or Emergency Nurse Pediatric Course (ENPC):
     1. If you are instructor of any of these courses, you will be awarded the number of hours you taught (lectures and skills stations) plus preparation time.
     2. If you are certifying or re-certifying, the total hours received from the course will be counted.
   
   D. Simulated Trauma Alert Training (STAT) or other simulated trauma education.
   
   E. Staff meeting presentations, poster presentations, or journal club articles on trauma topics.
   
   F. Attendance of Trauma Grand Rounds.
   
   G. Credits may be awarded through any other hospital based trauma education activity as deemed appropriate by the Trauma Services Department and the Clinical Education Department.

**Definitions:** N/A

**References:** N/A

**Related Policies:** N/A
MEDICAL STAFF LEADER INDEPENDENT CONTRACTOR AGREEMENT

This Medical Staff Leader Independent Contractor Agreement (the "Agreement") is made and entered into effective as of the 1st day of November, 2013, (the "Effective Date") by and between UCH-MHS, a Colorado nonprofit corporation, and George L. Hertner, M.D., an individual resident of the State of Colorado (the "Medical Staff Leader").

RECITALS

A. UCH-MHS is a healthcare system that provides a full continuum of healthcare delivery services through its network of professional service providers. UCH-MHS operates two licensed hospitals, Memorial Hospital Central and Memorial Hospital North (each a "UCH-MHS Hospital") as well as ancillary care facilities (the “UCH-MHS Hospitals and other facilities collectively referred to as "UCH-MHS").

B. Medical Staff Leader is licensed to practice medicine in the State of Colorado, is a member of the Medical Staff of UCH-MHS, is board certified in emergency medicine (the “Specialty”), and possesses the skills, knowledge and training to serve as Medical Staff Leader for the Emergency Medicine Services Department (the “Services”) at UCH-MHS.

C. UCH-MHS desires to contract with Medical Staff Leader, on an independent contractor basis, to provide the Services, and Medical Staff Leader desires to enter into an agreement with UCH-MHS to provide such Services.

NOW, THEREFORE, in consideration of the foregoing recitals and the mutual agreements set forth herein, the parties agree as follows:

ARTICLE 1
TERM OF ENGAGEMENT

1.1 Term. UCH-MHS hereby engages Medical Staff Leader, on an independent contractor basis, to provide the Services for the remaining 2013 term of Dr. Mel D. Robinson and for a term of two (2) years (“Term”) thereafter, beginning on the Effective Date and expiring on December 31, 2015, unless earlier terminated pursuant to ARTICLE 4. This Agreement, however, will automatically terminate if: (a) Medical Staff Leader is no longer qualified to serve as a Medical Staff Leader or as an Emergency Medicine Services Section Chief, in accordance with UCH-MHS’s Medical Staff Bylaws, Rules and Regulations, as amended from time to time, which have been provided to Medical Staff Leader and are incorporated herein by reference; (b) Medical Staff Leader resigns or is removed from his or her office or leadership position by the Medical Staff, in accordance with the Medical Staff Bylaws, Rules and Regulations; or (c) Medical Staff Leader’s term of office or leadership position otherwise terminates or expires in accordance with the Medical Staff Bylaws, Rules and Regulations.
ARTICLE 2
MEDICAL STAFF LEADER RESPONSIBILITIES

2.1 Medical Staff Leader Responsibilities. Beginning on the Effective Date and continuing throughout the Term of this Agreement, Medical Staff Leader will provide Services as Medical Staff Leader of the Emergency Medicine Services Department at UCH-MHS, which shall include such Services as more fully described in Exhibit A attached to this Agreement and incorporated by reference. In such capacity, Medical Staff Leader will assume and discharge all responsibility for the medical direction and medical management of the Emergency Medicine Services Department at UCH-MHS (the "Program").

2.2 Coverage. Medical Staff Leader will devote such time and attention as is necessary to fulfill the duties and responsibilities of Medical Staff Leader required by this Agreement. Medical Staff Leader will not be required to provide services exclusively to UCH-MHS.

2.3 UCH-MHS Medical Staff Membership. Beginning on the Effective Date and continuing throughout the Term of this Agreement, Medical Staff Leader will be a member of the UCH-MHS medical staff, and must maintain full and unrestricted clinical privileges at UCH-MHS customary for the Specialty. Medical Staff Leader’s obligations and duties under this Agreement are in addition to those duties applicable to Medical Staff Leader as a member of the UCH-MHS medical staff. Medical Staff Leader will not bill UCH-MHS for time associated with other medical staff responsibilities, it being understood that compensation under this Agreement is solely for documented services rendered with respect to the Program.

2.4 Participation. Medical Staff Leader must seek, obtain and maintain the right to participate in Medicare, Medicaid, managed care plans and other third-party reimbursement agreements as may be reasonably requested by UCH-MHS.

2.5 External Reviews. Medical Staff Leader shall cooperate with any corporate or regulatory compliance program and accreditation/certification efforts now or hereafter instituted by UCH-MHS.

2.6 Billing. Medical Staff Leader may not charge patients or third-party payor for Services rendered as Medical Staff Leader pursuant to this Agreement, it being understood that the Services rendered as Medical Staff Leader of the Program are not direct patient professional services and are not anticipated to be billed by Medical Staff Leader to patient or any third party payor.

2.7 Contract Evaluation. On an annual basis, the Chief Medical Officer or his or her designee, will evaluate Medical Staff Leader’s performance hereunder in accordance with duties set forth in Exhibit A.

2.8 Non-Exclusion. Medical Staff Leader represents and warrants that Medical Staff Leader is not currently, and at no time has he or she been excluded from participation in any federally funded health care program, including Medicare and Medicaid.
Medical Staff Leader must notify UCH-MHS within three (3) days following the date upon which Medical Staff Leader knows or is in receipt of information that would provide Medical Staff Leader or another reasonably prudent person with knowledge of any threatened, proposed, or actual exclusion of Medical Staff Leader from any federal health care program. Medical Staff Leader will indemnify UCH-MHS against all actions, claims, demands and liabilities, and against all loss, damage, costs and expenses, including reasonable attorneys’ fees, arising directly or indirectly, out of any violation of this Section 2.8 by Medical Staff Leader, or due to the exclusion of Medical Staff Leader from a federally funded health care program.

2.9 **Insurance.** Medical Staff Leader is covered under UCH-MHS’s Directors and Officers insurance policy providing coverage for the Services.

2.10 **Standards.** Medical Staff Leader will provide Services under this Agreement in compliance with all applicable federal and state statutes, regulations, rules and standards, including the Medicare Conditions of Participation applicable to UCH-MHS and/or Medical Staff Leader. Medical Staff Leader will provide Services under this Agreement in compliance with all applicable requirements of The Joint Commission, as well as all policies, procedures, Medical Staff Bylaws, Rules and Regulations of UCH-MHS, as may be amended from time to time.

2.11 **Records and Reports.**

2.11.1 **Time Record.** Medical Staff Leader shall, by the fifteenth (15th) day of each calendar month, submit a time record to UCH-MHS for the previous calendar month on the form attached as **Exhibit B**, itemizing the Services performed by Medical Staff Leader under this Agreement, consistent with those required under **Exhibit A**. The time record for each month will be maintained contemporaneously with Medical Staff Leader's provision of Services, and must state the Services provided with reasonable specificity.

2.11.2 **Other Records.** In addition to the time record described in Section 2.11.1, Medical Staff Leader must maintain and furnish to UCH-MHS other records or reports that document the Services performed by Medical Staff Leader under this Agreement and are required by applicable law or are reasonably requested by UCH-MHS.

**ARTICLE 3**

**UCH-MHS RESPONSIBILITIES**

3.1 **Compensation for Medical Staff Leader Services.** In consideration of the Services to be provided by Medical Staff Leader to UCH-MHS under this Agreement and as specified in the Medical Staff Bylaws, Rules and Regulations, UCH-MHS will pay
reflected on Exhibit B shall not include any time during which Medical Staff Leader was otherwise on-call or performing other duties at UCH-MHS, whether or not UCH-MHS compensates Medical Staff Leader for such other duties, and shall reflect only time spent exclusively in the performance of Medical Staff Leader Services.

3.2 **Fair Market Value.** The compensation described in this Agreement is consistent with the fair market value of the Services arrived at through arm’s-length negotiations between the parties. Payments are not intended to relate to and do not, in fact, take into account the volume or value of any referrals or business otherwise generated for or with respect to UCH-MHS, or between the parties, for which payment may be made in whole or in part under Medicare or any federal or state health care program or under any other third party payor program.

**ARTICLE 4**
**TERMINATION**

4.1 **Termination by UCH-MHS.** UCH-MHS may terminate this Agreement as follows:

4.1.1 Immediately upon the death of Medical Staff Leader or disability of Medical Staff Leader that renders him or her unable to perform the obligations under this Agreement.

4.1.2 Immediately, upon written notice to Medical Staff Leader, if:

(a) Medical Staff Leader's medical staff appointment or privileges at UCH-MHS or any UCH-MHS Hospital for which Medical Staff Leader provides Services under this Agreement are terminated, suspended, restricted, or not renewed;

(b) Medical Staff Leader's license to practice medicine in any state is revoked, suspended, restricted, or expires;

(c) Medical Staff Leader is convicted of or enters a nolo contendere plea to any crime punishable as a felony, or any crime punishable as a misdemeanor that relates to violence, sexual misconduct, child abuse, patient care, controlled substances, or involving moral turpitude or immoral conduct as determined by UCH-MHS;

(d) Medical Staff Leader is excluded from any federal or state health care program (e.g., Medicare or Medicaid);

(e) Medical Staff Leader becomes uninsurable under the liability insurance provided pursuant to Section 2.9 above; or,

(f) The Program ceases operations for any reason.

4.1.3 At any time, if Medical Staff Leader materially breaches any of the terms of this Agreement, including, but not limited to, Medical Staff Leader’s failure to comply with applicable federal and/or state statutes, regulations, rules and standards, the requirements of The Joint Commission, or any policies, procedures, Medical Staff Bylaws, Rules and Regulations of UCH-MHS, as
amended from time to time, which have been provided to Medical Staff Leader and are incorporated by reference; but only if such breach is not cured by Medical Staff Leader within fifteen (15) days of UCH-MHS’s written notice to Medical Staff Leader. Any notice regarding a breach of this Agreement must specifically describe the nature of the breach.

4.1.4 At any time, with or without cause, upon thirty (30) days’ prior written notice to Medical Staff Leader that UCH-MHS wishes to terminate this Agreement, or immediately upon payment in lieu of notice based upon Medical Staff Leader’s average monthly compensation under this Agreement during the previous twelve months prorated for thirty days minus the amount of notice given (or if this Agreement has been in effect for less than twelve months, then upon payment of the average monthly compensation for the period served, similarly prorated).

4.2 **Termination by Medical Staff Leader.** Medical Staff Leader may terminate this Agreement as follows:

4.2.1 At any time if UCH-MHS materially breaches any of the terms of this Agreement, but only if such breach is not cured by UCH-MHS within fifteen (15) days of Medical Staff Leader’s written notice to UCH-MHS. Any notice regarding a breach of this Agreement must describe the breach in detail.

4.2.2 At any time, with or without cause, upon thirty (30) days’ prior written notice to UCH-MHS that Medical Staff Leader wishes to terminate this Agreement.

4.3 **Termination by Mutual Agreement.** This Agreement may be terminated at any time by mutual written agreement of the parties.

4.4 **Continuing Obligation after Termination.** This Agreement imposes certain duties upon Medical Staff Leader that may continue after termination of this Agreement (e.g., the duty to complete and sign records of Services performed). Regardless of the reason for or manner of termination, Medical Staff Leader must fulfill continuing duties that apply to Medical Staff Leader.

4.5 **Termination During First Year of Agreement.** If this Agreement is terminated for any reason within one (1) year of the Effective Date, then UCH-MHS and Medical Staff Leader will not enter into any agreement with each other for services substantially similar to the Services covered under this Agreement until the expiration of one (1) year from the Effective Date.

**ARTICLE 5**

**REGULATORY REQUIREMENTS**

5.1 **Access to Records.** For four (4) years following any Services furnished to UCH-MHS under this Agreement, Medical Staff Leader must make available, upon written request from the Secretary of the Department of Health and Human Services, and upon request from the Comptroller General of the United States, or any of their duly authorized representatives, this Agreement and all books, documents, and records of Medical Staff Leader that are necessary to verify the nature and extent of such costs related to the Services provided under this Agreement.
5.2 UCH-MHS's Proprietary Information, HIPAA, Work Product.

5.2.1 Definition of "Confidential Information." For purposes of this Agreement, the term "Confidential Information" includes: (a) any information pertaining to the business of UCH-MHS or any parent, subsidiary, or affiliate of UCH-MHS that is not readily available to the public domain; (b) any information or data pertaining to patients at UCH-MHS or any UCH-MHS-operated facility, their identity, medical care and treatment and/or test results or any other information protected under applicable state or federal law, including the Health Insurance Portability and Accountability Act and regulations promulgated hereunder ("HIPAA"); and, (c) any information or data related to quality improvement, or peer review activities. "Confidential Information" does not include information that: (i) is or becomes publicly available through no fault of Medical Staff Leader; (ii) is already in the possession of Medical Staff Leader prior to the discussions with UCH-MHS that resulted in this Agreement; or, (iii) is disclosed to Medical Staff Leader by a third party who is under no obligation of confidence to UCH-MHS.

5.2.2 Prohibited Disclosures and Use. In the course of performing the duties under this Agreement, Confidential Information may be disclosed to Medical Staff Leader that constitutes either confidential patient information or valuable business information developed by UCH-MHS at great expenditure of time, effort and money. Medical Staff Leader may not, either during the term of this Agreement or thereafter, use Confidential Information for any purpose other than performance of his or her duties under this Agreement. Medical Staff Leader must keep all Confidential Information strictly confidential and must not disclose such information to any third party without the express prior written consent of UCH-MHS, except as permitted in Section 5.2.3 below.

5.2.3 Permitted Disclosures.

(a) The provisions of HIPAA, and accompanying regulations at 45 C.F.R. Sections 160 and 164, govern the parties' use and disclosure of protected health information, as HIPAA defines that term. Neither of the parties may use or disclose protected health information except as permitted by HIPAA and applicable state law, and to the extent HIPAA requires authorization for any use or disclosure of protected health information, each party will be responsible for obtaining directly from the individuals whose protected health information is to be used or disclosed, any authorizations to use and/or disclose protected health information as needed for performance under the terms of this Agreement. Either party
may use and disclose protected health information for purposes of that party's treatment, payment, and health care operations, without authorization. Each party will implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that each party creates, receives, maintains, or transmits. To the extent Medical Staff Leader will function as a Business Associate of UCH-MHS, as that term is defined by HIPAA (45 C.F.R. § 160.103), the use and disclosure of protected health information are controlled by the Business Associate Agreement attached to this Agreement as Exhibit C and hereby incorporated by reference.

(b) Medical Staff Leader may: (i) disclose Confidential Information as required by law, provided that Medical Staff Leader must give UCH-MHS notice as soon as practicable to afford UCH-MHS a reasonable opportunity to intervene, to obtain a protective order, or to otherwise lawfully prevent such disclosure; (ii) disclose, in confidence, the terms and conditions of this Agreement to Medical Staff Leader's attorneys or accountants; (iii) disclose patient information solely for purposes of treatment, payment and health care operations, including UCH-MHS's quality improvement and peer review activities, in accordance with applicable laws, UCH-MHS's Medical Staff Bylaws, Rules and Regulations, and medical ethics; and, (iv) disclose information necessary to defend against malpractice claims against Medical Staff Leader to the fullest extent permitted under federal and state laws, rules and regulations.

5.2.4 Ownership of Work Product. All materials and any ideas prepared or developed by Medical Staff Leader while performing Services under this Agreement, including without limitation, any research results, techniques, inventions, discoveries, improvements, practice guidelines, care paths, policies and procedures, protocols and other decision-making tools ("Work Product") must be promptly disclosed and furnished to UCH-MHS. All right, title and interest in the Work Product vests in UCH-MHS and is deemed to be a work made for hire, and to the extent it may not be considered a work made for hire, Medical Staff Leader assigns to UCH-MHS all right, title, and interest in the Work Product, including all copyrights, patents and applications therefore.

5.2.5 No Rights or Privileges in Confidential Information or Work Product; Irreparable Harm. Medical Staff Leader does not, by virtue of this Agreement, obtain any rights or privileges to any Confidential Information or Work Product, all of which belongs to UCH-MHS, and are valuable, special and unique assets of UCH-MHS' business. Upon termination of this Agreement for any reason, Medical Staff Leader must promptly deliver to UCH-MHS all Confidential Information and Work Product, including any copies thereof, in his or her possession and control. Medical Staff Leader acknowledges that UCH-MHS would suffer great loss and irreparable harm from the disclosure of Confidential Information or Work Product in violation of the terms of this Article and, in the event of Medical Staff Leader's breach or threatened breach of this Article, and without limiting UCH-MHS's other
remedies, UCH-MHS will be entitled to an injunction restraining any breach without showing or proving any actual damages sustained or likely to be sustained.

5.3 Immunity from Liability under Colorado Law. To the extent the Services provided by Medical Staff Leader under this Agreement include peer review and quality improvement activities, such activities are intended to be conducted in a manner that avails Medical Staff Leader, as a Medical Staff Leader, of the protections and immunity from liability granted to peer review activities under the Colorado Professional Review Act, C.R.S. §12-36.5-104, et seq., and such quality management program activities under C.R.S. § 25-3-109.

5.4 Disclosure of Criminal History. Medical Staff Leader certifies that he or she has not been convicted of a crime or petty misdemeanor, in the past ten (10) years, involving dishonesty, breach of trust, or violence to others.

5.5 False Claims Liability, Anti-Retaliation Protections, and Detecting and Responding to Fraud, Waste and Abuse. Medical Staff Leader acknowledges that he or she has read the policy of UCH-MHS to provide health services in a manner that complies with applicable federal and state laws and that meets the high standards of business and professional ethics. Medical Staff Leader agrees to comply with the policy in accordance with Section 6032 of the Deficit Reduction Act of 2005. A copy of the policy is attached as Exhibit D.

ARTICLE 6
MISCELLANEOUS

6.1 Relationship of the Parties.

6.1.1 While performing Services under this Agreement, Medical Staff Leader is and must at all times act as an independent contractor with respect to UCH-MHS, and not as an employee or agent of UCH-MHS. Nothing contained in this Agreement is intended to nor may be construed to: (a) create a joint venture, partnership, association, or other affiliation or like relationship between the parties; (b) allow UCH-MHS to exercise control or direction over the manner or method by which Medical Staff Leader performs his or her obligations pursuant to this Agreement; or, (c) give Medical Staff Leader the authority to enter into any agreement on behalf of UCH-MHS, or to commit UCH-MHS to any financial obligation, without the express prior written approval of UCH-MHS. The Services to be performed by Medical Staff Leader under this Agreement must be provided in a manner consistent with federal and state statutes, regulations, rules and standards, the professional standards governing such Services, UCH-MHS's Medical Staff Bylaws, Rules, Regulations and policies, the provisions of this Agreement, and the standards and recommendations of The Joint Commission, as may be in effect from time to time.
6.1.2 Medical Staff Leader does not have any claim under this Agreement or otherwise against UCH-MHS for vacation pay, paid sick leave, retirement benefits, Social Security, workers' compensation, health, disability, professional malpractice or unemployment insurance benefits or other employment benefits of any kind.

6.1.3 Medical Staff Leader will not be treated as a UCH-MHS employee for tax purposes. All payments by UCH-MHS to Medical Staff Leader will be in gross amounts and Medical Staff Leader (and not UCH-MHS) will be solely liable for federal, state and local income taxes and federal self-employment taxes relating to income received by Medical Staff Leader under this Agreement. UCH-MHS will not withhold FICA (Social Security) from payments to Medical Staff Leader, make state or federal unemployment insurance contributions on behalf of Medical Staff Leader, withhold state or federal income tax from payments to Medical Staff Leader, obtain workers' compensation insurance on behalf of Medical Staff Leader, or withhold or make contributions on behalf of Medical Staff Leader for any other withholding pursuant to any law or requirement of any governmental body. Medical Staff Leader will also be solely responsible for any tax and interest payments that might also apply under Section 409A of the Internal Revenue Code of 1986, as amended. Medical Staff Leader will indemnify UCH-MHS from any and all loss or liability incurred by UCH-MHS and arising from Medical Staff Leader's failure to make such payments or withholdings and provide such benefits, if any.

6.1.4 If the Internal Revenue Service or any other governmental agency challenges Medical Staff Leader's independent contractor status, both Medical Staff Leader and UCH-MHS may participate in any discussion or negotiation occurring with any such agency or agencies, regardless of with whom or by whom such discussions or negotiations are initiated.

6.2 **No Referrals.** Nothing contained in this Agreement or any other agreement between Medical Staff Leader and UCH-MHS will obligate either party to refer patients to the other party, its affiliated providers or facilities.

6.3 **Assignment and Binding Effect.** Medical Staff Leader may not assign Medical Staff Leader's rights or obligations under this Agreement. UCH-MHS may not assign its rights and obligations under this Agreement except to any entity which it controls, is controlled by, or which is under common control with UCH-MHS or any successor organization. Notwithstanding the termination, expiration, or Non-Renewal of this Agreement, the parties must carry out any provisions of this Agreement that contemplate performance subsequent to termination, expiration, or Non-Renewal.

6.4 **Amendments.** No amendments to this Agreement will be binding unless in writing and signed by both parties.

6.5 **Applicable Law.** This Agreement will be construed in accordance with the laws of the State of Colorado. The parties expressly consent to exclusive venue and
jurisdiction for any disputes under this Agreement in the District Court of El Paso County, Colorado, and if necessary for exclusive federal questions, the United States District Court for the District of Colorado.

6.6 **Legal Requirements.** UCH-MHS's obligations under this Agreement are contingent upon such actions being permissible under applicable federal, state, or local law or regulatory requirements.

6.7 **Headings.** The paragraph headings used in this Agreement are included solely for convenience and will not affect, or be used in connection with, the interpretation of this Agreement.

6.8 **Notices.** All notices permitted or required to be given under this Agreement must be in writing and will be considered sufficiently made or given on the date of mailing if sent to the other party by certified, United States mail, addressed to it at its address set forth below, or to such other address as it will designate by written notice similarly given, to the other party:

If to UCH-MHS:  
Chief Medical Officer  
UCH-MHS  
1400 E. Boulder  
Colorado Springs, CO 80909

If to Medical Staff Leader:  
George L. Hertner, M.D.  
Emergency Medical Specialists, PC.  
1400 E. Boulder  
Colorado Springs, CO 80909

6.9 **Waiver.** The failure of either party to insist in any one or more instances upon the performance of the terms, covenants, or conditions of this Agreement and to exercise any rights hereunder will not be construed as a waiver or relinquishment of future performance of any such term, covenant, or condition or the future exercise of such right. The obligations of the other party with respect to such future performance will continue in full force and effect.

6.10 **Severability.** If a court of competent jurisdiction holds any provision of this Agreement invalid or unenforceable, the remaining provisions will nonetheless be enforceable. Further, any provision of this Agreement that a court determines is overbroad as written will be deemed amended to the extent necessary to make the provision enforceable according to applicable law. The amended provision will be enforced as amended.

6.11 **Entire Agreement.** This Agreement, together with its Exhibits, constitutes the parties' entire agreement with respect to the subject matter addressed, and supersedes any and all prior agreements, understandings, promises, and representations made by either party to the other concerning the subject matter and the applicable terms of this Agreement.
6.12 **No Third-Party Rights.** Nothing in this Agreement is intended to confer any rights or remedies under or by reason of this Agreement on any persons other than the parties to it and their respective successors and assigns.

6.13 **General Interpretation: Ambiguities.** The parties have read and understand this Agreement and its legal effect, and each has had a reasonable opportunity to obtain independent legal counsel for advice and representation in connection with this Agreement. The terms of this Agreement have been negotiated by UCH-MHS and Medical Staff Leader and no rule of strict construction may be applied to either party.

6.14 **Counterparts.** This Agreement may be executed in two or more counterparts.

6.15 **Jeopardy.** Notwithstanding anything in this Agreement to the contrary, if the performance by either party of any term, covenant, condition or provision of this Agreement will jeopardize the licensure of either party, the participation of either party in, or the payment or reimbursement from, any federal health care program, or will prevent or prohibit Medical Staff Leader or any other person from utilizing the UCH-MHS Hospitals or any services, or if for any other reason said performance should be in violation of any statute or be otherwise deemed illegal, the parties must immediately initiate negotiations to resolve the matter through amendments to this Agreement. If the parties are unable to resolve the matter within thirty (30) days thereafter, either party may then, at its option, immediately terminate this Agreement.

6.16 **Other Agreements.** Any additional agreements between UCH-MHS and Medical Staff Leader are incorporated herein by reference or incorporated into UCH-MHS’s master database list of contracts. Agreements between the parties that remain in full force and effect are as follows:

6.17 **Advertising.** Neither party to this Agreement shall use the name of the other party in any advertising, marketing or promotional materials without the express written consent of the other party.

6.18 **Attorney’s Fees.** In the event that either party brings legal action to enforce any provision of this Agreement, the prevailing party shall be entitled to recover all reasonable costs and expenses, including attorney’s fees, incurred by such party in connection with such action.

6.19 **Code of Conduct.** Consistent with the OIG initiative encouraging health care providers to engage in efforts to combat fraud and abuse in health care, the Hospital has implemented a corporate compliance program for which its Code of Conduct relating to business ethics is an integral part. Accordingly, Medical Staff Leader agrees to take no action that would result in a violation of the Hospital’s Code of Conduct.

6.20 **Binding Effect.** All of the provisions of this contract shall be binding upon and inure to the benefit of the respective lawful successors and permitted assigns of the parties to this Agreement.

6.21 **Responsibility for Damages.** To the extent permitted by law, each party agrees to be responsible for all liability, losses, damages, claims, or causes of action, and
related expenses, which result from that party's negligent acts or omissions during the performance of this Agreement. In no event shall either party be subject to or liable for any indirect, incidental, consequential, reliance, special or punitive loss or damages arising from this Agreement unless otherwise expressly set forth herein.

6.22 Dispute Resolution. At the written request of either party, the parties will attempt to resolve any dispute arising under or relating to this Agreement through the informal means described in this Section. UCH-MHS will appoint a senior management representative who does not devote substantially all of his or her time to performance of this Agreement, to endeavor to resolve the dispute with Medical Staff Leader. The representative and Medical Staff Leader will furnish to each other all non-privileged information with respect to the dispute that the parties believe to be appropriate and germane. The representative and Medical Staff Leader will use commercially reasonable efforts to resolve the dispute without the necessity of any formal proceeding. Formal proceedings for the resolution of the dispute may not be commenced until the earlier of: (i) the representative and Medical Staff Leader conclude that resolution through continued negotiation does not appear likely; or (ii) thirty (30) days have passed since the initial request to negotiate the dispute was made; provided, however, that a party may file earlier to avoid the expiration of any applicable limitations period, to preserve a superior position with respect to other creditors, or to apply for interim or equitable relief.

IN WITNESS WHEREOF, the parties have entered into this Agreement as of the Effective Date.

UCH-MHS

By: [Signature]
Its: Chief Executive Officer
Date: 11/4/13

MEDICAL STAFF LEADER

By: [Signature]
Its: Chief Financial Officer
Date: 11/4/13
EXHIBIT A
Medical Staff Leader Services
Section Chief Duties

Medical Staff Leader hereby agrees to perform the Services of a Medical Staff Leader in accordance with the Agreement and the Medical Staff Bylaws, Rules and Regulations, as amended from time to time, as outlined, below. Medical Staff Leader further agrees to specifically fulfill the requirements of an Emergency Medicine Services Section Chief, in accordance with UCH-MHS’s Medical Staff Bylaws, Rules and Regulations. The Services provided by the Medical Staff Leader will include the following specific duties and responsibilities:

Physicians in specific specialties shall organize themselves into “sections” for purposes of:

1. Assisting the department in fulfilling its function, particularly in the evaluation of candidates for privileging and for peer review functions;

2. Continuing education;

3. Grand rounds;

4. Discussion of policy;

5. Discussion of equipment needs;

6. Development of reports or privileging criteria, as requested by the department chair, MEC, or Credentials Committee;

7. Discussion of, and recommendations related to, specific issues, as requested by the department chair, MEC, or Board; and,

8. Meeting with the department chair to review section activities as least two (2) times each year.
EXHIBIT B

MEDICAL STAFF LEADER DETAILED HOURS SUMMARY

Medical Staff Leader:  **SECTION CHIEF**  Term: 2014-2015

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**TOTAL:**

Please provide detailed information regarding chargeable hours that you are submitting for reimbursement.
Please include the name of people you are working with so that these hours can be verified.

Return to:  
**Medical Staff Services**
UCH-MHS
1400 E. Boulder Street
Colorado Springs, CO 80909
Fax: 719-365-6884

I hereby represent that the Medical Staff Leader services described above were performed on the dates noted and do not include time Medical Staff Leader was otherwise on-call or performing other duties at the Facility.

Medical Staff Leader Signature: _____________________________ Date: ____________

Approved by CMO: _____________________________ Date: ____________
EXHIBIT C

HIPAA BUSINESS ASSOCIATE AGREEMENT

THIS AGREEMENT is entered into by and between Medical Staff Leader ("Business Associate") and UCH-MHS (formerly known as "Memorial Health System") ("Covered Entity"). Business Associate is an independent contractor of Covered Entity. Business Associate and Covered Entity are individually referred to as a "Party" and collectively as the "Parties."

1. Applicability; Conflicts. This Agreement applies with respect to all contracts or other arrangements ("Underlying Agreement") by and between Business Associate and Covered Entity that involve the use or disclosure of Protected Health Information ("PHI"). This Agreement addresses the business associate requirements of the Health Insurance Portability and Accountability Act of 1996 ("HIPAA") as amended by the American Recovery and Reinvestment Act of 2009 ("ARRA") (P.L. 111-5), HIPAA's implementing regulations (45 C.F.R. Parts 160 and 164), and the Service Provider requirements of the Identity Theft Red Flag Rule (the "Red Flags Rule") under the Fair and Accurate Credit Transaction Act (16 C.F.R. Part 681), all as may be further amended from time to time. Capitalized terms used but not otherwise defined in this Agreement shall have the same meaning as those terms in 45 C.F.R. §§ 160.103, 164.103, 164.304 and 164.501, as amended from time to time. As used in this Agreement, all references to PHI shall refer to the PHI of Covered Entity unless stated otherwise. In the event of any conflict or inconsistency between the provisions of this Agreement and the provisions of the Underlying Agreement, the provisions of this Agreement shall control. Furthermore, any ambiguity in this Agreement shall be resolved in favor of a meaning that permits Covered Entity to comply with HIPAA.

2. Obligations and Activities of Business Associate. Business Associate agrees as follows:

(a) Business Associate agrees not to use or further disclose PHI other than as permitted or required by this Agreement, the Underlying Agreement, or as Required By Law.

(b) Business Associate agrees to use appropriate safeguards to prevent use or disclosure of PHI other than as provided for by this Agreement. Business Associate will document and keep these safeguards current. With respect to any and all electronic PHI, Business Associate agrees to implement administrative, physical and technical safeguards that reasonably and appropriately protect the confidentiality, integrity and availability of the electronic PHI that it creates, receives, maintains, or transmits on behalf of Covered Entity.

(c) Business Associate agrees to report promptly, in writing, to Covered Entity any use or disclosure of PHI not provided for by this Agreement, or any Security Incident involving electronic PHI, of which Business Associate becomes aware. Each report shall identify the nature of the non-permitted use or disclosure, the PHI used or disclosed, the person(s) who made the use or disclosure, the person(s) who received the PHI, the corrective action taken by Business Associate and such other information as Covered Entity may reasonably request. Business Associate will cooperate with Covered Entity in the investigation and resolution of the matter, and will mitigate, to the extent practicable, any harmful effects that are known to or can reasonably be detected by Business Associate.

(d) Business Associate agrees to ensure that any agent, including a subcontractor, to whom it provides PHI received from, or created or received by, Business Associate on behalf of Covered Entity, agrees to the same restrictions and conditions that apply through this Agreement to Business Associate with respect to such information.

(e) Business Associate certifies that its workforce, as defined by 45 C.F.R. § 160.103 and who uses or discloses Covered Entity's PHI, has been properly trained on Business Associate's policies and procedures regarding compliance with HIPAA including sanction policies for failure to comply with these policies and procedures.

(f) Business Associate agrees to provide access to Covered Entity of PHI maintained in a Designated Record Set to enable Covered Entity to meet the requirements under 45 C.F.R. § 164.524.
Business Associate agrees to make any amendments to PHI in a Designated Record Set that Covered Entity directs or agrees to pursuant to 45 C.F.R. § 164.526 within the time and manner designated by Covered Entity. In the event that Business Associate receives a request directly from an Individual for a copy of his/her PHI or to amend his/her PHI, Business Associate shall forward such request within five (5) business days after receipt of such request to enable Covered Entity to respond to the Individual’s request.

(g) Business Associate agrees to make its internal practices, books, and records relating to the use and disclosure of PHI received from, or created or received by Business Associate on behalf of, Covered Entity available to the Secretary of Health and Human Services (Secretary), in a time and manner designated by Covered Entity or the Secretary, for purposes of the Secretary determining Covered Entity’s compliance with HIPAA. Additionally, Business Associate shall immediately advise Covered Entity of any inspection request made by regulators.

(h) Business Associate agrees to document disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528. Business Associate agrees to provide Covered Entity with information collected in accordance with this Agreement or the Underlying Agreement to permit Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528.

(i) Compliance with ARRA.

(i) Business Associate will comply with the security requirements referenced in Section 13401 of ARRA, including the requirements of 45 C.F.R. §§ 164.308, 164.310, 164.312, and 164.316.

(ii) Business Associate understands that it is now subject to the same federal penalties (ARRA Section 13401(b)) as Covered Entity for violation of the security requirements referenced therein. Business Associate accepts full responsibility for any penalties incurred as a result of its own breaches or violations of Covered Entity’s PHI.

(iii) Business Associate will, following the discovery of a breach of “unsecured PHI,” as defined in 45 C.F.R § 164.402, notify Covered Entity of such breach within 15 days. The notice shall include the identification of each Individual whose unsecured PHI has been, or is reasonably believed by Business Associate to have been, accessed, acquired, or disclosed during such breach. A breach is discovered as of the first day on which such breach is known to Business Associate or should have been reasonably known to Business Associate.

(iv) Upon discovery of a breach of unsecured PHI by Business Associate, Covered Entity and Business Associate will collaborate to determine which Party is in the best position to provide notification.

(v) In the event that a law enforcement official provides a written statement that a delay is necessary, temporary delay of a breach notification will comply with 45 C.F.R. § 164.412(a).

(v) In the event that a law enforcement official provides an oral statement that a delay is necessary, temporary delay of a breach notification will comply with 45 C.F.R. § 164.412(b).

(vi) Business Associate will maintain documentation of all breach notifications it makes or the application of any exceptions to the definition of breach to demonstrate that nonfiction was not required.

(viii) Business Associate may use and disclose PHI only if such use or disclosure, respectively, is in compliance with each applicable requirement of 45 C.F.R. § 164.504(e) (Uses and disclosures: Organizational requirements: Business associate contracts) and the privacy requirements referenced in Section 13404 of ARRA.

(ix) Business Associate shall provide an accounting of disclosures to Individuals requesting an accounting as required by Section 13405(c) of ARRA.

(x) Business Associate will comply with each of the requirements of ARRA listed in Sections 2(h)(i)-(iv) as and when that requirement becomes effective. Further, Business Associate will comply with any
and all privacy and security regulations issued pursuant to ARRA and applicable to Business Associate as and when those regulations are effective.

(j) Compliance with Red Flags Rule.

(i) Business Associate will perform its activities under this Agreement and Underlying Agreement in accordance with reasonable policies and procedures of Business Associate designed to detect, prevent and mitigate the risks of identity theft, as required of a Service Provider under the Red Flags Rule. Business Associate will promptly report to Covered Entity any specific pattern, practice, or activity that indicates the possible existence of identity theft ("Red Flag Incidents") Business Associate detects as to Covered Accounts and, as appropriate under the Agreement, respond to and mitigating, or assist Covered Entity in responding to and mitigating, such reported Red Flag Incidents.

(ii) Business Associate certifies that that its workforce, as defined by 45 C.F.R. § 160.103 and who uses or discloses Covered Entity’s PHI, has been properly trained on Business Associate’s policies and procedures regarding compliance with the Red Flags Rule.

3. Permitted Uses and Disclosures by Business Associate.

(a) Except as otherwise limited in this Agreement or the Underlying Agreement, Business Associate may use or disclose PHI to perform services to or on behalf of Covered Entity as described in and in compliance with the Underlying Agreement, provided that such use or disclosure would not violate HIPAA if undertaken by Covered Entity.

(b) Except as otherwise limited in this Agreement or the Underlying Agreement, Business Associate may:

(i) Use PHI for the proper management and administration of Business Associate or to carry out the legal responsibilities of Business Associate; and

(ii) Disclose PHI for the proper management and administration of Business Associate, provided that such disclosures are required by law, or Business Associate obtains reasonable assurances from the person to whom the information is disclosed that it will remain confidential and be used or further disclosed only as required by law or for the purpose for which it was disclosed to the person, and the person notifies the Business Associate of any instances of which it is aware in which the confidentiality of the information has been breached.

4. Obligations of Covered Entity.

(a) Covered Entity shall provide Business Associate with any changes in, or revocation of, permission by Individual to use or disclose PHI, if such changes affect Business Associate’s permitted or required uses and disclosures.

(b) Covered Entity shall notify Business Associate of any restriction to the use or disclosure of PHI that Covered Entity has agreed to in accordance with 45 C.F.R. § 164.522, if such restriction affects Business Associate’s permitted or required uses or disclosures.

(c) Covered Entity shall not request Business Associate to use or disclose PHI in any manner that would not be permissible under HIPAA.

5. Term and Termination.

(a) This Agreement shall be effective as of the date that the Underlying Agreement is effective with respect to Covered Entity, and shall terminate when all of the PHI provided by Covered Entity to Business Associate, or created or received by Business Associate on behalf of Covered Entity, is destroyed or returned to Covered Entity, or, if it is infeasible to return or destroy PHI, protections are extended to such information, in accordance with the termination provisions in this Section.

(b) Upon Covered Entity’s knowledge of a material breach by Business Associate, Covered Entity shall provide an opportunity for Business Associate to cure the breach in accordance with the Underlying Agreement. Covered Entity may terminate this Business Associate Agreement ("this Agreement") and the Underlying Agreement between Covered Entity and Business Associate which is
the subject of any material breach of this Agreement by Business Associate if Business Associate does not cure the breach as provided in the Underlying Agreement. If Business Associate has breached a material term of this Agreement and cure is not possible,

Covered Entity may immediately terminate this Agreement. This provision shall be in addition to and shall not limit any rights of termination or obligations set forth in the Underlying Agreement.

(c) If Covered Entity knows of a pattern of activity or practice by Business Associate that constitutes a material breach or violation of this Agreement and the breach or violation continues, and if termination of this Agreement is not feasible, Covered Entity is required by HIPAA to report the breach or violation to the Secretary of Health and Human Services.

(d) **Effect of Termination.**

(i) Except as provided in Section 5(c)(ii), upon termination of this Agreement for any reason, Business Associate shall return or destroy all PHI received from Covered Entity, or created or received by Business Associate on behalf of Covered Entity. Destruction shall include destruction of all copies including backup tapes and other electronic backup media. This provision shall apply to PHI that is in the possession of subcontractors or agents of Business Associate. Except as provided in Section 5(c)(ii), Business Associate shall retain no copies of the PHI.

(ii) In the event that Business Associate determines that returning or destroying the PHI is infeasible, Business Associate shall notify Covered Entity of the conditions that make return or destruction infeasible, extend the protections of this Agreement to such PHI, and limit further uses and disclosures of such PHI to those purposes that make the return or destruction infeasible for so long as Business Associate maintains such PHI.

(iii) Business Associate’s obligation to protect the privacy of PHI is continuous and survives any termination, cancellation, expiration, or other conclusion of this Agreement or the Underlying Agreement.

6. **Indemnification.**

(a) Business Associate agrees to hold harmless Covered Entity, its officers, agents or employees from and against any and all claims, liabilities, demands, damages, losses, costs and expenses, including costs and reasonable attorney’s fees, or claims for injury or damages that are caused by or result from the acts or omissions of Business Associate, its officers, employees, agents and subcontractors with respect to the use or disclosure of Covered Entity’s PHI.

7. **Miscellaneous.**

(a) **Governing Law.** The interpretation of this Agreement and the resolution of any disputes arising under this Agreement are governed solely by the laws of Colorado, exclusive of any of the choice of law provisions of that or any other state. If any action or other proceeding is brought on or in connection with this Agreement, the venue of such action will be exclusively in Colorado having venue over the Underlying Agreement. Each Party consents to the jurisdiction of such courts and waives any objection it may have with respect to venue.

(b) **Notices.** Any and all notices required or permitted under this Agreement will be made in writing (ink-and-paper) and may be sent by United States mail, overnight delivery service, or facsimile transmission and will be deemed to have been received by the applicable Party (i) three (3) business days after the confirmed date of deposit with the United States Postal Service, (ii) the date of delivery if by overnight delivery service, or (iii) one (1) business day after transmission when sent by confirmed facsimile transmission (each a “Notice Date”) to the applicable address / fax number as set forth on the signature pages to this Agreement or such different address / fax number as a Party may designate in a notice provided to the other Party.

(c) **Change in Law.**

The Parties acknowledge that amendments to applicable state or federal law or regulations or a court or regulators’ interpretation of such laws or regulations may necessitate future changes to this
Agreement. In such event, the Parties agree to provide written notice of such conflict to the other Party and to negotiate in good faith toward a written amendment to comply with such changes in the law or regulations or interpretation of the law or regulations.

(d) **Assignment.** Nothing express or implied in this Agreement is intended to confer or assign any rights, remedies, obligations or liabilities upon any person or entity other than Covered Entity and Business Associate and their respective successors and assigns.

(e) **Security Assessments.** Business Associate shall provide Covered Entity, upon its request, with copies of relevant Statement of Auditing Standards (SAS) 70 and copies of recent security assessments or other mutually agreed upon audit procedures. A SAS 70 is an internationally recognized auditing standard developed by the American Institute of Certified Public Accountants (AICPA). A SAS 70 audit or service auditor's examination is widely recognized, because it represents that a service organization has been through an in-depth audit of their control activities, which generally include controls over information technology and related processes.
EXHIBIT D
UCH-MHS
Compliance Policy

Title: Legal: Federal and Colorado False Claims Statutes

Effective Date: 06/10

POLICY

This policy applies to all UCH-MHS Colleagues, including employees, members of the medical staff, contractors, and agents of UCH-MHS as defined in the Compliance Plan.

The purpose of this Policy is to provide information about certain federal and state laws concerning the submission of false and fraudulent claims for payment to the government. These laws play a central role in the government’s efforts to prevent and detect fraud, waste and abuse in federal health care programs.

UCH-MHS must ensure that all Colleagues are educated regarding the federal and state false claims statutes and the role of such laws in preventing and detecting fraud, waste and abuse in federal health care programs.

False Claims Laws
One of the primary purposes of false claims laws is to combat fraud and abuse in government health care programs. False claims laws do this by making it possible for the government to bring civil actions to recover damages and penalties when healthcare providers submit false claims. There is a federal False Claims Act, and there are also Colorado laws that address fraud and abuse in the Colorado Medicaid program.

Federal False Claims Act
Under the federal False Claims Act, any person or entity that knowingly submits a false or fraudulent claim for payment of United States Government funds is liable for significant penalties and fines. The civil fines include a penalty of up to three times the cost of the claim; plus penalties ranging from $5,500 to $11,000 per false claim, and the costs of the civil action against the entity that submitted the false claims. Generally, the federal False Claims Act applies to any federally funded program. The False Claims Act applies, for example, to claims submitted by healthcare providers to Medicare or Medicaid.

One of the unique aspects of the federal False Claims Act is the "qui tam" provision, commonly referred to as the "whistleblower" provision. This allows a private person with knowledge of a false claim to bring a civil action on behalf of the United States Government, to recover the funds paid by the Government as a result of the false claims. Sometimes the United States Government decides to join the qui tam suit. If the suit is ultimately successful, the whistleblower that initially brought the suit may be awarded a percentage of the funds recovered. The court may reduce the whistleblower's share of the proceeds if the court finds that the whistleblower planned and initiated the false claims violation. Further, if the whistleblower is convicted of criminal conduct related to his role in the preparation or submission of the false claims, the whistleblower will be dismissed from the civil action without receiving any portion of the proceeds.

The federal False Claims Act also contains a provision that protects a whistleblower from retaliation by his employer. Retaliation includes any whistleblower that is discharged, demoted,
suspended, threatened, harassed, or discriminated against by his employer for lawful acts in furtherance of a false claims action. If retaliation occurs the whistleblower may bring a legal action against the employer and maybe entitled to reinstatement with the same seniority status, two times the amount of back pay, interest on the back pay, and compensation for any special damages as a result of the discrimination, such as litigation costs and reasonable attorneys’ fees.

Program Fraud Civil Remedies Act of 1986 (PFCRA)
A similar federal law is PFCRA. It provides administrative remedies for knowingly submitting false claims and statements. A false claim or statement includes submitting a claim or making a written statement that is for services that were not provided, or that asserts a material fact that is false, or that omits a material fact. A violation of the PFCRA results in a maximum civil penalty of $5,000 per claim plus an assessment of up to twice the amount of each false or fraudulent claim.

State of Colorado
The Colorado False Claims Act (CO FCA) mirrors many of the provisions of the federal False Claims Act. The actions that trigger civil penalties are similar to those of the federal False Claims Act i.e. knowingly submitting a false or fraudulent claim for payment under the Colorado Medical Assistance Act. However, under the CO FCA, a person or entity may also be liable if he or she accidently submits a false claim to the state, later discovers that the claim is false, and fails to disclose the false claim to the state within a reasonable time after discovery of the false claim. The penalties include a maximum civil fine of three times damages plus $10,000 per claim and the costs of the civil action.

The CO FCA also has a whistleblower provision. Like the federal False Claims Act, the CO FCA includes provisions to prevent employers from retaliating against employees who report their employer’s false claims.

Colorado law also protects healthcare employees who are certified, registered or licensed under certain provisions of Colorado law that make a good faith report or disclosure concerning patient care or safety. Employees who are not certified, registered or licensed under Colorado law would be covered under Federal law and UCH-MHS’s policy prohibiting retaliation. Colorado law also requires an employee to follow the internal reporting procedures of the health care provider before disclosing it to the appropriate government agency. The purpose of this particular requirement is to give the employer a reasonable opportunity to correct the activity, policy or practice.

In addition to the generally applicable Medicaid anti-fraud statute, Colorado has adopted a statute making it unlawful to offer a false instrument to a public employee for recording in a public record. Violations of this statute are criminal offenses and are punishable by imprisonment and significant monetary penalties.

UCH-MHS Policy
It is the policy of UCH-MHS that no Colleague will be punished on the basis that he or she reported what he or she reasonably believed to be an act of wrongdoing or a violation of the federal or state law, UCH-MHS’s Compliance Plan, Code of Conduct or policies and procedures. Furthermore, UCH-MHS is committed to following “whistleblower” protections set forth in the False Claims Act.

A Colleague will be subject to disciplinary action, if UCH-MHS reasonably concludes that the Colleague knowingly fabricated, distorted, exaggerated or minimized the wrongdoing to either injure or protect someone including him or herself.
In determining what, if any, disciplinary action may be taken against a Colleague, UCH-MHS will take into account a Colleague's own complete and truthful admission of wrongdoing, if UCH-MHS did not already know of the wrongdoing or its discovery was not imminent. A Colleague whose report of misconduct contains admissions of personal wrongdoing is not guaranteed protection from disciplinary action. The weight given the self-confession will depend on all the facts known to UCH-MHS at the time that disciplinary decisions are made.

**Reporting Concerns Regarding Fraud, Abuse and False Claims**
UCH-MHS takes issues regarding false claims and fraud and abuse seriously. UCH-MHS encourages all Colleagues to be aware of the laws regarding fraud and abuse and false claims and to identify and resolve any issues immediately. Issues are resolved fastest and most effectively when a member of the leadership team is given prompt notice. UCH-MHS, therefore, encourages its Colleagues to report concerns to their immediate supervisor when appropriate. If the Colleague does not feel the supervisor is the appropriate contact or if the supervisor fails to respond quickly and appropriately to the concern, then the individual with the concern is encouraged to discuss the situation with the next level of leadership, the Chief Operations Officer/Chief Compliance Officer (719) 365-6329, the Director of Compliance (719) 365-2309, or UCH-MHS's Anonymous Integrity Hotline 1-800-403-2511.

Colleagues of UCH-MHS should be aware of related facility policies regarding detection and prevention of health care fraud and abuse. These policies and procedures can be accessed on UCH-MHS Intranet under Corporate Compliance.

**Policies and Procedures for Detecting and Preventing Fraud**
UCH-MHS is committed to conducting business activities in an ethical and forthright manner and within the letter and spirit of all applicable laws and regulations. The UCH System Board of Directors has approved the operation of a Compliance Program. The Compliance Program is designed to promote ethical behavior and compliance with all applicable laws and regulations.

UCH-MHS's Compliance Plan contains the core requirements of a corporate compliance program as set forth in compliance guidance documents issued by the Office of Inspector General of the Department of Health and Human Services. The core requirements are: (1) developing open lines of communication, (2) implementing compliance and practice standards, (3) designating a compliance officer, (4) conducting appropriate training and education, (5) conducting internal monitoring and auditing, (6) responding appropriately to detected offenses and developing corrective action, and (7) enforcing disciplinary standards through well-publicized guidelines.

UCH-MHS will ensure that:
1) All Colleagues, are provided with this policy, within 30 days of commencing the Colleagues’ engagement with UCH-MHS.
2) UCH-MHS’s Code of Conduct, includes a detailed summary of this Policy.
George L. Hertner, M.D., FACEP

Appointments:
Memorial Hospital
University of Colorado Health
Colorado Springs, CO

Department of Emergency Medicine
Chief of Emergency Services
Medical Director Memorial Central ER
Medical Director Memorial North ER
Memorial Health System Multispecialty Committee Chairman
Memorial Health System Medical Executive Committee Chairman
Memorial Health System CPOE Development Committee
Memorial Health System Through-Put Committee

Department of Hyperbaric Medicine
Medical Director

Education:
Residency
Palmetto Richland Memorial Hospital
University of South Carolina
Columbia, South Carolina
Chief Resident 2000-2001

M.D.
University of Nebraska – Medical Center
Omaha, Nebraska
August 1994 – May 1998

B.A., B.S.
University of Nebraska
Kearney, Nebraska
August 1989 – 1994
Cum Laude
Major Biology, Minor Chemistry, Emphasis Spanish

Associations and Activities:
Fellow of the American College of Emergency Medicine
American Board of Emergency Medicine Certification
Undersea and Hyperbaric Medicine Subspecialty Certification
Colorado Medical Society
El Paso County Medical Society
Emergency Medicine Ultrasound Instructor 2000-2008
University of South Carolina Wilderness and Travel Medicine Instructor 2000
EMS Instructor 1998-2009
Medical Support for Denver Museum of Nature and Science Brazil research expedition 2006
Medical Support for Miami Museum of Science research expedition in Brazil 2005
Medical Support for Tour of Hope 2005

Significant Publications and Presentations:
Hertner et al, “Removal of a ton of narcotics from a community by an Emergency Department” In process Fall 2017

Hertner, G et al, “Emergency Department Led Community Opiate Reduction” Accepted for presentation at Vizient Clinical Connections Summit September 2017, Denver, Colorado

Jones, W et al, “Treating Decompression Sickness: Military Flight Simulation Site-Community Hospital Partnership” Accepted for Publication in Military Medicine 182, 2017


Hertner, G, “Utilization of Point of Care Testing to Improve Emergency Medicine Throughput” Presented at the Pan Pacific Emergency Medicine Conference South Korea October 14, 2014


Hertner, G. “Sustainable Healthcare” Selected for Presentation at the Wilderness Medical Society Annual Meeting and Conference, Snowmass, CO July 2009

Hertner, G. “Our Big Patient” Wilderness Medicine, Volume 25(2), pp6-7 2008 non-fiction essay contest winner

Hertner, G. Moderator for the Twelfth Annual Advanced Hyperbaric Symposium in Columbia, South Carolina April 5, 2008


Hertner, G. “Hazardous Marine and Freshwater Life” Presentation for 31st Annual Meeting of the Pacific Chapter of the Undersea and Hyperbaric Medical Society. September 24th, 2005


Hertner, G. “Firework Injuries” Presentation for television in Colorado Springs, July 3, 2004

Hertner, G. “Introduction to Hyperbaric Medicine” Presentation for Diver’s Day In Colorado Springs, Colorado, October 12, 2002


Hertner, G. Moderator for Symposium on Trauma and Critical Care. Colorado Springs, Colorado, September 14, 2002

Hertner, G. “Airway management and Rapid Sequence Intubation” Plains to Peaks Conference, Limon, Colorado, June, 2002

Hertner, G. et al. ESA EMS Public Education Video. February 18, 2002

Hertner, G. “Foreign Body and Piercing Management” Presentation at Palmetto Richland Memorial Hospital. April 2001

Hertner, G. Tree Stand Injuries. Accepted for Presentation for the Summer Conference and Annual Meeting of the Wilderness Medicine Society and Publication. Wilderness and Environmental Medicine: Vol. 13, No. 1, pp. 71–79


Hertner, G. Case Presentation: *Diphyllobothrium latum*. South Carolina Emergency Physicians Interim Communique. April 2000


**Hertner, G.** Extraction and Detection of *Frankia* in Nebraska Soils Using Polymerase Chain Reaction. Presented as Senior Thesis and the University of Nebraska, April 1994

**Other Research:**

Facial Injury from Drone Impact, in process Fall 2017

The impact of artificial reefs in a tropical marine environment under the direction of Dr. T. Ostrander in San Salvador, Bahamas 1993

Glaucoma treatments with animal models under the direction of Dr. G. Zahn at UNMC 1992
Emergency Department

MD Liaison
EMPLOYMENT

EMS, PC

March 2008 – Present
Colorado Springs, CO.

Providing emergency health care to the community of Colorado Springs.

Colorado Army National Guard

October 2008 – Sept 2012
Buckley AFB, Aurora, CO.

Field Surgeon, Attached to the Medical Command. Responsible for monitoring and maintaining the health and welfare of the soldiers in the Colorado National Guard. Deployed from November 2011 to February 2012 with the 193rd MP Battalion as their Battalion Surgeon. Responsible for the health and welfare of the unit as well as Detainees at the Detention Facility in Parwan province, Bagram, Afghanistan.

American Hospital Services Group

July 2007 – March 2008
Ft. Carson, CO.


U.S. Army, 10th Combat Support Hospital

July 2004 - July 2007
Ft. Carson, CO.

Emergency Medicine Physician, Evans Army Community Hospital, Oct. 2006 - July 2007
Provide emergency medical care to Ft. Carson community of 30-40,000 soldiers and their families. Interim EMS Director for the Fort Carson Fire Department and Evans Ambulance section. Responsibilities include ongoing medical training for the RN's and Medics assigned to the Emergency Department.

Baghdad, Iraq

One of four Emergency Medicine Physicians leading teams for resuscitation and critical care of American and Iraqi soldiers, foreign and local civilians and international contractors at the central Baghdad combat hospital. Responsibilities included: management of treatment as required, coordination of care provided by several dozen medics and nurses, start-up and ongoing training for unit staff; and coordination of emergency medical evacuation for critically injured neuro-trauma patients. Participated in dozens of mass casualty events. Trained Iraqi physicians, through classroom and bedside teaching, in principles and practice of advanced trauma life support and advanced cardiac life support. Taught American, British and Iraqi medics techniques for management and treatment of critically ill and injured patients. On numerous occasions, operated as the sole physician for multiple, critically injured patients. Fostered maintenance of highly effective medical care despite the difficulties of operating in an active war zone.

Ft. Carson, CO.

Emergency Medicine Physician, Evans Army Community Hospital, July 2004 – Sept. 2005
Provided emergency medical care to the Fort Carson community. Coordinated the care provided by 20 nurses and medics in the Emergency Department. EMS director of the Fort Carson Fire Department and the Evans Ambulance section.
EM Physician, Arkansas Valley Regional Medical Center. Nov. 2004 – Sept. 2005 Worked several shifts at rural emergency department. Was only EM physician on duty for 24 hour shift, providing emergency care, stabilization and coordinating transfers to the closest level II facility.

EDUCATION
August 1997 - May 2001 Medicine MD Virginia Commonwealth University/MCV
August 1994 - May 1996 Pre-Med Post Baccalaureate Mills College, Oakland, CA
October 1986 - March 1991 Economics BA University of California, Santa Cruz, CA
November 1988 - May 1989 Economics Junior Year University of Bordeaux, France

INTERNERSHIP AND RESIDENCY
June 2002 - July 2004 Emergency Medicine Residency Virginia Commonwealth University/MCV
June 2001 - May 2002 Emergency Medicine Internship Virginia Commonwealth University/MCV

MILITARY SERVICE
July 2001 - July 2004 Captain US Army Reserves
June 1997 - July 2001 2nd Lieutenant USAR Health Professional Scholarship Recipient

MILITARY AWARDS
Bronze Star
Army Commendation Medal
Army Achievement Medal

LICENSURE AND CERTIFICATION
2016    Passed Continuing Certification Exam, Emergency Medicine Boards
2007    Completed Emergency Medicine Boards
May 2003 - June 2006 Medicine & Surgery, Commonwealth of Virginia
May 2004 – Present Physician, Colorado
ATLS, ATLS

PROFESSIONAL SOCIETIES
American College of Emergency Physicians
American Academy of Emergency Medicine

TEACHING EXPERIENCE
Clinical Preceptor for Undergraduate Medical Education for UHealth/RVU
Clinical Educator and Medical Director for CSFD/AMR and Multiple EMS Agencies
Participated in the training of Afghan Army Physicians and Medics in Bagram Afghanistan 2011-2012
Taught ATLS skills to Iraqi Physicians in Baghdad, Iraq 2005-2006
ACLS/ATLS/PALS Instructor 2001 to 2005
Student Instructor, Foundations of Clinical Medicine Course VCU/MCV, 2000/2001

ADMINISTRATIVE EXPERIENCE
Chief of Staff - Elect - UHealth/Memorial Hospital, Colorado Springs
Medical Director - Limon Ambulance Service, Big Sandy Ambulance Service, Kit Carson County, Cheyenne County
Deputy Medical Director - Colorado Springs Fire Department, AMR Colorado Springs
Co-Medical Director - Plains-to-Peak RETAC
Appointee - SEMTAC
Board Member, Vice President - EMS, PC
Curriculum Representative – Virginia Commonwealth University/MCV 1997-1999: Student liaison for curriculum review and development. Responsible for continued improvement and quality assurance for all of the courses during the first two years of the medical school curriculum.

MEMBERSHIP/INTERESTS
American College of Emergency Physicians, American Academy of Emergency Medicine
Rock climbing, Mountain biking, Travel, Speaking French

References Available on Request
<table>
<thead>
<tr>
<th>INITIAL ASSESSMENT</th>
<th>TIME: ____________</th>
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</table>

- [ ] Regular  [ ] Tachypnea  [ ] Trachea midline
- [ ] Bradypnea  [ ] Dyspnea  [ ] Shallow  [ ] Labored

**Breath sounds:**
- R _____ Clear  Coarse  Diminished  Absent
- L _____ Clear  Coarse  Diminished  Absent

**Other:**

**Apical pulse:**
- [ ] normal  [ ] muffled
- [ ] normal cap. refill
- [ ] delayed cap. refill

**Peripheral pulses:**

**Pupils:**

- Pupil equal reactive fixed L __ R __ Time: ____________
- Recheck: equal reactive fixed L __ R __ Time: ____________

**Color:**
- [ ] pink  [ ] pale  [ ] mottled  [ ] cyanotic
- [ ] warm  [ ] hot  [ ] cool
- [ ] cold  [ ] dry  [ ] clammy  [ ] diaphoretic

**Temperature:**

**Bowel sounds:**
- [ ] Yes  [ ] No
- [ ] nausea  [ ] Vomiting

**Rectal tone:**
- [ ] present  [ ] absent  [ ] NA

**Other:**
- [ ] incontinent

**Pelvis:**
- [ ] Stable  [ ] Unstable

**PROCEDURES**

- [ ] O2 at _______ L/min. via ________

**Intubated:**
- _______ time
- _______ size  [ ] oral  [ ] nasal

**End tidal CO2:**
- [ ] Pos  [ ] Neg

**Done by:**

**Chest tube:**
- _______ time _______ site _______ size
- _______ initial output _______ total output

**Done by:**

**Central line:**
- _______ time _______ site _______ type _______ size

**Done by:**

**Thoracotomy:**
- _______ time _______ site

**Done by:**

**Grasps:**
- [ ] strong  [ ] weak

**Sensation:**
- [ ] normal  [ ] decreased
- [ ] unable to evaluate

**Splints applied:**
- RUE _______ RLE ________
- LUE _______ LLE ________

**NG/OG Ordered:**
- [ ] Yes  [ ] No
- _______ Time _______ Site/Size _______ output

**Done by:**

**Foley:**
- assessment prior to insertion:
  - Blood @ meatus?  [ ] Yes  [ ] No
  - Rectal/Prostate Exam done by: ________

**Findings:**
- [ ] Time _______ Size _______

**Color:**

**Done by:**

**DipStix**
- Pos  Trace  Neg

**FAST:**
- _______ time  [ ] Pos  [ ] Neg

**DPL:**
- _______ time _______ color  [ ] Pos  [ ] Neg

**Mobility:**
- RUE _______ RLE ________
- LUE _______ LLE ________

---

**A = abrasion**  **AP = amputation**  **OF = open fx**  **CF = closed fx**  **L = laceration**  **PW = puncture wound**

**C = contusion**  **D = deformity**  **P = pain**  **S = stab wound**  **O = other**  **G = GSW**
<table>
<thead>
<tr>
<th>TIME</th>
<th>B/P</th>
<th>P</th>
<th>EKG</th>
<th>R</th>
<th>O₂</th>
<th>FLOW</th>
<th>P.</th>
<th>OX.</th>
<th>PAIN 1-10</th>
<th>T/</th>
<th>GCS</th>
<th>MEDICATIONS DOSE/ROUTE</th>
<th>NARRATIVE</th>
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Nurse Signature ___________________________ Initial __________ Nurse Signature ___________________________ Initial __________
SBIRT screening (Screening, Brief Intervention, Referral to Treatment)—to be completed on ALL TRAUMA patients ages 12 and over (Non-Admits) by primary nurse before discharge or transfer to another ED care unit:

- Pt positive on B.A.L. (serum ETCH or Breathalyzer) N/A no YES (pos screen)
- Pt is positive on Tox screen N/A no YES (pos screen)

FOR AGES 12 - 17 yrs:

**** During past 12 months: have you drank any alcohol (more than a few sips), smoked marijuana, or used anything else to get high?

no YES (pos screen)

FOR ADULTS ≥ 18 yrs:

- How many drinks do you have per week?
  (positive = > 7 for all women and men over 65 -or- > 14 for men ≤ 65)

- When was the last time you had 4 or more (for all women and men >65 ) or 5 or more (men < 65) drinks in one day?
  (positive = with in past 3 months)

- In the past year, have you used or experimented with an illegal drug or a prescription drug for nonmedical reasons?
  (positive = “YES”)

YES (pos screen)
YES (pos screen)
YES (pos screen)

*SBIRT CONSULT INDICATED???
(circle) No YES pt unable pt refuses

Explain why:
INSTRUCTIONS – if patient has positive screen – call x 5-8450 and notify for SBIRT assessment.
(If no answer – call Charge RN x 5-2410). Must be completed prior to discharge.

FIELD TRIAL (updated 1/1/2013)
## CLOTHING / VALUABLES LIST

<table>
<thead>
<tr>
<th>Item</th>
<th>With Patient</th>
<th>With Family</th>
<th>With Law Agency</th>
<th>Destroyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrived without clothing</td>
<td>□ Yes □ No</td>
<td></td>
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<tr>
<td>Clothes:</td>
<td></td>
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<tr>
<td>Jewelry:</td>
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<tr>
<td>Money</td>
<td>□ Yes □ No</td>
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<tr>
<td>_______ Amount</td>
<td></td>
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<tr>
<td>Dentures (upper)</td>
<td>□ Yes □ No</td>
<td>(lower) □ Yes □ No</td>
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<tr>
<td>Glasses</td>
<td>□ Yes □ No</td>
<td></td>
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<tr>
<td>Wallet</td>
<td>□ Yes □ No</td>
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<tr>
<td>Purse</td>
<td>□ Yes □ No</td>
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<tr>
<td>Valuables to safe</td>
<td>□ Yes □ No</td>
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</table>

## DISCHARGE SUMMARY:


### SPINAL STATUS:

- C-spine x-rays cleared: □ Yes □ No By ___________
- T-spine x-rays cleared: □ Yes □ No By ___________
- L-spine x-rays cleared: □ Yes □ No By ___________
- C-spine cleared by physical exam: □ Yes □ No By ___________
- TL-spine cleared by physical exam: □ Yes □ No By ___________

**MAINTAIN FOLLOWING SPINAL PRECAUTIONS:** (see physician orders)

- Time off backboard: ___________
- C Collar Logroll Only Roto Rest Bed Back Board Bedrest/Flat

### DISCHARGE INSTRUCTIONS GIVEN TO:

- □ Patient □ Family ___________
- □ Other (specify) ___________
- □ After Care Instructions/ Food Drug Interactions Given ___________
- □ Verbalized Understanding □ Repeated ___________

### DISCHARGED:

- □ Ambulatory □ WC □ Gurney ___________
- □ Carried □ Crutches ___________

### ADMISSIONS:

- □ Physician Orders to Unit ___________
- □ Old Chart to Unit ___________

**REPORT CALLED TO:** ___________

- Unit ___________ Time ___________

Patient Departed ED ___________

---

**Memorial Hospital**

**UNIVERSITY OF COLORADO HEALTH**

**1400 E. BOULDER ST.**
**COLORADO SPRINGS, CO 80909**

**TRAUMA RECORD**

1250459 4/2006
PTA FLUIDS:

<table>
<thead>
<tr>
<th>TIME</th>
<th>SITE</th>
<th>AMT</th>
<th>IV FLUID</th>
<th>BLOOD PRODUCT</th>
<th>WARM</th>
<th>Y</th>
<th>N</th>
<th>RATE</th>
<th>D/C TIME</th>
<th>DISCARDED</th>
<th>AMOUNT INFUSED</th>
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<tbody>
<tr>
<td>PTA</td>
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**MECHANISM OF INJURY**

MVA  Driver/Passenger  Air Bag  Child Seat
Restraint:  Unk  /  No  /  Lap  /  Shoulder
Est Speed:  Ejection  ft.  Extrication  min
Impact:  Front  /  Rear Side  Rollover  Extensive damage
Motorcycle  /  Bicycle  /  ATV  /  Other  Helmet:  Y  /  N
Other Gear:  Y  /  N
Pedestrian  Thrown:  Y  /  N  ft.  Fall  ft.
Blunt Assault  Amputation  Crush
GSW/Stabbing
Other Details

**MODE OF ARRIVAL**

AS/AIR agency name:
Car  /  POV  /  Ambulatory  Police

**TREATMENT PTA**

Airway/O2  EKG:
Thoracotomy  /  Cricoth  Results:
Backboard  /  C-collar  /  Tape  /  Straps  /  Blocks  Splints:
Other:

**Meds**

PMHX

**Allergies**

LMP

**TETANUS STICKER**

Tetanus status:  <5yrs  >5 yrs
Skin intact?  □ Yes  □ No
Booster site:
Ped immunizations:
□ Current  □ Not current

**TRAUMA TEAM: (FULL NAMES)**

RECORER

ED  C  H
TS  C  H
PTS  C  H
NS  C  H
Ortho  C  H
Other  C  H
OR:  C  H
Primary/Unit
Secondary/Unit
ED Tech
R.T.

**FAMILY NOTIFICATION:**

Family Member Notified:
Dr Blood:  Ordered by Dr.
Radiology:  Time XR start
EKG:
CT:
Time to CT  OR: Time to OR
CT Ordered:
□ CT Head  □ CT A/P
□ CT Other
Oral Contrast  □ Y  □ N
Other

**Labs:**  Time drawn

□ O+  □ O-
Jonathan Carlyle Rowell

Address/Contact

Education

08/1999-05/2003  Medical University of South Carolina College of Medicine
Charleston, South Carolina
Doctor of Medicine, 07/20003

08/1993-05/1997  Wake Forest University
Winston Salem, North Carolina
Biology, Bachelor of Science, 05/1997

Residency/Fellowship

08/2008- 08/2009  Pediatric Anesthesiology Fellowship
Seattle Children’s Hospital
Seattle, WA

07/2003- 07/2008  Anesthesiology Residency
University of Washington
Seattle, WA

07/2003- 06/2005 General Surgery Internship
ETSU Quillen College of Medicine
Johnson City, Tennessee

Work Experience

04/2017-present  University of Colorado Health Medical Group
Anesthesiologist

Partner in multi-specialty anesthesia group providing full scope of anesthesia services for Memorial Health System

  ▪ Board of Directors 2012-2017
  ▪ Medical Director for Pediatric Anesthesia 2014-2016
  ▪ Pediatric Trauma Committee 2012-2017
Publications

Anesthesia in a 12 year old boy with somatic overgrowth secondary to pericentric inversion of chromosome 12. *Journal of Clinical Anesthesia* 2013, March; 25(2) 135-137


Anesthetic Management of an infant with thanataphoric dysplasia for suboccipital decompression *Pediatric Anesthesia* 2011, 21(1) 92-94


Comparison of the On-Q Painbuster Post-op Pain Relief System to a thoracic epidural for control of post-operative thoracotomy pain in a child. *Pediatric Anesthesia*, 2009 Oct; 19(10) 1025-1026

Examinations

10/2012 Pediatric Anesthesia Subspecialty Certification

3/2006 USMLE Step3

07/2003 USMLE Step2

07/2001 USMLE Step1

State Licenses

08/2009-present Colorado, Unlimited

Hobbies and Interests

Learning/teaching, medical missions, outdoor activities, biographies
SECTION CHIEF PERSONAL SERVICES AGREEMENT

This Section Chief Personal Services Agreement (the "Agreement") is made and entered into effective as of the 1st day of April, 2015, (the "Effective Date") by and between UCH-MHS, a Colorado nonprofit corporation, and Brian Leininger, M.D. (the "Section Chief").

RECITALS

A. UCH-MHS is a healthcare system that provides a full continuum of healthcare delivery services through its network of professional service providers. UCH-MHS operates two licensed hospitals, Memorial Hospital Central and Memorial Hospital North (each a "UCH-MHS Hospital") as well as ancillary care facilities (the "UCH-MHS Hospitals and other facilities collectively referred to as "UCH-MHS").

B. Section Chief is licensed to practice medicine in the State of Colorado, is a member of the Medical Staff of UCH-MHS, is board certified in Critical Care Surgery and General Surgery (the "Specialty"), and possesses the skills, knowledge and training to serve as Medical Staff Section Chief for General Surgery (the "Services") at UCH-MHS.

C. UCH-MHS desires to contract with Section Chief to provide the Services, and Section Chief desires to enter into an agreement with UCH-MHS to provide such Services.

NOW, THEREFORE, in consideration of the foregoing recitals and the mutual agreements set forth herein, the parties agree as follows:

ARTICLE 1
TERM OF ENGAGEMENT

1.1 Term. UCH-MHS hereby engages Section Chief to provide the Services beginning on the Effective Date and expiring on March 31, 2016, ("Term") unless earlier terminated pursuant to ARTICLE 4. This Agreement, however, will automatically terminate if: (a) Section Chief is no longer qualified to serve as a Section Chief or as the General Surgery Section Chief, in accordance with UCH-MHS's Medical Staff Bylaws, Rules and Regulations, as amended from time to time, which have been provided to Section Chief and are incorporated herein by reference; (b) Section Chief resigns or is removed from his or her office or leadership position by the Medical Staff, in accordance with the Medical Staff Bylaws, Rules and Regulations; or (c) Section Chief's term of office or leadership position otherwise terminates or expires in accordance with the Medical Staff Bylaws, Rules and Regulations.
ARTICLE 2
SECTION CHIEF RESPONSIBILITIES

2.1 Section Chief Responsibilities. Beginning on the Effective Date and continuing throughout the Term of this Agreement, Section Chief will provide Services as Section Chief of General Surgery at UCH-MHS, which shall include such Services as more fully described in Exhibit A attached to this Agreement and incorporated by reference. In such capacity, Section Chief will assume and discharge all responsibility for the medical direction and medical management of General Surgery at UCH-MHS (the “Program”).

2.2 Coverage. Section Chief will devote such time and attention as is necessary to fulfill the duties and responsibilities of Section Chief required by this Agreement. Section Chief will not be required to provide services exclusively to UCH-MHS.

2.3 UCH-MHS Medical Staff Membership. Beginning on the Effective Date and continuing throughout the Term of this Agreement, Section Chief will be a member of the UCH-MHS medical staff, and must maintain full and unrestricted clinical privileges at UCH-MHS customary for the Specialty. Section Chief’s obligations and duties under this Agreement are in addition to those duties applicable to Section Chief as a member of the UCH-MHS medical staff. Section Chief will not bill UCH-MHS for time associated with other medical staff responsibilities, it being understood that compensation under this Agreement is solely for documented services rendered with respect to the Program.

2.4 Participation. Section Chief must seek, obtain and maintain the right to participate in Medicare, Medicaid, managed care plans and other third-party reimbursement agreements as may be reasonably requested by UCH-MHS.

2.5 External Reviews. Section Chief shall cooperate with any corporate or regulatory compliance program and accreditation/certification efforts now or hereafter instituted by UCH-MHS.

2.6 Billing. Section Chief may not charge patients or third-party payor for Services rendered as Section Chief pursuant to this Agreement, it being understood that the Services rendered as Section Chief of the Program are not direct patient professional services and are not anticipated to be billed by Section Chief to patient or any third party payor.

2.7 Contract Evaluation. On an annual basis, the Chief Medical Officer or his or her designee, will evaluate Section Chief’s performance hereunder in accordance with duties set forth in Exhibit A.

2.8 Non-Exclusion. Section Chief represents and warrants that Section Chief is not currently, and at no time has he or she been excluded from participation in any federally funded health care program, including Medicare and Medicaid. Section Chief must notify UCH-MHS within three (3) days following the date upon which Section Chief knows or is in receipt of information that would provide Section Chief or another reasonably prudent person with knowledge of any threatened, proposed, or actual exclusion of Section Chief from any federal health care program. Section Chief will indemnify UCH-MHS against all actions, claims, demands and liabilities, and against all loss, damage, costs and expenses, including reasonable
attorneys' fees, arising directly or indirectly, out of any violation of this Section 2.8 by Section Chief, or due to the exclusion of Section Chief from a federally funded health care program.

2.9 **Insurance.** Section Chief is covered under UCH-MHS's Directors and Officers insurance policy providing coverage for the Services.

2.10 **Standards.** Section Chief will provide Services under this Agreement in compliance with all applicable federal and state statutes, regulations, rules and standards, including the Medicare Conditions of Participation applicable to UCH-MHS and/or Section Chief. Section Chief will provide Services under this Agreement in compliance with all applicable requirements of The Joint Commission, as well as all policies, procedures, Medical Staff Bylaws, Rules and Regulations of UCH-MHS, as may be amended from time to time.

2.11 **Records and Reports.**

2.11.1 **Time Record.** Section Chief shall, by the fifteenth (15th) day of each calendar month, submit a time record to UCH-MHS for the previous calendar month on the form attached as Exhibit B, itemizing the Services performed by Section Chief under this Agreement, consistent with those required under Exhibit A. The time record for each month will be maintained contemporaneously with Section Chief's provision of Services, and must state the Services provided with reasonable specificity.

2.11.2 **Other Records.** In addition to the time record described in Section 2.11.1, Section Chief must maintain and furnish to UCH-MHS other records or reports that document the Services performed by Section Chief under this Agreement and are required by applicable law or are reasonably requested by UCH-MHS.

**ARTICLE 3**

**UCH-MHS RESPONSIBILITIES**

3.1 **Compensation for Section Chief Services.** In consideration of the Services to be provided by Section Chief to UCH-MHS under this Agreement and as specified in the Medical Staff

Section Chief's completed monthly time records, attached and incorporated herein as Exhibit B, for the then-preceding calendar quarter. Section Chief acknowledges and agrees that the time reflected on Exhibit B shall not include any time during which Section Chief was otherwise on-call or performing other duties at UCH-MHS, whether or not UCH-MHS compensates Section Chief for such other duties, and shall reflect only time spent exclusively in the performance of Section Chief Services.

3.2 **Fair Market Value.** The compensation described in this Agreement is consistent with the fair market value of the Services arrived at through arm's-length negotiations between the parties. Payments are not intended to relate to and do not, in fact, take into account the volume or value of any referrals or business otherwise generated for or with respect to UCH-MHS, or between the parties, for which payment may be made in whole or in part under Medicare or any federal or state health care program or under any other third party payer program.
ARTICLE 4
TERMINATION

4.1 **Termination by UCH-MHS.** UCH-MHS may terminate this Agreement as follows:

4.1.1 Immediately upon the death of Section Chief or disability of Section Chief that renders him or her unable to perform the obligations under this Agreement.

4.1.2 Immediately, upon written notice to Section Chief, if:

(a) Section Chief's medical staff appointment or privileges at UCH-MHS or any UCH-MHS Hospital for which Section Chief provides Services under this Agreement are terminated, suspended, restricted, or not renewed;

(b) Section Chief's license to practice medicine in any state is revoked, suspended, restricted, or expires;

(c) Section Chief is convicted of or enters a nolo contendere plea to any crime punishable as a felony, or any crime punishable as a misdemeanor that relates to violence, sexual misconduct, child abuse, patient care, controlled substances, or involving moral turpitude or immoral conduct as determined by UCH-MHS;

(d) Section Chief is excluded from any federal or state health care program (e.g., Medicare or Medicaid);

(e) Section Chief becomes uninsurable under the liability insurance provided pursuant to Section 2.9 above; or,

(f) The Program ceases operations for any reason.

4.1.3 At any time, if Section Chief materially breaches any of the terms of this Agreement, including, but not limited to, Section Chief's failure to comply with applicable federal and/or state statutes, regulations, rules and standards, the requirements of The Joint Commission, or any policies, procedures, Medical Staff Bylaws, Rules and Regulations of UCH-MHS, as amended from time to time, which have been provided to Section Chief and are incorporated by reference; but only if such breach is not cured by Section Chief within **fifteen (15) days** of UCH-MHS's written notice to Section Chief. Any notice regarding a breach of this Agreement must specifically describe the nature of the breach.

4.1.4 At any time, with or without cause, upon thirty (30) days' prior written notice to Section Chief that UCH-MHS wishes to terminate this Agreement, or immediately upon payment in lieu of notice based upon Section Chief's average monthly compensation under this Agreement during the previous twelve months prorated for thirty days minus the amount of notice given (or if this Agreement has been in effect for less than twelve months, then upon payment of the average monthly compensation for the period served, similarly prorated).

4.1.5 Immediately, effective December 31, 2015, if Physician is not elected by the Medical Staff to the position of General Surgery Section Chief for a two year term beginning January 1, 2016.
4.2 **Termination by Section Chief.** Section Chief may terminate this Agreement as follows:

4.2.1 At any time if UCH-MHS materially breaches any of the terms of this Agreement, but only if such breach is not cured by UCH-MHS within **fifteen (15) days** of Section Chief’s written notice to UCH-MHS. Any notice regarding a breach of this Agreement must describe the breach in detail.

4.2.2 At any time, with or without cause, upon thirty (30) days' prior written notice to UCH-MHS that Section Chief wishes to terminate this Agreement.

4.3 **Termination by Mutual Agreement.** This Agreement may be terminated at any time by mutual written agreement of the parties.

4.4 **Continuing Obligation after Termination.** This Agreement imposes certain duties upon Section Chief that may continue after termination of this Agreement (e.g., the duty to complete and sign records of Services performed). Regardless of the reason for or manner of termination, Section Chief must fulfill continuing duties that apply to Section Chief.

4.5 **Termination During First Year of Agreement.** If this Agreement is terminated for any reason within one (1) year of the Effective Date, then UCH-MHS and Section Chief will not enter into any agreement with each other for services substantially similar to the Services covered under this Agreement until the expiration of one (1) year from the Effective Date.

**ARTICLE 5**

**REGULATORY REQUIREMENTS**

5.1 **Access to Records.** For four (4) years following any Services furnished to UCH-MHS under this Agreement, Section Chief must make available, upon written request from the Secretary of the Department of Health and Human Services, and upon request from the Comptroller General of the United States, or any of their duly authorized representatives, this Agreement and all books, documents, and records of Section Chief that are necessary to verify the nature and extent of such costs related to the Services provided under this Agreement.

Services or the Comptroller General may have access to the subcontract and the subcontractor’s books, documents, and records necessary to verify the costs of the subcontract for a period of four (4) years after the Services have been furnished.

5.2 **UCH-MHS’s Proprietary Information, HIPAA, Work Product.**

5.2.1 **Definition of “Confidential Information.”** Section Chief acknowledges that during the Term of this Agreement Section Chief shall have access to and shall acquire "Confidential Information" relating to the operations of UCH-MHS and its affiliates, and other proprietary information of UCH-MHS, including, but not limited to, (a) any information pertaining to the business of UCH-MHS or any parent, subsidiary, or affiliate of UCH-MHS that is not readily available to the public domain; (b) any information or data pertaining to patients at UCH-MHS or any UCH-MHS-operated facility, their identity, medical care and treatment and/or test results or any other
information protected under applicable state or federal law, including the Health Insurance Portability and Accountability Act and regulations promulgated thereunder ("HIPAA"); and (c) any information or data related to quality improvement, or peer review activities. "Confidential Information” does not include information that: (i) is or becomes publicly available through no fault of Section Chief; (ii) is already in the possession of Section Chief prior to the discussions with UCH-MHS that resulted in this Agreement; or, (iii) is disclosed to Section Chief by a third party who is under no obligation of confidence to UCH-MHS. Section Chief agrees to not use or disclose Confidential Information for any reason other than to carry out the Services under this Agreement without the prior written consent of UCH-MHS.

5.2.2 **Patient Information.** UCH-MHS has engaged Section Chief to carry out services that may include the use and disclosure of Protected Health Information (as defined in Section 164.501 of the Final HIPAA Privacy Rules, 45 C.F.R. §164.501) received from UCH-MHS. All parties agree to abide by the laws and regulations set forth under HIPAA and relevant state statutes regarding patient information.

5.2.3 **Ownership of Work Product.** All materials and any ideas prepared or developed by Section Chief while performing Services under this Agreement, including without limitation, any research results, techniques, inventions, discoveries, improvements, practice guidelines, care paths, policies and procedures, protocols and other decision-making tools ("Work Product") must be promptly disclosed and furnished to UCH-MHS. All right, title and interest in the Work Product vests in UCH-MHS and is deemed to be a work made for hire, and to the extent it may not be considered a work made for hire, Section Chief assigns to UCH-MHS all right, title, and interest in the Work Product, including all copyrights, patents and applications therefore.

5.2.4 **No Rights or Privileges in Confidential Information or Work Product; Irreparable Harm.** Section Chief does not, by virtue of this Agreement, obtain any rights or privileges to any Confidential Information or Work Product, all of which belongs to UCH-MHS, and are valuable, special and unique assets of UCH-MHS's business. Upon termination of this Agreement for any reason, Section Chief must promptly deliver to UCH-MHS all Confidential Information and Work Product, including any copies thereof, in his or her possession and control. Section Chief acknowledges that UCH-MHS would suffer great loss and irreparable harm from the disclosure of Confidential Information or Work Product in violation of the terms of this Article and, in the event of Section Chief's breach or threatened breach of this Article, and without limiting UCH-MHS's other remedies, UCH-MHS will be entitled to an injunction restraining any breach without showing or proving any actual damages sustained or likely to be sustained.

5.2.5 **Survival.** Notwithstanding anything in this Agreement to the contrary, the provisions of this Section 5.2 will survive termination of this Agreement.

5.3 **Immunity from Liability under Colorado Law.** To the extent the Services provided by Section Chief under this Agreement include peer review and quality improvement activities, such activities are intended to be conducted in a manner that avails Section Chief, as a Section Chief, of the protections and immunity from liability granted to peer
review activities under the Colorado Professional Review Act, C.R.S. §12-36.5-104, *et seq.*, and such quality management program activities under C.R.S. § 25-3-109.

5.4 **Disclosure of Criminal History.** Section Chief certifies that he or she has not been convicted of a crime or petty misdemeanor, in the past ten (10) years, involving dishonesty, breach of trust, or violence to others.

5.5 **False Claims Liability, Anti-Retaliation Protections, and Detecting and Responding to Fraud, Waste and Abuse.** Section Chief acknowledges that he or she has read the policy of UCH-MHS to provide health services in a manner that complies with applicable federal and state laws and that meets the high standards of business and professional ethics. Section Chief agrees to comply with the policy in accordance with Section 6032 of the Deficit Reduction Act of 2005. A copy of the policy is attached as Exhibit C.

**ARTICLE 6**

**MISCELLANEOUS**

6.1 **No Referrals.** Nothing contained in this Agreement or any other agreement between Section Chief and UCH-MHS will obligate either party to refer patients to the other party, its affiliated providers or facilities.

6.2 **Assignment and Binding Effect.** Section Chief may not assign Section Chief’s rights or obligations under this Agreement. UCH-MHS may not assign its rights and obligations under this Agreement except to any entity which it controls, is controlled by, or which is under common control with UCH-MHS or any successor organization. Notwithstanding the termination, expiration, or Non-Renewal of this Agreement, the parties must carry out any provisions of this Agreement that contemplate performance subsequent to termination, expiration, or Non-Renewal.

6.3 **Amendments.** No amendments to this Agreement will be binding unless in writing and signed by both parties.

6.4 **Applicable Law.** This Agreement will be construed in accordance with the laws of the State of Colorado. The parties expressly consent to exclusive venue and jurisdiction for any disputes under this Agreement in the District Court of El Paso County, Colorado, and if necessary for exclusive federal questions, the United States District Court for the District of Colorado.

6.5 **Legal Requirements.** UCH-MHS's obligations under this Agreement are contingent upon such actions being permissible under applicable federal, state, or local law or regulatory requirements.

6.6 **Headings.** The paragraph headings used in this Agreement are included solely for convenience and will not affect, or be used in connection with, the interpretation of this Agreement.

6.7 **Notices.** All notices permitted or required to be given under this Agreement must be in writing and will be considered sufficiently made or given on the date of mailing if sent to the other party by certified, United States mail, addressed to it at its address set forth
below, or to such other address as it will designate by written notice similarly given, to the other party:

If to UCH-MHS:  Chief Medical Officer  
UCH-MHS  
1400 E. Boulder Street  
Colorado Springs, CO 80909  

Legal Department  
UCH-MHS  
1400 E. Boulder Street  
Colorado Springs, CO 80909  

If to Section Chief:  Brian Leininger, M.D.

6.8 **Waiver.** The failure of either party to insist in any one or more instances upon the performance of the terms, covenants, or conditions of this Agreement and to exercise any rights hereunder will not be construed as a waiver or relinquishment of future performance of any such term, covenant, or condition or the future exercise of such right. The obligations of the other party with respect to such future performance will continue in full force and effect.

6.9 **Severability.** If a court of competent jurisdiction holds any provision of this Agreement invalid or unenforceable, the remaining provisions will nonetheless be enforceable. Further, any provision of this Agreement that a court determines is overbroad as written will be deemed amended to the extent necessary to make the provision enforceable according to applicable law. The amended provision will be enforced as amended.

6.10 **Entire Agreement.** This Agreement, together with its Exhibits, constitutes the parties' entire agreement with respect to the subject matter addressed, and supersedes any and all prior agreements, understandings, promises, and representations made by either party to the other concerning the subject matter and the applicable terms of this Agreement.

6.11 **No Third-Party Rights.** Nothing in this Agreement is intended to confer any rights or remedies under or by reason of this Agreement on any persons other than the parties to it and their respective successors and assigns.

6.12 **General Interpretation: Ambiguities.** The parties have read and understand this Agreement and its legal effect, and each has had a reasonable opportunity to obtain independent legal counsel for advice and representation in connection with this Agreement. The terms of this Agreement have been negotiated by UCH-MHS and Section Chief and no rule of strict construction may be applied to either party.

6.13 **Counterparts.** This Agreement may be executed in two or more counterparts.
preserve a superior position with respect to other creditors, or to apply for interim or equitable relief.

IN WITNESS WHEREOF, the parties have entered into this Agreement as of the Effective Date.

UCH-MHS

[Signature]
George Hayes
President/Chief Executive Officer
Date: 4/7/15

SECTION CHIEF

[Signature]
Brian Leininger, M.D.
Date: 4/1/15
Brian Edward Leininger MD, FACS

Clinical Practice

- July 2003 – July 2007  Wilford Hall Medical Center  Lackland AFB TX
  Attending General / Trauma Surgeon / Director of General Surgery Clinics
- Jan 2005 – May 2005  332nd Air Expeditionary Medical Group  Balad Iraq
  Deployed Trauma Surgeon
- Sep 2006 – Jan 2007  447th Air Expeditionary Medical Squadron  Baghdad Iraq
  Director of Trauma Services / Chief of Surgery / Chief of Professional Staff
- July 2008 – Present  Memorial Hospital / UC Health  Colorado Springs, CO
  Director: Surgical Critical Care Service, Attending General / Trauma Surgeon

Education

- 1991-1994  University of Missouri  Columbia MO
  Bachelor of Science: Biochemistry  Magna Cum Laude, Honors Scholar
- 1994-1998  University of Missouri  Columbia MO
  Doctor of Medicine  Summa Cum Laude
- 1998-1999  Phoenix Integrated Surgical Residency  Phoenix AZ
  Internship, General Surgery
- 1999-2003  Phoenix Integrated Surgical Residency  Phoenix AZ
  Residency, General Surgery
- 2007-2008  University of Cincinnati  Cincinnati OH
  Fellowship, Surgical Critical Care and Trauma Surgery

Appointments

- Assistant Professor of Surgery  Jul 2003 – Jul 2007
  University of Texas Health Sciences Center at San Antonio
- Clinical Instructor, Trauma Surgery and Surgical Critical Care  Jul 2007 -- Jun 2008
  University of Cincinnati School of Medicine
- Clinical Assistant Professor of Surgery  Apr 2015 - present
  University of Colorado School of Medicine
- Consulting Tactical Physician - CSPD: TEU / CSFD: TEMS  Nov 2012 - present
- Director, Surgical Critical Care Service, Memorial Hospital  Jul 2008 – present
- Chief, General Surgery Section, Memorial Hospitals  Mar 2015 – Dec 2017
- Chairman, Hospital Inpatient Departments, Memorial Hospitals  Jan 2018 – present

Recognition

- Alpha Omega Alpha Medical Honor Society  1997
- Marion DeWeese Award for Achievement in General Surgery  1998
- Award for Student Excellence, Division of Vascular Surgery  1998
- House Officer Educator of the Year: University of Arizona School of Medicine  2003
- Outstanding Faculty Educator: UTHSCSA Surgical Residency  2004
- Award for Excellence in Instruction: UTHSCSA Third Year Medical Students  2006
- United States Air Force Meritorious Service Medal  2007
Invited Presentations

- “The 332nd AFTH: Experiences at a Deployed Level I Trauma Center During the War on Terrorism” Podium Presentation. Indiana University Trauma Symposium Nov. 2005
- “Experience with Wound VAC and Delayed Primary Closure of Traumatic Contaminated Soft Tissue War Injuries in Iraq” Poster Presentation Eastern Association for the Surgery of Trauma Annual Symposium Jan 2006
- “The Acute Care Surgeon – Evolution of a New Specialty” Podium Presentation. Memorial Trauma and Critical Care Symposium August 2010
- “Psychiatry for Surgeons: Managing Agitated Behavior in the Acute Care Surgery Patient.” Podium Presentation. Memorial Trauma and Critical Care Symposium August 2011
- Diagnosis and Management of Rib Fractures, Current State of the Art” Podium Presentation. Memorial Trauma and Critical Care Symposium August 2014

Publications

- “Children Treated at an Expeditionary Military Hospital in Iraq” Lt Col Christopher P. Coppola, USAF, MC; Maj Brian E. Leininger, USAF, MC; Lt Col Todd E. Rasmussen, USAF, MC; Col David L. Smith, USAF, MC Arch Pediatr Adolesc Med. 2006; 160:972-976.

Top Doc” for General Surgery / Surgical Critical Care: 2011, 2015, 2016 Colorado Springs Style Magazine
Aspen Award - (1st physician ever) Memorial Health System “for extraordinary service to patients and staff”
International Experience

- Instructor: USAF Trauma Training Course, Comayagua, Honduras 2004
  5 day didactic and laboratory course, trained >30 Honduran surgeons in trauma management, trauma systems development, and peer instruction.
- Instructor: USAF Humanitarian Assistance Mission, Puerto Cortes, Honduras 2005
  14 day course trained 4 Honduran surgeons in laparoscopic biliary surgery, >30 operations, > 60 upper endoscopies.
- Instructor, USAF Disaster Planning and Trauma Systems Development Course, Rabat, Morocco 2006
  14 day course trained Moroccan surgeons, nurses, and medical technicians in disaster planning, mass casualty triage, public health, and trauma systems development.

Professional Affiliations

- Society of Air Force Clinical Surgeons 2003 -- present
- J. Bradley Aust Surgical Society 2003 -- 2007
- Diplomate, American Board of Surgery 2004
- Fellow, American College of Surgeons 2005 – present
- Balad Affiliated Doctors / Anaconda Surgical Society (Founding Member) 2005 – present
  - EAST Military Committee 2012 – 2015, 2018 -- 2020
  - EAST Membership Recruitment and Retention Committee 2015 – 2017
- Society of Critical Care Medicine 2007 – present
- Diplomate, American Board of Surgery - Critical Care 2008
- El Paso County Medical Society 2008 – present
- American College of Surgeons Committee on Trauma 2012 – present
  - Colorado State Chapter 2012 – present
- American College of Surgeons Membership Committee 2013 – present
  - Colorado State Chapter 2013 – present
- American Association for the Surgery of Trauma 2014 – present

Certifications

- ATLS July 1998 – present
- ATLS Instructor April 2007 – present
- ATLS Course Director April 2017 – present
- ACLS July 1998 – present
- BLS July 1998 – present
- PALS June 2010 – present
- ISTM (International School of Tactical Medicine) February 2012 – present
- ENLS (Emergency Neurologic Life Support) Nov 2017 -- Nov 2019

Hospital Appointments

- MHS Trauma Multispecialty Review Committee 2008 -- present
- MHS General Surgery Monitoring and Evaluation Committee 2008 -- present
- MHS Critical Care Monitoring and Evaluation Committee 2011 -- present
- MHS Pharmacy and Therapeutics Committee 2011 -- present
- MHS Physician Recruitment and Retention Committee 2010 -- 2011
- MHS Medical Executive Committee 2015 -- present
- MHS Operating Room Committee 2015 -- 2017
Massive Transfusion-Resource for Adult Patients

<table>
<thead>
<tr>
<th>Effective Date: 12/13/17</th>
<th>Replaces Policy:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3/17/17</td>
</tr>
<tr>
<td>Policy Owner: Blood Bank, Trauma Services</td>
<td></td>
</tr>
</tbody>
</table>

**Introduction:**

Adult patients requiring massive transfusions of blood will be given appropriate blood components to prevent further sequelae from hemorrhage and/or massive blood replacement.

For the purposes of the administration of this Massive Transfusion Protocol (MTP), massive transfusion is defined as transfusion of blood products sufficient to replace a patient's entire blood volume within 24 hours.

Adult patients receiving massive transfusions are at risk of developing dilutional and consumptive coagulopathies. As a result, it is important to attempt to prevent or lessen coagulopathies with massive transfusion of red blood cells.

**Scope:**

All staff involved in the treatment and care of patients requiring massive transfusion implementation greater or equal to 15 years old.

**Policy Details:**

I. **Activation criteria**

   A. The massive transfusion protocol (MTP) must be activated early in the course of hemorrhage for optimal efficacy.
   
   B. The primary criterion for activation is anticipatory.
1. A concern on the part of the treating physician that the patient has active large-volume hemorrhage with the potential to require complete replacement of his/her blood volume in the first 24 hours of treatment.

II. Protocol

Once activation of the Massive Transfusion Protocol occurs, the packed red blood cells (PRBC) to fresh frozen plasma (FFP) ratio should be maintained at the ordered ratio of 1:1.

A. When massive transfusion activation is requested, the first massive transfusion set (MTSET) is released from the Blood Bank and administered to the patient will consist of 4 units of packed red blood cells and 4 units of FFP. Platelets will be administered after every 6 to 8 units of PRBC / FFP, or based upon the patient’s platelet count. (See Table.)

B. Cryoprecipitate should be delayed until the THIRD MTSET because the FFP contains an adequate amount of fibrinogen to allow coagulation.

C. Calcium Chloride IV should be infused during the first MTSET. Ionized Calcium level should be drawn 2 hours post infusion and then replaced according to the patient’s laboratory results.

D. When the massive transfusion protocol is activated, a loading dose of tranexamic acid (TXA) should be administered over 10 minutes, followed by an infusion that will run over 8 hours.

E. The loading dose should be administered within the first hour after the onset of hemorrhage, if possible.

F. The attending trauma surgeon or physician may decline administration of this agent based on clinical judgment.

G. Blood products administered during the MTP should be given rapidly. Preferred routes include large bore peripheral IVs (18G or bigger, at least 2 IVs), large bore central introducer sheath, or an intraosseous infusion needle. Use of standard 7Fr 3 lumen central line is acceptable in extremis, but should not be the line of choice.

H. Blood products administered during MTP arrive cold. Hypothermia is a cause of coagulopathy and is associated with increased mortality. Therefore, it is essential that all blood products administered during MTP are warmed, preferably by using a Rapid Infuser or an in-line blood warmer.

I. After the initial set is dispensed, the treating physician may customize and adjust transfusion contents based on TEG results as well as modify the products requested based on the patient’s clinical status, point-of-care (POC) and/or laboratory testing results (Hgb, Hct, platelet count, PTT, PT, INR, DIC panel). TEG is not available at Memorial Hospital North. A request to continue the massive transfusion protocol will result in MTSET to be released adhering to the 1:1 ratio. (Refer to table)
## Physician Orders: Blood Bank Releases:

<table>
<thead>
<tr>
<th>Action</th>
<th>PRBC</th>
<th>FFP</th>
<th>Cryo (1 dose = 4 Units)</th>
<th>Platelets</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Emergency Release&quot;</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Ask physician if they need Massive Transfusion Protocol initiated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If “YES”: proceed to MTSET #1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If “NO”: release “PRBCs (or other product as specified per physician order)</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Massive Transfusion Protocol Requested at 1:1 ratio</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>MTSET #1</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTSET #2</td>
<td>4</td>
<td>4</td>
<td></td>
<td>1 plt pack</td>
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<tr>
<td>MTSET #3</td>
<td>4</td>
<td>4</td>
<td>1 dose cryo (4 units)</td>
<td></td>
</tr>
<tr>
<td>MTSET #4</td>
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<td>4</td>
<td></td>
<td>1 plt pack</td>
</tr>
<tr>
<td>MTSET #5</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTSET #6</td>
<td>4</td>
<td>4</td>
<td>1 dose cryo (4 units)</td>
<td>1 plt pack</td>
</tr>
<tr>
<td>MTSET #7</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTSET #8</td>
<td>4</td>
<td>4</td>
<td></td>
<td>1 plt pack</td>
</tr>
<tr>
<td>MTSET #9</td>
<td>4</td>
<td>4</td>
<td>1 dose cryo (4 units)</td>
<td></td>
</tr>
<tr>
<td>Totals after 9 sets</td>
<td>36</td>
<td>36</td>
<td>3 doses cryo (4 units)</td>
<td>4 plt pack</td>
</tr>
</tbody>
</table>
III. PROCEDURE:

A. Clinical unit contacts the Blood Bank to notify them of the need for the MTP.
   1) Products will be ready for pickup in Blood Bank in approximately 5 minutes

B. Blood Bank Staff will activate “Blood Bank Procedures for Massive Transfusion Protocol”.
   1. The Blood Bank will calculate and release the appropriate products to maintain a 1:1:2 ratio, as ordered.
   2. Products will be ready for pickup in Blood Bank in 5 approximately minutes

C. The Patient Care Team will appoint a runner to respond to the Blood Bank when the products are ready.

D. The runner MUST bring any patient identification information known (i.e., trauma number and medical record number).

E. The products will be issued as needed prior to receipt of patient specimen. The Patient Care Team will facilitate specimen for type and screen as soon as feasible.

F. The Blood Bank and Patient Care Team will maintain open communication regarding continuation of Massive Transfusion. The Blood Bank will continue to prepare MTSets as described above until the physician determines that Massive Transfusion can be halted.

G. The Patient Care Team will maintain accurate documentation of Massive Transfusion Administration, including
   1. The time of the Massive Transfusion initiation request, which is the time that the Blood Bank was called
   2. The type and number of units administered
   3. The modes of transfusion (rapid infuser)

H. When massive transfusion protocol is no longer needed, please call and notify Blood Bank to stand down.
Memorial Hospital
Massive Transfusion-Resources for Adults

Definitions: None

References:


- American Association of Blood Banks (AABB), (March 14, 2014) Standards for Blood Banks and Transfusion Services, 29th edition,

Related Policies:

- Uncrossmatch Red Cells and Plasma Products for Patient in Extremus

Applicable Joint Commission Chapter(s):

- Provision of Care Standard (PC)
Introduction:

Massive transfusion is defined as the balanced replacement of a patient's total blood volume.

To provide guideline for activation of the Massive Transfusion Protocol (MTP) and the rapid administration of blood products to critically ill and decompensating pediatric patients in the Emergency Department, Critical Care units and Operating Room.

Scope:

This policy applies to Memorial Hospital Central (MHC) and Memorial Hospital North (MHN) Physicians, Licensed Independent Providers (LIPs), RNs, qualified Transfusionists, Blood Bank and, Respiratory Therapy.

Policy Details:

I. General Information

   A. Pediatric Massive Transfusion Trigger

      1. The actual or anticipated rapid transfusion of blood products and other intravenous fluids to individuals less than 15 years of age to replace greater than the patient’s estimated blood volume within twenty-four (24) hour period and/or need for transfusion equal to half of the patient’s estimated blood volume at one time, such as within one hour. Estimates of total blood volume vary by weight (Appendix A)
B. A concern on the part of the treating physician that the patient has active large volume hemorrhage with the potential to require complete replacement of their blood volume in the first 24 hours of treatment.

C. Activation of MTP by calling the Blood Bank to activate massive transfusion protocol.

1. Include:
   a) Patient name
   b) Location
   c) Medical Record number
   d) Weight
   e) Gender
   f) Physician’s name
   g) Blood Bank ID, if type and screen has been completed

D. Pediatric patients requiring activation of MTP will be managed either in the ED, ICUs, OR or Cath Lab.

E. MTP blood products are ordered according to the following four weight-based categories:

1. Less than 10 kg
2. 10 kg to 20 kg
3. 21 kg to 50 kg
4. Greater than 50 kg

F. Blood bank will begin preparing the next batch of products as soon as the previous is picked up.

1. Each batch of products will be ready until stand down is called; which will deactivate the protocol.

G. Staff should follow the attached MTP algorithm.

II. Guidelines

A. The MTP must be ordered by a physician, however anyone can convey the order to the Blood Bank as long as they provide the ordering physician’s name.

B. Upon call to Blood Bank, they will immediately prepare and have ready for pick up the initial units of uncrossmatched packed red blood cells (PRBCs)

1. Blood Bank will immediately begin thawing initial units of:
   a) AB plasma for patients 50 kg and less
   b) Type A plasma for patients greater than 50 kg
2. When thawing is complete, plasma will be immediately available for pick up.
3. Blood Bank will begin preparing the platelet aliquot while the FFP is thawing.

C. Transfusion verification will be conducted by 2 qualified transfusionists.

D. Products listed below will be administered in batches of 1:1:1, or 2:2:2 depending on patient weight (PRBC:FFP:PLT) to more closely mimic whole blood.

1. For patients, 50 kg and less, the first unit of plasma will be Type AB.
2. For patients greater than 50 kg, the first unit of plasma will be Type A.
3. For all patients, subsequent units of plasma will be type specific, if type and screen and retype (if needed) has been completed.
4. Otherwise, plasma will be issued according to Blood Bank protocol.

E. MTP is transfused in sets as listed below to more closely mimic whole blood.

1. Approximate quantities of each unit are:
   a) Plasma: units plasma 200(+)mL each
   b) Packed Red Blood Cells (PRBC): units PRBCs 300(+)mL each
   c) Platelets (PLT): prepared as a 25 mL, 50 mL, or 100 mL aliquot depending on weight of patient.

III. Suggested Equipment

A. Blood warmer (i.e., ranger warmer or hotline)
B. Rapid infuser
C. 60 mL syringes
D. 1000 mL normal saline
E. Blood/Solutions Sets (10 drops/mL)
F. Blood product filters
G. Blood warmer product specific tubing
H. Rapid infuser product specific tubing
I. Labels (for lines)
J. Drape

The current version of this policy can be viewed on The Source. Printing is discouraged.
K. Gloves
L. Large bore IV or central line

IV. Procedures

A. See attached MTP algorithm for procedure flow.

B. Thermoregulation:
   1. Consider the use of continuous temperature monitoring as patients can become hypothermic during massive transfusions.
   2. Consider warming methods such as warm humidified oxygen, warming blankets, radian warming lights, and use of the hotline for warm fluids/blood products.

C. Activation:
   1. Upon activation of MTP, assemble equipment for transfusion.

D. At initiation draw Type and Screen (for patients less than 4 months of age, use newborn type and screen), Point of Care (POC) (Blood gas, Na, K, iCal) and DIC screen (Plt, PT/PTT, Fibrinogen, D-dimer)

E. POC and DIC screen every 2 hours.

F. Transfuse products as outlined in table below.

G. Add a new blood product filter to each ranger/hotline warmer blood infusion line after 4 units have infused.

H. Do not infuse platelets via the rapid fluid warmer.

I. Change rapid infuser tubing as indicated per manufacture recommendation.

J. Consider use of Tranexamic Acid and/or Calcium chloride/Calcium Gluconate.

V. Documentation

A. Record/document all transfused product on the MTP flowsheet (paper).

B. Add total volumes to intake volumes in the Electronic Health Record (EHR) flowsheet.
VI. Deactivation (Stand Down)

A. MTP will be deactivated at the discretion of the Attending Physician or Supervising LIP.

1. Indication for “Stand Down”
   a) SBP greater than 70+ (age in years X2)
   b) INR less than 1.5
   c) pH greater than 7.2
   d) Improving base deficit
   e) Core temperature greater than 35
   f) Urine output greater than 0.5 mL/kg/hour
   g) Improved clinical exam

B. To deactivate, call Blood Bank or use the ED red phone.

Definitions:
N/A

References:


Related Policies:
Blood/Blood Product Transfusion Procedures
Massive Transfusion Protocol Flowsheet

Applicable Joint Commission Chapter(s):
Provision of Care Standard
**MTP Algorithm Worksheet**  
**Patient Weight 10kg or Less**

<table>
<thead>
<tr>
<th>Blood Products</th>
<th>1st Set Time Given</th>
<th>2nd Set Time Given</th>
<th>3rd Set Time Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>½ unit FFP (~100 ml) (*Use Hotline/Ranger)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRBC 20ml/kg (*Use Hotline/Ranger) (_______ml)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 mL Platelets</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medications</th>
<th>Time Given</th>
<th>Time Given</th>
<th>Time Given</th>
</tr>
</thead>
</table>
| Tranexamic bolus- If under 2 months = 4mg/kg  
If over 2 months = 10-20 mg/kg  
(Give with initiation of MTP) (_______mg) | | x | x |
| Tranexamic drip- If under 2 months = 1mg/kg/hr  
If over 2 months = 10mg/kg/hr  
(Infuse for 8 hrs) (_______mg/hr) | | x | x |
| **Calcium chloride 200mg** (Give after each set)  
**OR**  
**Calcium gluconate 600 mg** (Give after each set)  
(Consider) Factor VII 40mcg/kg (_______mcg)  
(Consider giving after 2nd set, may repeat once) | | | |
| (Consider) Cryoprecipitate 5-10ml/kg (_______ml)  
(Consider giving if fibrinogen < 100mg/dL) | | | |

<table>
<thead>
<tr>
<th>Labs</th>
<th>Upon Initiation of MTP</th>
<th>(Q 2 hrs) Time Drawn</th>
<th>(Q 2 hrs) Time Drawn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type &amp; Screen</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>POC (Gas, Na, K, iCa)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIC Screen (Plt, PT/PTT, Fibrinogen, D-dimer)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**This document is a resource tool for clinical staff. Variations to this guideline may be made at the discretion of a licensed individual practitioner.**

---

The current version of this policy can be viewed on The Source. Printing is discouraged.
# MTP Algorithm Worksheet
## Patient Weight 11kg – 20kg

### Blood Products

<table>
<thead>
<tr>
<th></th>
<th>1st Set Time Given</th>
<th>2nd Set Time Given</th>
<th>3rd Set Time Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 unit FFP (*Use Hotline/Ranger)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 unit PRBC (*Use Hotline/Ranger)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 mL Platelets</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Blood Products

<table>
<thead>
<tr>
<th>Blood Product</th>
<th>1st Set Time Given</th>
<th>2nd Set Time Given</th>
<th>3rd Set Time Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 unit FFP (*Use Hotline/Ranger)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 unit PRBC (*Use Hotline/Ranger)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 mL Platelets</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Medications

<table>
<thead>
<tr>
<th>Medication</th>
<th>Time Given</th>
<th>Time Given</th>
<th>Time Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tranexamic bolus 10-20mg/kg</td>
<td>(_______mg)</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>(Give with initiation of MTP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tranexamic drip 10mg/kg/hr</td>
<td>(_____mg/hr)</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>(Infuse for 8 hrs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium chloride 260mg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OR CaO3 gluconate 800 mg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Consider) Factor VII 90mcg/kg</td>
<td>(_____mcg)</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>(Consider giving after 2nd set, may repeat once)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Consider) Cryoprecipitate 5-10ml/kg (____ml)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(consider giving for fibrinogen &lt; 100mg/dL)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Labs

<table>
<thead>
<tr>
<th>Lab</th>
<th>Upon Initiation of MTP</th>
<th>(Q 2 hrs) Time Drawn</th>
<th>(Q 2 hrs) Time Drawn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type &amp; Screen</td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>POC (Gas, Na, K, iCa)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIC Screen (Plt, PT/PTT, Fibrinogen, D-dimer)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**This document is a resource tool for clinical staff. Variations to this guideline may be made at the discretion of a licensed individual practitioner.**
# MTP Algorithm Worksheet

## Patient Weight 21-50kg

### Blood Products

<table>
<thead>
<tr>
<th>Blood Products</th>
<th>1st Set Time Given</th>
<th>2nd Set Time Given</th>
<th>3rd Set Time Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 unit FFP (*Level 1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 units PRBC (*Level 1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 mL Platelets</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Medications

<table>
<thead>
<tr>
<th>Medications</th>
<th>Time Given</th>
<th>Time Given</th>
<th>Time Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tranexamic bolus 10-20mg/kg (Give with initiation of MTP)</td>
<td>____mg</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Tranexamic drip 10mg/kg/hr (Infuse for 8 hrs)</td>
<td>____mg/hr</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Calcium chloride 530mg (Give after each set) OR Calcium gluconate 1600 mg (Give after each set)</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>(Consider) Factor VII 90mcg/kg (Give after each set, may repeat once)</td>
<td>____mcg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Consider) Cryoprecipitate 5-10ml/kg (Consider for fibrinogen &lt; 100 mg/dL)</td>
<td>____ml</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Labs

<table>
<thead>
<tr>
<th>Labs</th>
<th>Upon Initiation of MTP</th>
<th>(Q 2 hrs) Time Drawn</th>
<th>(Q 2 hrs) Time Drawn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type &amp; Screen</td>
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<td>x</td>
<td>x</td>
</tr>
<tr>
<td>POC (Gas, Na, K, iCa)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIC Screen (Plt, PT/PTT, Fibrinogen, D-dimer)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**This document is a resource tool for clinical staff. Variations to this guideline may be made at the discretion of a licensed individual practitioner.**

The current version of this policy can be viewed on The Source. Printing is discouraged.
MTP Algorithm Worksheet  
Patient Weight > 50kg

<table>
<thead>
<tr>
<th>Blood Products</th>
<th>1st Set Time Given</th>
<th>2nd Set Time Given</th>
<th>3rd Set Time Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 units FFP (*Level 1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 units PRBC (*Level 1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Platelet pack</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>1 dose Cryo (5 units)</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medications</th>
<th>Time Given</th>
<th>Time Given</th>
<th>Time Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tranexamic x Bolus 10-20mg/kg (________mg) (Give with initiation of MTP)</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Tranexamic Drip 10mg/kg/hr (_____mg/hr) (Infuse for 8 hrs)</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Calcium chloride 1000mg (Give after each set)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OR Calcium gluconate 3200 mg (Give after each set)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Consider) Factor VII 90mcg/kg (_______mcg) (Consider giving after 2nd set, may repeat once)</td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Labs</th>
<th>Upon Initiation of MTP</th>
<th>(Q 2 hrs) Time Drawn</th>
<th>(Q 2 hrs) Time Drawn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type &amp; Screen</td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>POC (Gas, Na, K, iCa)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIC Screen (Plt, PT/PTT, Fibrinogen, D-dimer)</td>
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</table>

**This document is a resource tool for clinical staff. Variations to this guideline may be made at the discretion of a licensed individual practitioner.**
Pediatric Massive Transfusion Protocol

**MTP trigger**
Active bleeding and 40 mL/kg crystalloid and 20 mL/kg blood within 4 hrs of injury

**Pediatric Massive Transfusion Protocol (MTP) Activation**

*Call Blood bank*
“Pediatric Massive Transfusion”
Patient in ______ (location)
Patient name: ______________
MRN: ______________
Weight: ______________

**Orders**

**WEIGHT 20 kg or less**
-1 unit AB plasma
-1 unit PRBC
-50 mL platelet (PLT)

**WEIGHT 21 kg to 50 kg**
-2 units AB plasma
-2 units PRBC
-100 mL PLT

**WEIGHT > 50 kg**
Set 1: 4 units thawed A plasma, 4 units PRBC
Set 2: 4 units thawed A plasma, 4 units PRBC, 1 PLT pack
Set 3: 4 units thawed A plasma, 4 units PRBC, 1 dose Cryoprecipitate
Repeat sets 1, 2, and 3 as needed

Blood bank to “keep ahead”
Type and Screen
POC (Blood gas, Na, K, Ica) now and every 2 hrs
DIC panel (Platelets, PT / PTT, Fibrinogen, D-dimer) now every 2 hours

Administer Calcium Chloride or Calcium Gluconate
dosing for each 100ml citrated blood infused

**Indications for “Stand down”**
SBP greater than 70 + (age in years X 2)
INR less than 1.5
pH greater than 7.2
Improving base deficit
Core temp greater than 35
Urine output greater than 0.5 mL/kg/hr
Improved clinical exam

**Massive Transfusion Protocol “Stand “Down**

Call Blood Bank

**Consider Tramexamic Acid or Factor VIIa**

**Fibrinogen less than 100mg/dl**

**Consider cryoprecipitate:**
Order as 1 unit, 2 units or in a 5 unit pool
Each unit of Cryoprecipitate increases fibrinogen by 5 – 10 mg/dL.

**Transfusion Guide**
Large bore peripheral or central lines
Monitoring lines: arterial BP and CVP
WARM FLUIDS:
**Weight 20kg or less**
-Blood Warmer (ranger/hotline)
-Change blood filter every 4Units

**Weight greater than 21kg**
-Change filter every 3 hours
-Do not use Level 1 for platelets (use platelet filter)
**Uncrossmatched Red Cells and Plasma Products for Patient in Extremus**

<table>
<thead>
<tr>
<th>Effective Date: 11-17-2017</th>
<th>Replaces Resource: Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Resource Owner: Laboratory</td>
</tr>
</tbody>
</table>

**Introduction:**

UCHealth Memorial Hospital (MH) Blood Bank will have O positive and O negative red blood cell units available for emergent transfusion for patients who present in hypovolemic shock secondary to blood loss.

**Scope:**

This resource applies to all UCHealth Memorial Hospital Clinical staff and employees.

**Resource Details:**

I. General Information

   A. The charge nurse or technician notifies the blood bank when Emergency Release Product is initiated.

   B. A staff member provides the following information to the blood bank upon calling:

      2. The number of uncrossmatched units required.
      3. Age of the patient.
      4. Sex of the patient.
      5. Ordering Provider’s name.
C. The requesting unit sends a runner to pick up the blood products ordered.

1. The runner must bring the patient’s identification information to the blood bank in order to pick up the cooler.
2. Responsibilities of runner obtaining blood for the patient:
   a) Verify name
   b) Verify medical record number
   c) Match the information on the Emergency Red Cell Issue (ERCI) form or the Emergency Plasma Products Issue (EPPI) form.
3. Sign the ERCI/EPPI form in the blood bank Sign-Out to Runner section.

D. Responsibilities of the transfusionist and transfusionist witness:

1. Visually compare and match the unit numbers and ABO-RH types on blood bags to verify the list on the ERCI/EPPI form.
2. Verify that blood has not expired.
3. Verify the recipient by comparing form to blood bank armband, if available.
4. The transfusionist and transfusionist witness will sign next to each unit of red blood cells verified.
5. For each unit of blood infused, the infusion start and stop time will be documented.
6. For each unit of blood, document if any reactions were noted.
   a) If a transfusion reaction occurs, follow the transfusion reaction guidelines (Refer to Blood Transfusion policy and Lippincott).
7. When the ERCI/EPPI form is completely filled out, return the yellow copy to the blood bank.
   a) The white copy of the ERCI/EPPI form goes on the patient’s chart.
8. Note: If a blood bank specimen has not yet been drawn, please obtain an arm banded specimen for compatibility testing and hand-deliver it to the blood bank as soon as reasonably possible. If possible, this should be done before the first unit of blood is transfused.

E. Repeat the process above with each additional set of blood that is transfused.

1. A new ERCI/EPPI form should be completed with each set of blood that is transfused.
2. Exception: The physician’s signature does not have to be obtained when the process is repeated, it is just needed the first time.

F. Return the coolers and any remaining units of blood to the blood bank within 4-10 hours of issue.

G. Verify that the ordering physician signs the electronic order for Emergency Release Products or signs the acknowledgement statement at the bottom of the ERCI/EPPI form.

The current version of this policy can be viewed on The Source. Printing is discouraged.
Definitions:
N/A

References:
- AABB Standards, Current Edition
- CFR 606.151
- BBTR 5 Massive Protocol
- BBTR 2 Emergent Requirement for Blood Products

Related Policies:
- Massive Transfusion policy

Applicable Joint Commission Chapter(s):
- Provision of Care Standard (PC)
Curriculum Vitæ

Personal:
Date of Birth:
Place of Birth:
Citizenship:

Education:
College
Syracuse University
Graduate
George Washington University
BS in Medical Technology
Medical Degree

Training:
Residency
Pediatrics
New England Medical Center
Boston, MA
1989-1992
Fellowship
Pediatric Critical Care
Children’s Hospital
Denver, CO
1992-1995

Faculty Appointments:
Medical Director Pediatric ICU
2007-Present
Pediatric Critical Care Specialist
Memorial Children’s Hospital
Colorado Springs, CO
Pediatric Section Chief
2005-2007
Pediatric Critical Care Specialist
Swedish Medical Center
Denver, CO
Pediatric Critical Care Specialist
Presbyterian/St. Luke’s Medical Center
Denver, CO
1995-Present
Pediatric Critical Care Specialist
1995-1997
Assistant Director of PICU
Assistant Director of Pediatric Education
Memorial Hospital
Savannah, GA
Assistant Professor of Pediatrics
1996-1997
Mercer University School of Medicine
Macon, GA
Assistant Professor of Pediatrics
1996-1997
Medical College of Georgia
Augusta, GA

Experience:
Pediatric Intensivist 2007-Present
Memorial Hospital for Children’s
Colorado Springs, CO

Pediatric Intensivist 1997-Present
Presbyterian/St. Luke’s Medical Center
Denver, CO

Pediatric Intensivist/Hospitalist 1999-2007
Swedish Medical Center
Denver, CO

Pediatric Intensivist 1995-1997
Memorial Hospital
Savannah, GA

Pediatric Emergency 1993-1995
Health One Hospitals
Denver, CO

Pediatric Urgent Care 1992-1995
Kaiser Permanente
Denver, CO

Professional:
Board Certifications: Pediatrics
Pediatric Critical Care

Certifications: PALS
ATLS

Research: Botulism Immune Globulin
Pleconaril
Inflammatory Mediators

Volunteers: Pediatric Council for Colorado Chapter of AAP
Operation Smile – Pediatric Intensivist
Families First
CURRICULUM VITAE

PERSONAL INFORMATION

Name: William D. Hardin, Jr., M.D.
Citizenship: U.S.A.
Foreign Languages(s): English

RANK/TITLE

Title Visiting Professor of Surgery
The University of Colorado School of Medicine and
Associate Chief Medical Officer
The Children’s Hospital of Colorado

Department: Surgery/Pediatric Surgery

Business Addresses:
The Children’s Hospital of Colorado
13123 East 16th Ave.
Aurora, CO 80045
Phone: (720) 777-1234

UCHealth-Memorial Hospital Central
1400 Boulder Ave.
Colorado Springs, CO 80909
Phone: (719) 365-8001

The Children’s Hospital of Colorado
Briargate Outpatient Specialty Center
Briargate Parkway
Colorado Springs, CO
Phone: 719-305-9371

HOSPITAL AND OTHER (NON ACADEMIC) APPOINTMENTS:

Director, Pediatric Trauma Service:
Lehigh Valley Health Network: 2008-2014

Director, Burn Services:

Medical Director, Information Systems:
The Children’s Hospital of Alabama: 1996-2007

Medical Director, Lehigh Valley Cedar Crest Operating Room: 2011-2014
Member- LVHN Operating Room Governing Board- 2009-2014
Member- Pediatric Service Line Council- 2008-2014
Member- Children’s Hospital at Lehigh Valley Leadership Council- 2012 to 2014

PROFESSIONAL CONSULTANTSHIPS:

Developer: Children’s Health System Internet Site (www.chsys.org)
Children’s Health System Intranet Site
Online Infection Control Inservice
Online Fire/Safety Inservice
Architect: Enterprise-wide Scheduling and Registration Process
Technology Committee Member-1996-2007
EDUCATION

Harvard University
Cambridge, Massachusetts A.B. 9/10/1971-6/12/1975

CMDNJ-Rutgers Medical School
Piscataway, New Jersey 9/10/1975-6/10/1977

Tulane University School of Medicine

LICENSURE:

Louisiana 1979 (not current)
California 1984 (not current)
Alabama 1991 (not current)
Pennsylvania 2008 (not current)
Colorado 2014- Present

BOARD CERTIFICATION:

American Board of Surgery

CERTIFICATIONS:

Federal Licensure Examination (FLEX) 1979
American Burn Association
ABLS - Instructor
American College of Surgeons
ATLS – Instructor
American Heart Association
BLS – Instructor
ACLS – Instructor
PALS – Instructor

POSTDOCTORAL TRAINING:

7/1/1979-6/30/1980 M.D. Internship – Surgery Charity Hospital of Louisiana
7/1/1979-6/30/1984 M.D. General Surgery Tulane University Affiliated Hospitals
7/1/1984-6/30/1986 M.D. Pediatric Surgery Children’s Hospital of Los Angeles
The University of Southern California

ACADEMIC APPOINTMENTS:

2014 – Present Visiting Professor of Surgery The University of Colorado School of Medicine
2009 - 2014 Professor of Surgery and Pediatrics The University of South Florida Morsani School of Medicine
2006 – 2007  Professor of Surgery and Pediatrics  The University of Alabama School of Medicine
1991 – 2006  Associate Professor of Surgery and Pediatrics  The University of Alabama School of Medicine Birmingham, Alabama
1990 – 1991  Associate Professor of Surgery and Pediatrics  Tulane University School of Medicine New Orleans, Louisiana
1986 – 1990  Assistant Professor of Surgery  Tulane University School of Medicine New Orleans, Louisiana

WORK HISTORY:

July, 1984 – June, 1986:  Fellow in Pediatric Surgery  Los Angeles Childrens Hospital Department of Pediatric Surgery
Sept, 1986 – October, 1991:  Assistant Professor of Surgery And Pediatrics  Tulane University School of Medicine New Orleans, Louisiana
Associate Professor of Surgery And Pediatrics

November, 1991 – October, 2007  Associate Professor of Surgery and Pediatrics  The University of Alabama School of Medicine Birmingham, Alabama
Professor of Surgery and Pediatrics

January, 2008 – January, 2014  Vice Chair for Pediatric Surgical Services  Lehigh Valley Hospital and Health Network The University of South Florida Morsani College of Medicine
Professor of Surgery and Pediatrics

March, 2014- Present  Visiting Professor of Surgery  The University of Colorado School of Medicine
Associate Chief Medical Officer The Children’s Hospital Colorado

AWARDS/HONORS

Cum Laude in Biology-Harvard University - 1975
Oscar Creech Award for Surgical Excellence-Tulane University - 1979
Upjohn Achievement Award as Outstanding Intern- Charity Hospital, Tulane Division-1980
Outstanding Paper-Alton Ochsner Surgical Society – 1987
Teaching Honor Roll- Owl Club, Tulane University School of Medicine 1988
Faculty Inductee- Alpha Omega Alpha Medical Honor Society-1988
Vice-President, American Heart Association-Louisiana Chapter-1991
Guest Examiner for the American Board of Surgery
Crystal Quill Award- Best Corporate Website for Birmingham-1997
Southern Medical Association- Scientific Paper Recognition Award- 1999
Honorable Mention (Second Place)- Poster Award from the Society for Pediatric Radiology - 1999.
Cum Laude Citation- Poster Award from the American Society of Neuroradiology- 1999.
Argus Award for Teaching- University of Alabama School of Medicine- 2006
Best Presentation Award (2nd Place)- Southern Burn Regional Meeting- 2007
Argus Award for Teaching- University of Alabama School of Medicine- 2007

PROFESSIONAL SOCIETIES:

Alpha Omega Alpha Medical Honor Society
Alton Ochsner Surgical Society
American Academy of Pediatrics-Fellow, 1997
American Academy of Pediatrics- Louisiana Chapter
American Academy of Pediatrics- Alabama Chapter
American Academy of Pediatrics – Surgical Section
American Association for the Advancement of Science
American Association of University Professors
American Burn Association
American College of Surgeons – Fellow, 1989
American College of Surgeons – Alabama Chapter
American Heart Association
American Medical Association
American Medical Informatics Association
American Pediatric Surgical Association
American Public Health Association
American Trauma Society
Association for Academic Surgery
Eastern Association for the Surgery of Trauma
  Founding Member
El Paso County Medical Society
Greater New Orleans Pediatric Society
Harvard Alumni Association
Health Informatics and Medical Management Society
International Pediatric Endosurgery Group
Jefferson County Medical Society
Johnson & Johnson Medical, Infection Prevention Systems Advisory Panel
Louisiana State Medical Society
Louisiana Surgical Society
National Association of EMS Physicians
New York Academy of Sciences
Medical Association for the State of Alabama
Orleans Parish Medical Society
Safe Kids Coalition- Alabama and Jefferson County Chapters
Society of Critical Care Medicine
Society of Laparoendoscopic Surgeons
Southeastern Surgical Congress
Southern Medical Association
Tulane Medical Alumni Association
Tulane Surgical Society
MEMBERSHIPS, COUNCILS, AND COMMITTEES:

Hospital Committees:

**Children’s Hospital of Alabama**
- Critical Care Committee-1992-1996
- Ad-Hoc Surgical Privilege Card Committee – Chairman, 1994
- Surgical Peer Review Committee – Chairman, 1993-2001
- Ambulatory Care Quality Assurance Committee-1995-1996
- Medical Records Committee-1994-1997
- Library Committee-1994-1996
- Trauma Committee – Chairman, 1991-2007
- Clinical Information Advisory Committee-Chairman, 1995-2007

**Lehigh Valley Health Network**
- Operating Room Council- 2009 – 2014
- Operating Room Value Analysis Committee – 2008 – 2014
- Pediatric Service Line Council- 2008 – 2014
- Physician Health Committee- 2008 – 2014
- Surgical Executive Committee- 2008- 2014

**The Children’s Hospital Colorado**
- Medical Executive Committee- 2014 - Present
- Medical Board- Ad Hoc Member- 2014 – Present
- Peer Review Team- 2014-Present
- Serious Safety Event Review Team- 2014- Present

**UCH- Memorial Hospital**
- Multispecialty Case Review Team- 2014-Present
- Liaison to Pediatric Section- 2014-Present
- Liaison to Pediatric Surgical Section- 2014-Present
- Chairman- Pediatric Physician Leadership Committee- 2014-Present

External Committees:

**Local:**
- Northampton County Child Death Review Team: 2008 - 2013
- Birmingham Regional EMS Advisory Committee: 1994-2007
- Birmingham Regional Trauma Committee: 1997-2007
- Quality Assurance Subcommittee-1997-2007
  - Chairman-1997-1998
- Emergency Medical Services Committee: 1988-1991
- RAPID Team Member: 1988-1991
State:
Alabama State Trauma Advisory Committee: 1998-2002
Appointment of Governor Fob James
Alabama State Committee on Trauma: 1997-2007
Vice-Chairman: 2002-2007
American Heart Association- Louisiana Chapter
   Vice President: 1990-1991
   Emergency Cardiac Care Committee-1987-1991
   Chairman-1988-1991
Louisiana State Medical Society
Liaison Committee with Health Professionals – 1990-1991
Pennsylvania Committee on Trauma, Pediatric Subcommittee- 2008-2013
Young Physicians Committee – 1990-1991

National:
American Academy of Pediatrics-Surgical Section
   Program Committee- 1999-2001
American Burn Association
   Governmental Affairs Committee- 2003-2007
American College of Surgeons
   Regents Committee on Informatics – 2000 - 2006
American Heart Association
American Pediatric Surgical Association
   Vice Chairman: 1998
   Chairman: 1999 - 2000
International Trauma Anesthesia and Critical Care Society: 1996
Emergency Medical Services for Children Grant Program
   Project Steering Committee - 1990
Southern Burn Association
   Chairman- 2007 - 2009

MAJOR RESEARCH INTERESTS:

Pediatric Trauma
   Prevention Programs and Strategies
   Trauma Systems
   Disaster Preparedness and Planning
Pediatric Burns
   Burn Prevention
   Ethics and the Pediatric Burn Patient
Evidence-Based Practices in Pediatric Surgery
Surgical Technology
   Hand-held Palm Devices
   Telemedicine
   Digital Imagery and Surgery
   Ethics in Surgery

TEACHING EXPERIENCE:

Organized and Introduced PALS Training- Provider and Instructor Programs in the State of Louisiana

Instructor

Pediatric Advanced Life Support (PALS)- American Heart Association
Advanced Trauma Life Support (ATLS)- American College of Surgeons
Advanced Burn Life Support (ABLS)- American Burn Association
Advanced Cardiac Life Support (ACLS)- American Heart Association


Course Co-Director: “Advanced Powerpoint and Multimedia for Surgeons”
The American College of Surgeons: 2005 Clinical Congress

Program Chairman: “Informatics for Physicians”
University of Alabama School of Medicine, Medical Alumni Program - 2006

Course Director: “Advanced Powerpoint and Multimedia for Surgeons”
The American College of Surgeons: 2006 Clinical Congress

Program Chairman: “Ethics for Physicians”
University of Alabama School of Medicine, Medical Alumni Program - 2007

Course Director: “Advanced Powerpoint and Multimedia for Surgeons”
The American College of Surgeons: 2007 Clinical Congress

Instructor in Third Year General Surgery Clerkship

Guest Lecturer- First Year Ethics Program

MAJOR LECTURES AND VISITING PROFESSORSHIPS:

Visiting Professorships:
Department of Surgery, The University of Texas at Houston
Surgical Grand Rounds: “Surgical Innovations: From Laparoscopy to Technology”, May, 1993

Department of Pediatrics, University of Mississippi School of Medicine,
Pediatric Grand Rounds: “Pediatric Trauma”, August, 1995

Department of Surgery, The Shriners Hospital at Galveston, The University of Texas at Galveston, “The Ethics of Skin Transplantation between Identical Twin Children for Treatment of Burns”, May 2004

Department of Pediatrics, Primary Children’s Hospital, The University of Utah School of Medicine, “The Ethics of Skin Transplantation between Identical Twins as Treatment for Major Burns, January 19, 2006.

Children’s Hospital Central California, Trauma Grand Rounds, “Trauma Systems: How to make something out of and with nothing.” October 2006
Major Lectures:


44. "Pediatric surgery". University of Alabama at Birmingham School of Medicine, Junior Surgery Clerkship Lectures. Birmingham, AL. April 6, 1992.


50. "Pediatric trauma - Don't forget the kids". Alabama Public Health Association - EMS Section. Orange Beach, AL. March 18, 1993.


70. "From Nintendo to Fetendo"Surgical Images and Education. Surgical Grand Rounds,
University of Alabama at Birmingham School of Medicine, Birmingham, Al. June 10, 1995.


83. “The Role of the Community Hospital in Pediatric Trauma”, Mississippi Coastal Trauma Care Region Meeting, Biloxi, Mississippi, May 17, 2002.


87. “Pediatric Burns and the Cowan Twins”, Surgical Grand Rounds, Good Samaritan Hospital, Panama City, Florida, January 6, 2004.


96. “Harming One Twin to Save Another”, Medical Ethics Course, The University of Alabama School of Medicine, August 31, 2005

97. “The Ethics of Skin Transplantation between Identical Twin Children’, The University of Utah, Department of Pediatrics, Grand Rounds, January 19, 2006

98. “PDA’s: Clinical Information at Your Fingertips”, The University of Alabama School of Medicine, Medical Alumni Association, Reunion Program, February 4, 2006.


103. “An Infection Surveillance Program In a Pediatric Burn Unit”, 19th Annual Southern Region Burn Conference, Durham, NC. November 2006.


108. “Harming One Twin To Save Another”- Doctor, Patient, Society Course, The University of Alabama School of Medicine, Birmingham, AL August 2007


111. “Homecare of Pediatric Burns- One Family’s Perspective”, 21st Annual Southern Burn Region Conference, Richmond, VA October, 2008

112. “Nine Years in a Pediatric Burn Unit- Lessons Learned”, 21st Annual Southern Burn Region Conference, Richmond, VA November, 2008
GRANT SUPPORT:

Norwich Eaton Pharmaceuticals Grant
   "A Double-Blind Multiple Dose Comparison of the Efficacy and Duration of Analgesic Action of Buprenorphine Hydrochloride vs. Meperidine Hydrochloride in Pediatric Patients with Postoperative Pain."

German Protestant Orphan Asylum Foundation
   This grant was provided to establish the Pediatric Advanced Life program at the Children's Hospital in New Orleans.

Joe Brown Foundation
   This grant was provided to buy the equipment necessary to develop the Pediatric Advanced Life program at the Children's Hospital of New Orleans.

EMS-C Demonstration Grant
   This award was made by the Division of Maternal and Child Health of Health and Human Resources to improve the quality of emergency medical services to children in the state of Louisiana. The grant period is one year and the grant is to be funded upon adequate achievement of goals during the first year.

EMS-C Demonstration Grant
   This award was made by the Division of Maternal and Child Health of Health and Human Resources for a second year to improve the quality of emergency medical services available to children in the state of Louisiana.
BIBLIOGRAPHY


ABSTRACTS PUBLISHED


**BOOK CHAPTERS**


Updated December, 2017
CURRICULUM VITAE

John H. McVicker, M.D., F.A.C.S.
Acute Care Neurosurgery and Neurocritical Care
Memorial Hospital, University of Colorado Health
Colorado Springs, Colorado

Biographical:
Birth: 

Education:
Undergraduate:
University of Colorado, Boulder, Colorado
August 1973 – June 1977
Degree: B.A., Molecular, Cellular, Developmental Biology, June 1977
Medical:
University of Colorado, School of Medicine, Denver, Colorado
August 1977 – May 1981
Degree: M.D., May 1981

Medical Training:
Surgical Intern:
University of Florida, Department of Surgery
July 1981 – June 1982
Neurosurgical Resident:
University of Florida, Department of Neurological Surgery
July 1982 – June 1987

Awards:
Gold Reflex Hammer; University of Colorado, School of Medicine, 1980 – 1981
Colorado Neurologic Institute Unity Award, 2001
Swedish Dala Award: Most Compassionate Bedside Manner, 2008
Swedish Dala Award: Most Respectful Physician, 2008

Professional Societies and Appointments:
Phi Delta Epsilon Medical Fraternity
American Medical Association, 1983 to present
Colorado Neurosurgical Society, 1987 to present
Secretary/Treasurer 1991 – 1995
Vice President 1999 to 2001
President 2001-2003
Congress of Neurological Surgeons
Resident member 1983 – 1987
Member 1987 to present
American Association of Neurological Surgeons
Member 1992 to present

American Association of Neurological Surgeons
Emergency Neurosurgical Care Regionalization Task Force, 2014-17
Curriculum Vitae
John H. McVicker, M.D.

Local Arrangements Chairman, 1997 Annual Meeting, Denver, CO
Joint Section on Neurotrauma and Critical Care, AANS/CNS
  Member 1993 to present
  Executive Committee CSNS Liaison, 1997 to 2000
  Executive Committee, Member at Large, 2000-2003
Council of State Neurosurgical Societies
  Delegate 1991 to 2003
  Chairman, Neurotrauma Committee, 1996 to 2001
  Chairman, Southwest Quadrant, 1997 to 2001
Rocky Mountain Neurosurgical Society, 1996 to present
  Vice President, 2000-2001
  Secretary, 2001-2004
  President Elect 2004-2005
  President 2005-2006
Western Neurosurgical Society, 1997 to present
  Local Arrangements Chairman, 2012 Annual Meeting
  Membership Chairman, 2013 to 2015
  Vice President, 2017 to 2018
Fellow American College of Surgeons, 1998 to present
  ACS Committee on Trauma, 2004-2010
  ACS-COT Advanced Trauma Life Support Subcommittee 2004-2010
    (Eight Edition ATLS Editorial Committee 2007-2008)
  ACS-COT Verification Review Committee (VRC)
    Neurosurgical Site Reviewer 2008 to present

Academic Appointments:
  Clinical Instructor, Department of Family Medicine,
  University of Colorado School of Medicine, 2009-2012

Licensure:
  State of Florida     July 6, 1983 – Dec 31, 1987 License No. ME0042198
  State of Colorado    July 9, 1987 to present License No. 28237
    DEA Registration: AM2214221
  State of Wyoming     July 1, 1989 to present License No. 4491A
    DEA Registration: 53MHM07
  State of Nebraska    June 18, 1997 to 2010 License No. 20480
    DEA Registration: BM5410826

Board Certification:
  Diplomate National Board Medical Examiners
    July 1982        Cert. No. 254728
  Diplomate American Board Neurological Surgeons
    November 1991   Cert. No. 91050 Participating in MOC
  Diplomate Neurocritical Care, United Council Neurologic Subspecialties
    December 2008   Cert. No. NCC00367-08

Other Certification:
  Advanced Trauma Life Support Instructor, December 2000, Current
  Advanced Cardiac Life Support (ACLS), Current thru June 2015
Professional Experience:

Director of Neurosciences, Memorial Hospital, University of Colorado Health and Colorado Health Medical Group, October 2012 to present

Director, Acute Care Neurosurgery Service, Memorial Health System, Colorado Springs, Colorado, August 2009 to present

Colorado Department of Public Health and Environment, multi-disciplinary committee to address rule change in Chapter 3 of 6CCR 1015-4: Expanded Scope for Neurosurgery, convening February 2018

Trauma Program Site Reviewer, Florida Department of Health, 2010 to present

Neurotrauma, Neuro-critical Care and Emergency Neurosurgery, Swedish Medical Center, Englewood, Colorado, June 2006 to June 2009

Program Director, Thompson Center for Restorative Neurosurgery, Colorado Neurological Institute, Englewood, CO 2005 to 2010

Rocky Mountain Neurosurgical Alliance, P.C.
Private practice, Englewood, Colorado
April 12, 1994 to March 31, 2006
President, 2001 to December 2005

North Colorado Neurosurgery, P.C.
Private practice, Greeley, Colorado
July 1, 1987 – March 31, 1994

Vice President, Colorado Neurological Institute
2000 – 2002

President, Colorado Neurological Institute
2003 – 2006

Board of Directors, Colorado Neurological Institute
1999 – 2006

Chairman, Research Committee, Colorado Neurological Institute
2000 – 2001

Director of Neurotrauma, Medical Center of Aurora, Aurora, CO
2000 – 2001

Site Surveyor, Pennsylvania Trauma Systems Foundation, 1999 to 2002

Director of Neurotrauma, Swedish Medical Center (Level I), Englewood, CO 1996 – 2004

Colorado Risk Management LLC, Board of Directors
1994 – 1999

State of Colorado Department of Labor and Employment,
Workers’ Compensation Division, Task Force on Traumatic Brain Injury
1996 – 1997

Ethics Committee, Swedish Medical Center, Englewood, CO
2003-present

Trauma Spine Committee, Swedish Medical Center, Englewood, CO
1995 – 2002

Peer Review Committee, Swedish Medical Center, Englewood, CO
1995 – 1997

Infectious Disease Committee, PorterCare and Littleton PorterCare Hospitals
1995 – 1996

Professional Conduct Panel, North Colorado Medical Center, Greeley, CO
1993 – 1994

Credentials Committee, North Colorado Medical Center, Greeley, CO
1988 – 1990

Volunteer faculty, North Colorado Family Medicine Residency, Greeley, CO
1987 – 1994

Hospital Staff Appointments:
Memorial Hospital, University of Colorado Health (affiliated 10/2012)
   Active Staff- 2012 to present
   Chief of Neurosurgery, 2011-2015,2017
   Medical Executive Committee, 2011-2015,2017

Past Affiliations:
Memorial Health System, Colorado Springs, CO
   Active Staff – 2009 to 2012
HealthONE Swedish Medical Center, Englewood, CO
   Active Staff – 1994 to 2011
Craig Rehabilitation Hospital, Englewood, CO
   Consulting Staff – 1994 to 2010
HealthONE SkyRidge Medical Center, Lone Tree, CO
   Active Staff – 2004 to 2006
HealthONE Medical Center of Aurora South, Aurora, CO
   Active Staff – 1994 to 2006
Rocky Mountain Gamma Knife Center, Denver, CO
   Active Staff – 1995 to 2006
Centura Porter Care Adventist Hospital, Denver, CO
   Active Staff – 1994 to 2006
Centura Littleton PorterCare Adventist Hospital, Littleton, CO
   Active Staff – 1994 to 2006
Centura St. Anthony’s Hospitals, Denver, CO
   Active Staff – 1995 to 2006
The Children’s Hospital, Denver, CO
   Courtesy Staff
North Colorado Medical Center, Greeley, CO
   Courtesy Staff
Mckee Medical Center, Loveland, CO
  Courtesy Staff
Sterling Regional Medical Center, Sterling, CO
   Courtesy Staff
Regional West Medical Center, Scottsbluff, NE
   Courtesy Staff

Civic Organizations:
St. Benedict’s Guild, St. Andrew’s Episcopal Church, 2002-2009
Greeley Rotary Club
   1989 to 1994
   Rotary Youth Exchange Program Chairman, 1991 to 1994
   Board of Directors, 1993 to 1994
First Presbyterian Church, Greeley, CO
   Personnel Committee, 1988 to 1991
   Board of Elders, 1989 to 1991
Publications:


Advanced Trauma Life Support for Doctors. ATLS Manuals for Coordinators and Faculty, Eighth Edition. (Neurosurgical contributor) American College of Surgeons Committee on Trauma; 2008.


Presentations:


Vertebral Augmentation for Traumatic Osteoporotic Vertebral Compression Fractures. Memorial Hospital Annual Trauma Symposium, August 2012

Crash2 and Analysis of Futility in Severe Traumatic Brain Injury. Memorial Hospital Trauma Grand Rounds, December 2010.

Cooling Down in August: Therapeutic hypothermia & normothermia in the Neuro ICU. Memorial Health System Annual Trauma Symposium. Colorado Springs, CO. 8/21/2010


Surgical Management of Parkinson’s Disease. Invited Lecture, Parkinson’s Association of the Rockies, St. Joseph’s Hospital, Denver, CO. 4/16/05


Cervical Spine Clearance in Trauma: Identifying Injury and Preventing Morbidity. Vail Valley Medical Center, Trauma Update. 7/18/00.

Persistent Postoperative Pain. Health One Foundation Seminars: “Spine Care 2000,” Aurora, CO. 5/5/00

Neurosurgical Implications of the Columbine Tragedy. West Metro Fire Department, Littleton CO. 6/16/99.


SIGNATURE

John H. McVicker, M.D. 11/14/2017
Peter D. Fredericks, M.D.

WORK EXPERIENCE

08/15 – Present  **Colorado Health Medical Group – UC Health**  
**Orthopaedic Trauma Surgeon at Memorial Central Hospital**  
**Level II Trauma Center**  
**Orthopaedic Surgery Physician Practice Leader**  
Colorado Springs, Colorado

11/16 – Present  **Orthopaedic Trauma Medical Director**

08/13 – 07/15  **Colorado Springs Orthopaedic Group**  
**Orthopaedic Trauma Surgeon at Memorial Central Hospital**  
**Level II Trauma Center**  
Colorado Springs, Colorado

EDUCATION

08/12 – 07/13  **OrthoIndy**  
**Fellowship in Orthopaedic Trauma**  
Indianapolis, Indiana

07/08 – 06/12  **Oregon Health and Science University**  
**Residency in Orthopaedic Surgery**  
Portland, Oregon

06/07 – 06/08  **Oregon Health and Science University**  
**Internship in General Surgery**  
Portland, Oregon

07/03 – 05/07  **The University of Arizona**  
**Doctor of Medicine**  
- Alpha Omega Alpha medical honor society  
Tucson, Arizona

08/97 – 05/02  **The University of Arizona**  
**Bachelor of Science**  
- Major in General Biology  
- Minors in General Business Administration and Chemistry  
- Phi Beta Kappa academic honor society  
- graduated cum laude  
Tucson, Arizona

RESEARCH EXPERIENCE

08/12 – 07/13  **OrthoIndy**  
**Patient Mortality in Geriatric Distal Femur Fractures**  
Manuscript revision submitted 9/2017 to the Journal of Orthopaedic Trauma.  
Indianapolis, Indiana

04/11 – 06/12  **Shriners Hospital for Children**  
**Comparison of two different instrumentation techniques in the treatment of neuromuscular scoliosis**  
Portland, Oregon

06/02 – 08/02  **Veterans Affairs Palo Alto Health Care System**  
**Clinical Research Intern, Paralyzed Veterans of America/Spinal Cord Injury Service Summer Scholars Program**  
Palo Alto, California

06/01 – 05/02  **University of Arizona Health Sciences Center**  
**Laboratory Assistant, Physiology-Vascular Physiology**  
Tucson, Arizona
PRESENTATIONS

8/23/13  “Orthopaedic Trauma Care” UCHHealth Memorial Trauma Symposium, Co. Springs, CO
8/28/15  “Management of Pelvic Ring Injuries” UCHHealth Memorial Trauma Symposium, Co. Springs, CO

ORGANIZATIONS / COMMITTEES

07/10 – 06/11  Spine Best Practices Committee, Oregon Health and Science University

PROFESSIONAL HONORS AND AWARDS

Top Doc Award in Orthopaedic Surgery, Colorado Springs Style Magazine – 2016, 2017

ACADEMIC HONORS AND AWARDS

•  Outstanding Achievement Award, University of Arizona College of Medicine – 2007
  Arizona College of Medicine – 2007
  •  Excellence in Clinical Skills Award, Highest cumulative score on the OSCE – 2007
  •  The National Dean’s List – 2001-2002
  •  Golden Key National Honors Society
  •  Dean’s List with Distinction – Spring 2000, Fall 2001
  •  Dean’s List – Fall 2000
  •  Dean’s List Honorable Mention – Fall 1998, Fall 1999, Spring 2001
•  Mary Roby Award for student-athlete academic excellence – 1998, 1999, 2000

ATHLETIC HONORS AND AWARDS

•  University of Arizona  NCAA Division I baseball scholarship recipient– 1997-2001
•  Team USA Invitational National Baseball Trials participant – Fall 1997
•  Selected by the Houston Astros in the 10th round of the 1997 Major League Baseball Draft

ACTIVITIES

•  Team Physician, Harrison High School Football – 2013
•  American Heart Association CPR instructor – 2004-2007
•  Medteach Coordinator: taught and coordinated courses/dissections about eye and heart
  anatomy to underserved elementary and middle school children – 2004-2005
•  Arizona Sports Medicine Education Club Officer – 2004-2005
•  Chemistry and Math tutor – 2002-2003
•  Volunteer EMT for Phoenix Fire Department’s Community Assistance Program – 2002-2003
•  Teaching Assistant for Plant Sciences 312: Plant Genetics – Spring 2002
•  Volunteer Speaker for the Smith Project Speaker’s Bureau – 2000-2002
•  Four-year letter winner on the University of Arizona men’s varsity baseball team – 1997-2001
•  Coached little league baseball – 1995
CURRICULUM VITAE
Marc S. Kelly, M.D.
Board Certified, Physical Medicine and Rehabilitation
Board Certified, Spinal Cord Injury Medicine
Board Certified, Pain Medicine

CLINICAL AND PROFESSIONAL EXPERIENCE

Medical Director of Rehabilitation Services
University of Colorado Health, Memorial Hospital, Colorado Springs, CO 2002-Present
• Commenced as Medical Director of Outpatient Rehabilitation and subsequently promoted to Medical Director of Rehabilitation Service Line. Tasked with ensuring full spectrum of rehabilitative services available including acute care consultations, inpatient rehabilitation services, outpatient services and occasional pediatrics. Covering the entire spectrum of rehabilitation conditions including development of concussion program with Neuropsychology, assistance with musculoskeletal and spine program, consideration of in-house subacute program, electrodiagnostic studies, etc. Coverage and call for acute inpatient rehabilitation unit for University of Colorado Health, Memorial Hospital.

Staff Physician
VA Medical Center/Spinal Cord Injury Unit, San Diego, CA 1993-2002
• Medical and rehabilitative management for all spinal cord injured patients. Acute and routine care for newly injured and chronic spinal cord injured patients as well as coverage of other spinal conditions including multiple sclerosis on both an inpatient and outpatient basis. Attending Physician with UCSD School of Medicine, Department of Orthopedics.

Staff Physician
Sharp Memorial Hospital, San Diego, CA 1998-2002
• Primarily covering all general inpatient rehabilitation conditions and some outpatient services for rehabilitation conditions including follow-up after rehabilitation hospitalization; chronic pain, multiple trauma; SCI; traumatic brain injury; multiple sclerosis; amputations; cerebrovascular accidents; Parkinson’s disease; medical debility and so forth.

Attending Physician
San Diego International Medical Center, Chula Vista, CA 1998-2002
• Workers Compensation evaluations and treatments; conditions treated include musculoskeletal and neurologic ailments. Electrodiagnostic studies, including nerve conduction studies, electromyography and evoked potentials, utilized to assess for entrapments and other neuropathies. Strong emphasis on functionality and return to work. Use of physical and occupational therapy; splinting, work hardening and local injections as appropriate.
**Staff Physician**
Scripps Memorial Hospitals, La Jolla and Encinitas, CA 1994-1998

- General inpatient and outpatient services for all general rehabilitation conditions including multiple trauma; traumatic brain injury; multiple sclerosis; amputations; cerebrovascular accidents; Parkinson’s disease and spinal cord injury.

**EDUCATION**

Residency Training 1989-1993
Nassau County Medical Center, East Meadow, NY
650-Bed tertiary care hospital and major trauma center, a teaching affiliation of SUNY Stony Brook School of Medicine.
Selected Chief Resident in senior resident year.

Medical School, Doctor of Medicine
1985-1989
Creighton University School of Medicine, Omaha, NE

Graduate School, Masters Program, Bioengineering 1984-1985
University of California, San Diego, CA

Manhattan College, Bachelor of Engineering 1976-1980
Manhattan College, Riverdale, NY

**PREVIOUS EMPLOYMENT**

**Engineer, General Dynamics Corporation**
1983-1985
San Diego, CA

- Worked extensively in the area of fatigue and fracture mechanics. Promoted to supervisor of fatigue and fracture group in early 1984 in charge of durability and damage tolerance for Shuttle/Centaur and Cruise Missile programs with consultation services to Energy System Division as required.
Responsibilities included: research and development of spectrums; material property and manufacturing processes; review of calculations; computer programs; and vendor supplied information. Liaison for customer, NASA-Lewis Research Center. Held Secret Security Clearance.
Engineer, Gibbs & Cox, Inc 1981-1983
New York, NY
- Performed structural analysis, design and detailing of various structures for naval ships for conditions including shock, vibration and normal operation. Extensive use of computers for analysis and design. In October of 1982, promoted to managerial staff in charge of structural group.

LICENSES, CERTIFICATIONS AND MEMBERSHIPS

- Board Certification in Pain Medicine, 2003
- Medical Licensure ~ Colorado License # 40518, 2002
- Board Certification in Spinal Cord Injury Medicine, 1998
- Qualified Medical Evaluator, 1998
- Board Certification in Physical Medicine and Rehabilitation, 1994
- American Medical Association
- American Academy of Physical Medicine and Rehabilitation
Organ and Tissue Donation

<table>
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<tr>
<th>Effective Date: 6/17</th>
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<td>MHC/MHN: Organ and Tissue Donation</td>
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| Policy Owner: Clinical Practice Governance Group |

Introduction:
UCHHealth, in accordance with the Omnibus Reconciliation Act of 1987, CMS Medicare Conditions of Participation (42 CFR §482.45) and the Uniform Anatomical Gift Act, C.R.S. §12-34-101, et seq., will ensure that families or legal representatives of all eligible patients are offered the option of organ and/or tissue donation.

Scope:
View the UCHHealth Policy Scope Statement to see where this policy applies.

Table of Contents
I. General Information.......................................................................................................................... 1
II. Procedure........................................................................................................................................ 2

Policy Details:
I. General Information
   A. Patient’s and/or legal surrogate decision maker’s (LSDM) wishes regarding organ and tissue donation will be honored whenever possible. All staff will support the decision of the patient and/or LSDM to accept or decline the option to donate.
   B. The recovery of organs/tissues shall be carried out only when it is clinically, ethically and legally appropriate.
   C. Donor Alliance (DA) is the designated Organ and Tissue Procurement organization for the State of Colorado.
   D. Rocky Mountain Lions Eye Bank (RMLEB) is the designated eye recovery agency for the State of Colorado.
   E. The Donor Information Line (DIL), as the designated referral service, performs eligibility screening and notifies both DA and RMLEB of eligible donors. UCHHealth staff will notify DIL of all patient deaths or "imminent deaths". Contact DIL at 1-800-448-4644.
   F. It is the responsibility of DA and/or RMLEB to determine initial medical suitability of potential donors before the family is approached regarding the option of donation.
**UCHealth**

**Organ and Tissue Donation**

G. The Coroner’s office will be notified on reportable cases for clearance. Discussion about the release for organ and/or tissue donation will be coordinated by the recovery agencies.

II. Procedure

A. Referral (Notification)
   1. Call the DIL in any of the following situations:
      a. Within one hour of any patient death, including newborns.
      b. Within one hour of a patient meeting “clinical triggers” or “imminent death” criteria. A “Clinical Trigger” is defined as:
         i. A patient on a ventilator with a Glasgow Coma Scale equal to or less than 5 (in the absence of paralytics, sedation, or hypothermia protocol).
         ii. Prior to withdrawal of end-of-life care (withdrawal of mechanical or pharmacological support), the initiation of Brain Death Testing, end-of-life family meeting and if the family inquires about donation.

B. The DIL will be contacted to screen all potential donors for eligibility for donation prior to approaching the patient’s family/LSDM.
   1. Notification may be made by any clinical staff.
   2. The DIL will notify staff if the patient is on the Colorado Donor Registry.
   3. The DIL, in collaboration with the appropriate recovery agencies, will conduct appropriate screening in order to determine the suitability of any anatomical gift. This screening will occur prior to approaching the patient’s family to inform them about donation options.
   4. If the patient does not meet medical criteria for donation, the family should not be approached.
   5. Notification and eligibility will be documented in the Electronic Health Record (EHR).

C. Approach/Authorization
   1. Organ Donor (Brain Dead and Donation After Circulatory Death (DCD))
      a. Only DA coordinators, in collaboration with UCHealth physicians and the healthcare team, if needed, may approach a patient’s family/legal representative for potential organ donation.
      b. UCHealth staff will NOT approach for authorization or advise families/LSDM of the patient’s registry status. Only DA staff may obtain authorization.
      c. Brain Dead Patients – In general, the family/LSDM should only be approached for organ donation after the declaration of brain death by a physician. ([Determination of Death by Neurologic Criteria Brain Death for Adults](https://www.colorado.gov/pacific/sites/default/files.Toolbar_Determination_of_Death_by_Neurologic_Criteria_Brain_Death_for_Adults.pdf)) In cases where there is a grave prognosis in which a family/LSDM brings up organ donation and requests information, DA may provide information in collaboration with the attending physician.
   2. Tissue and Eye Donor
      a. UCHealth staff that has been trained as Designated Requestors may approach families/LSDM of potential tissue donors. Designated tissue requestors are trained Chaplains, and Decedent Affairs Liaisons. MDs, Charge RNs, Nursing House Supervisors are included in Colorado Springs.
         i. Colorado Donor Registry – If the patient is registered as a donor in the Colorado Donor Registry and he/she is eligible to be a tissue donor, the recovery agencies will contact the
donor’s next of kin and explain the donation process. A listing in the Colorado Donor Registry is a legal consent for donation and the next-of-kin (NOK) should not be approached with the option of making a donation. The Designated Requestor will notify the family on registry status and explain that a phone call will come from the recovery agency. Please obtain the family’s contact phone number.

ii. If the patient is not listed in the Colorado Donor Registry and the patient is eligible to donate, LSDM retains the right to make the decision concerning donation. A Designated Requestor or recovery agency must approach the family/legal representative of the patient.

iii. Authorization for Tissue/Eye donation must be signed by the appropriate authorizing person(s) (Authorization for Donation of Anatomical Gift Form).

iv. Notify the DIL of the family/LSDM decision. Does not apply to patients who are on the registry.

D. Authorization for Donation of Anatomical Gifts (Organ/Tissue Donation – when patient is not on a Donor Registry)

1. Authorization for organ and tissue donation is obtained after pronouncement of death or declaration of brain death. Exception: In patients eligible for DCD, the approach will occur prior to death, but following the decision of extubation/end-of-life care.

2. If family/LSDM is not present, consent will be obtained by the recovery agency.

3. A refusal of authorization by a person of the same or higher priority level, as noted below, is binding on those of lower priority level. A donation will not be accepted if there is an objection from a member(s) of a higher priority class.

   a. An anatomical gift of a donor’s body or part may be made during the life of the donor for the purpose of transplantation, therapy, research or education by:
      i. The adult donor;
      ii. The minor donor if the donor is an emancipated minor or at least 16 years old;
      iii. An agent of the donor, unless the power of attorney for health care or other record prohibits the agent from making an anatomical gift;
      iv. A parent of the donor, if the donor is an un-emancipated minor even if the patient is on the donor registry; or,
         1. A pregnant minor can consent for treatment for the fetus, since she is the parent (C.R.S. §12-34-109).

   b. An anatomical gift of a donor’s body or part may be made after the death of the donor for the purposes of transplantation, therapy, research, or education by the following people, who are listed in order of priority. If there is more than one member of a class listed below, an anatomical gift may be made by a member of the class unless that member or a person of an organization to whom the gift will be made knows of an objection by another member of the same class. If an objection is known, the gift may only be made if a majority of the
members of the same class who are reasonable available to agree to it (C.R.S §12-34-109).

i. Medical Power of Attorney/Agent;

ii. Spouse of the decedent;

iii. A person who is designated by the decedent as a designated beneficiary in a Designated Beneficiary Agreement, with the right to be an agent to make, revoke or object to anatomical gifts of the decedent;

iv. Adult children of the decedent;

v. Parents of the decedent;

vi. Adult siblings of the decedent;

vii. Adult grandchildren of the decedent;

viii. Grandparents of the decedent;

ix. An adult who exhibited special care and concern for the decedent;

x. Persons acting as the guardians of the decedent at the time of death; and,

xi. Person authorized to arrange for final disposition of the body.

c. A person may make an anatomical gift:

i. By authorizing a statement or symbol indicating that the donor has made an anatomical gift to be imprinted on the donor’s drivers’ license or identification card. (If the drivers’ license or identification card is revoked, suspended, expired, or cancelled, the gift is not invalidated);

ii. In a will (the will does not have to be probated before the gift/donation takes effect. If the will is invalidated, the anatomical gift is not invalidated);

iii. During a terminal illness or injury of the donor, by any form of communication addressed to at least two adults, one of whom is a disinterested witness; or,

iv. By making a gift by a donor card or other record signed by the donor indicating that the donor has made an anatomical gift and is included on a donor registry (C.R.S. §12-34-105)

4. Coroner Cases – If a death falls under the coroner’s jurisdiction, the coroner must grant permission for organ or tissue donation before any organs or tissues are removed. DA/RMLEB will contact the coroner for approval.

E. Care of the Donor

1. Organ Donor

a. Once the donor has been accepted and the consent is obtained, DA/RMLEB will facilitate and be responsible for evaluating and screening potential deceased donors and the organ and/or tissue recovery process.

b. DA will be responsible for the medical and behavioral history for each potential deceased donor.

c. DA coordinator will oversee the medical management of the brain dead donor after authorization has been obtained, or family notification of registry status, in order to maintain organ viability.

d. DA coordinator will coordinate the recovery plan between the OR staff, the recovery team and possible transfer to the Donor Alliance Recovery Center.

e. Hospital staff notifies Patient Placement and Hospital Manager of time of declaration of death by neurologic criteria.
f. In Epic the patient discharge disposition is “expired readmit as organ donor” for the chart/account maintenance.

2. Bone, Skin or Other Tissue Donor
   a. A nurse will facilitate recovery preparation.
   b. Place the body in the refrigerated morgue as soon as possible after death.

3. Eye Donor
   a. Irrigate eyes with Normal Saline solution.
   b. Close eyes (avoid using tape).
   c. Cover the closed eyes with saline-soaked gauze.
   d. Elevate the head 30 degrees.
   e. Place the body in the refrigerated morgue as soon as possible after death.

F. Documentation on Expiration Record (Electronic Health Record)
   1. Coroner notification
   2. Donor Information Line
      a. Date and time of notification
      b. Referral number
      c. Eligibility to donate
      d. Donor Registry status
   3. If the patient is eligible to donate, document the family’s/LSDM decision and the name of the person who approached the family (Designated Requestor or Recovery Agency).
   4. Document if the patient is listed in the Colorado Donor Registry. DIL will provide documentation of the patient’s status for the medical record (Registry Verification form).

G. Disposition
   1. Refer to the Death Declaration and Post Mortem Care policy.
   2. Patients may be transferred to the Donor Alliance Recovery Center (DARC) for organ recovery, if the following criteria is met:
      a. Patient has been declared brain dead.
      b. Family must give authorization for transport to the DARC.
      c. Decedent must be stable for transport.
      i. The potential donor must be an adult over 18 years of age.

H. Reimbursement
   1. All medical expenses related to donor maintenance and the recovery of organ(s), and/or tissue(s) after the pronouncement of cardiac or brain death, are the responsibility of DA and/or RMLEB.
   2. DA will be billed from Brain Death Declaration through recovery of organs. In the case of DCD, DA will be billed from time of family signed consent through recovery of organs.
   3. No costs related to the recovery of organs and tissues will be passed on to the family or decedent’s estate.
   4. All medical expenses prior to the declaration of death, including but not limited to, funeral expenses, remain the responsibility of the donor’s family.

I. Education
   1. DA/RMLEB develops and provides Designated Requestor classes ongoing based on need.
   2. DA/RMLEB will assist in the education of UCHealth staff as needed based on monitored activities, trends, issues and policy changes.
3. New clinical employees receive an overview on organ/tissue/eye donation role and policies.

J. Monitoring
1. The Health Information Management (HIM) department will provide the DA liaison with a list of all UCHealth deaths every month in order to facilitate chart review.
2. The DA liaison will monitor UCHealth death records at least once a month for compliance with Federal Regulations including:
   a. Referral to DIL upon death; and,
   b. Appropriate requester, if applicable.
3. The confidentiality of these patient records shall be maintained.
4. The DA liaison, in collaboration with UCHealth System Quality review outliers, will provide feedback to the appropriate leaders and staff for follow-up and re-education, as indicated.
5. DA or RMLEB, in collaboration with UCHealth, provides additional staff education as needed based on trends.

Definitions:

Brain Death (Death by Neurological Criteria): The complete and irreversible cessation of all functions of the entire brain including the brainstem. Brain death is a prerequisite for organ donation.

Circulatory Death: Cessation of cardiac function (asystole). This is a prerequisite for tissue and/or non-heart beating organ donation (see MH’s Donation after Circulatory Death policy).

Designated Requester: UCHealth employees trained to discuss tissue/eye donation options with the family and to obtain authorization for such donation. Training stresses the sensitivity and discretion in family interactions and acceptance and respect of each individual’s circumstances, values and beliefs. DA, in collaboration with RMLEB, provides Designated Requestor Training to selected staff.

Healthcare Professional: Any individual who is licensed and/or qualified to practice a health care profession (for example, physician, nurse, social worker, clinical psychologist, pharmacist, PT/OT/ST, or respiratory therapist) and is engaged in the provision of care, treatment, or services as defined by their job description.

Healthcare Provider: A credentialed or licensed practitioner who has ordering privileges and prescribing authority.

Imminent Death: Meeting any of the following criteria: a ventilated patient who has a Glasgow Coma Scale (GCS) less than or equal to 5 (in the absence of paralytics, sedation or hypothermia); loss of two or more brain stem functions; physician evaluation for brain death or pending withdrawal of mechanical/pharmacological support, based on the family’s decision.

Timely Referral: Notification to the DIL within one (1) hour after a patient meets the criteria for “imminent death” or family asks about donation. Timely referral of potential organ donors allows time for an onsite evaluation. A timely referral for a potential tissue donation is notification to the DIL within one (1) hour of the patient’s death.

References:
1. CMS, Medicare Conditions of Participation, 42 CFR-Part 482 (LOE VII)
5. DHHS, The Final Rule, 42 CFR Part 121 (LOE VII)
Introduction:

This policy outlines which UCH-MHS dba Memorial Hospital (MH) staff can pronounce death and provides guidelines for post mortem care.

Scope:

This policy applies to MH clinical staff and Licensed Independent Practitioners (LIP).

Policy Details:

I. Pronouncement of Death

   A. Only a physician can pronounce death.

   B. The physician present at the time of death is responsible for assessment and documentation of cessation of life and pronouncing death.

   C. The attending physician is responsible for signing the death certificate in all cases except:

      1. When a patient’s demise occurs in an intensive care unit under the direction of an Intensivist, who then becomes responsible for the death certificate signature.

II. Bereavement

   A. Whenever possible, provide adequate time immediately after the patient’s death for the family and significant others to grieve.
B. Staff should balance adherence to these guidelines with providing compassionate and respectful care to the deceased’s family.

C. Chaplain support should be offered to the bereaved, regardless of religious affiliation or the absence thereof.

D. Grief and bereavement support materials are available through the Spiritual Care Department. (Grief Support Packet)

E. Bereavement Sign

1. A bereavement sign (Fallen Leaf – Adult or Butterfly – Pediatrics) placed on the door to a patient’s room indicates a dying patient or death.

F. Hand/Foot Mold Kits

1. Molds of the hand/foot may be obtained when death is imminent or after death has occurred. (Note: if the death may be a Coroner’s Case, the coroner must give consent for prints to be made)
2. Place patient ID sticker on both box top and box bottom of the hand/foot mold kit.

III. Visitation/View of Body

A. Except at the discretion of a Nursing Director, Nursing House Supervisor (MHS) or staff chaplain, no viewings should take place in MH morgues.

B. Family visitation with the deceased should take place in the patient’s room or at the funeral home.

1. In general, it is permissible to keep the deceased’s body in the patient’s room or Emergency Department (ED) consultation room for up to four hours in order to give the family and significant others time to grieve.
2. If the bed is needed for another patient, or if the body presents any kind of hazard to staff, patients or visitors, the body should be removed to the morgue as soon as possible, or as required by law enforcement or the medical examiner.
3. In general, once a body leaves the unit, for any reason, it should not return to the unit.
4. However, if a patient dies in an area that has no suitable place for viewing (e.g., Operating Room, Invasive Cardiology), then the body may be taken back to the floor it came from or it may be taken to the ED consultation room, if space is available.

C. Once the body has been taken to the morgue, if a viewing is necessary for identification of the body, notify the staff chaplain or NHS for assistance.

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1. No more than three family members or significant others may view the body for a brief period of time for the purpose of identification.
2. If the family wishes to view a body after it has left the unit, they may make arrangements with the selected funeral home.

D. If the deceased is in a semi-private room, reasonable efforts should be made to move either the roommate or the deceased in order to allow the family and significant others time to grieve.

1. If no other accommodations can be made, the body should be taken to the morgue after one hour.

E. Law enforcement or related fields may be allowed access to the morgue and, when necessary, bring family into the morgue solely for the purpose of identifying the deceased.

F. If the deceased is an infant (term or premature) and the mother is a patient, the baby may remain in the mother’s room for up to 24 hours.

1. For perinatal deaths, refer to MH policy titled, Perinatal Death Including Lethal Anomaly and Non-Viable Live Birth.

IV. Identification of the body

A. A patient identification band should be on the wrist or ankle of the deceased.

B. Identification of babies and fetuses will take place as the situation dictates.

1. An outside label should be in place with an extra label indicating “infant”.

C. A patient identification sticker should be placed on the outside of the body bag.

D. All possible steps should be taken to identify the “Doe” patient.

1. When the legal name of the patient has been verified, the body tag must identify the patient with the legal name prior to being brought to the morgue.

V. Post Mortem Care

A. Refer to Lippincott for post mortem care procedures

VI. Documentation (See Death Checklist attached)

A. The nurse caring for the patient at the time of death is responsible for documentation of the death in the electronic record.

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B. Complete and document the following information in the electronic medical record:

1. Adult Deaths
   a) Complete the “Death Documentation” and “End of Life” Doc Flowsheet.

2. Perinatal Deaths
   a) Complete the “Perinatal Loss” Doc Flowsheet

3. Document the following:
   a) Date and time of death
   b) Physician who pronounced the patient
   c) Attending physician notification
   d) Coroner notification (if appropriate)
      i. Include date, time and any coroner instructions
      ii. El Paso County Coroner (719) 390-2450
      iii. If the incident occurred in another county, the appropriate coroner should be notified
   e) In Comments – Document any belongings sent to the morgue with the patient or released to the family.
   f) Family notification
      i. Name of the primary family member contacted
      ii. Phone number
      iii. Relationship to deceased
   g) Medical Examiner (coroner) – if the death is a reportable case (see below) the medical examiner may request or deny an autopsy.
   h) MH Spiritual Care notification
      i. Family and significant others of the deceased should be offered spiritual and emotional support from a staff chaplain.
      ii. The patient’s personal clergy may be notified, if requested by the family.
   i) Donor Information Line (DIL) 1-800-448-4644
      i. Determine eligibility for organ/eye/tissue donation.
      ii. Refer to MH policy titled, Organ and Tissue Donation, if the patient is eligible for donation
   j) Other notifications
      i. Notification of other physicians involved in the patient’s care; attending and consulting.
      ii. Patient Placement is called on all deaths, including perinatal deaths (loss of pregnancy, fetal demise and stillborn deaths)
      iii. Notify the NHS of all deaths, including perinatal deaths (loss of pregnancy, fetal demise and stillborn death)

4. Disposition Tab
   a) Name and phone number of the funeral home, if available. Do not contact the funeral home. Patient Placement will do this once all tasks are completed
      i. If no funeral home is selected, give the family the phone number for Patient Placement and instruct them to call with the funeral home information.

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b) Date and time the body left the department
c) Select disposition to morgue; unless funeral home direct pickup from clinical unit
d) Valuables and belongings disposition

VII. Autopsy

A. May be requested by the medical examiner, family or attending physician. Refer to MH policy titled Autopsy.

VIII. Coroner Case--: Criteria Requiring Reporting to the Coroner

A. The duration of time between the event and the death is not relevant. If there is reason to believe that a death occurred from a reportable cause (e.g., an accident or poisoning three months ago, the complications from which likely caused the death), the coroner should be consulted. If there is any question about whether a death is a coroner’s case or not, contact the coroner’s office.

1. Deaths occurring within 24 hours after admission.
2. Deaths on arrivals at MH.
3. Deaths resulting from any type of trauma, including, but not limited to:
   a) Automobile
   b) Motorcycle
   c) Bicycle
   d) Pedestrian
   e) Bus
   f) Train
   g) Aircraft
   h) Any other type of accident
   i) Falls
   j) Burns and/or scalds
   k) Gunshot wounds
   l) Stabbings and/or cuttings
   m) Blows and/or beatings
   n) Crushing injuries
   o) Drowning
   p) Explosions
   q) Exposure – hypothermia or hyperthermia
   r) Sunstroke
   s) Hanging and/or strangulation
   t) Suffocation
   u) Carbon monoxide poisoning
   v) Animal and/or insect bites
   w) Bone fractures
   x) Unexplained trauma or poisoning from thermal, chemical or radiation injury
   y) Suspected or proven drug overdose
   z) Criminal abortion, including any situation where the abortion may have been self-induced

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aa) Therapeutic complications
bb) Industrial Accident
cc) If in doubt, consult with the coroner
5. Deaths from external violence.
6. Deaths from unexplained causes.
7. Deaths from known or suspected suicides.
8. Deaths that occurred under suspicious circumstances.
9. Deaths that occurred when no physician was in attendance, or where, though in attendance, the physician is unable to certify the cause of death or where the attending physician has not been in actual attendance within thirty (30) days prior to death.
10. Deaths from a disease which may be hazardous or contagious or which may constitute a threat to health of the general public.
11. Deaths that occur while in custody of law enforcement officials or while the person was incarcerated in a public institution.
12. Deaths that were sudden and happened to a person who was in good health.
13. Deaths from an industrial accident.
14. Deaths that could possibly have occurred due to abuse or neglect (child, adult or elder).
15. Death due to domestic violence.
16. Operating room deaths and deaths that occur during a medical procedure.

B. The coroner’s office is the only authority on whether a case is or is not a coroner’s case. Even if another agency “signs off” e.g., law enforcement, the coroner must still be consulted if there is any reason to believe it is a coroner’s case.

C. Reportable cases must always be reported to the El Paso County coroner’s office regardless of where the injury or death occurs. The El Paso County coroner’s office will determine jurisdiction and contact other agencies as needed.

D. Process

1. If a patient meets the above criteria, nursing will notify the coroner and provide the following information about the deceased:
   a) Name
   b) Age
   c) Birth date
   d) Attending physician
   e) Diagnosis or tentative diagnosis
   f) Time of death
   g) Funeral home
2. Notify Health Information Management (HIM) to provide a copy of the chart from the electronic medical record.
   a) Nursing will place the chart copy in the morgue procedure room.
   b) Coroner’s cases do not require consent for autopsy.
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- The coroner will direct when the body should be transported to the coroner’s office.
- If it is a coroner’s case or autopsy, leave all lines, tubes, drains and dressing in place unless otherwise instructed by the coroner.
  - Lines/tubes may be clamped or cut off.
  - If any lines/tubes are accidentally dislodged, make note of this and pin the tubes to the sheet that covers the patient.
- Clothing or other personal effects including any safety equipment like helmets should be secured and provided to the coroner.
- The coroner must give consent:
  - For lines or tubes to be removed after death
  - To bathe patient
  - Memory making
    - If the family wishes hand or foot prints/molds, locks of hair, or similar remembrances the coroner’s office must give permission for such activities. Consult the coroner as needed.
  - If parents or other loved ones of a deceased patient (adult or pediatric) wish to hold or touch the body and are being prevented from doing so due to law enforcement/coroner concerns, contact the coroner as soon as possible. Any such contact must be supervised by a staff member after permission is secured from the coroner.

IX. Morgue Procedures and Transport

A. The morgue is locked. Contact Security (through PBS) in order to gain access to the morgue at MH Central or MH North.

B. Transport of Infants or Neonates to the Morgue

1. The deceased infant/neonate should be placed in an infant body bag or leak-proof plastic bag, and then swaddled.
2. Transport the body to the morgue and place it in the designated baby area.

C. Transport of Adults and Children to the Morgue

1. The transport cart is located in the morgue.
2. Select a clean cart. Clean carts are labeled with a “Clean Cart” magnetic sign. Remove the sign and place the sign on the underside of the cart via magnetic strips. If there are no clean carts available, contact:
   - MH Central – The hours for histology are posted at the morgue. Environmental Services is available 24 hours, 7 days a week.
   - MH North – Environmental Services at extension 4-1303; 24 hours a day, 7 days a week.
3. The deceased should be placed in the refrigerator unit, positioned face-up.

D. Management of the deceased patient’s belongings (See Patient and Visitor Belongings – Lost and Found)
E. Body Pickup from Morgue

1. In general the body may be picked up by one of the following, a funeral home, Coroner’s Office, Donor Alliance
2. The representative picking up the body will notify Patient Placement of its anticipated arrival time.
3. Patient Placement will page Security to notify them of a pending body pickup.
4. Security will meet the representative to unlock the morgue for body pickup.
5. The representative and the Security Officer present will be responsible for confirmation of the correct body for pick up, verify belongings sign the Death Body Tracking form and sign the belongings form as appropriate.

F. Disposition of body directly from Unit to Outside Agency

1. The body may be released to the Coroner or funeral home directly from the unit.
2. Personnel from the funeral home or Coroner’s Office must be escorted by Security.
3. The Death Form will still be completed.
4. Contact Patient Placement for assistance, if needed.

X. Hazardous Conditions - Radiation Safety Concerns

A. Identify a known or suspected presence of radioactive material and notify the radiation safety officer to obtain further instructions.

B. Document in EPIC.

XI. Deaths Reportable to the Health Department

A. If a patient dies from an unexplained cause or under suspicious circumstances, MH may be required to report the death to the Health Department.

B. Notify the Nursing House Supervisor for further direction.

C. Complete an electronic even report at time of death which will be reviewed to determine if the Health Department should be notified.

XII. Donation of Body to Medical Science

A. If family requests information and/or instructions regarding the option of full body donation, contact Spiritual Care who can provide a list.
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XIII. Active-Duty Member of Military Service at the Time of Death

A. Notify the commanding officer of the death and he/she should then provide information regarding release of the remains to the contract mortuary for preparation and shipment.

B. If the military does not assume responsibility for the disposition of remains, then the deceased’s next of kin will have to give permission to release the remains for preparation and disposition.

XIV. Patient Placement Responsibilities

A. Body Release

1. Patient Placement will not release the patient without the family and/or coroner’s authorization.
2. Families are encouraged to select a funeral home within 72 hours and to be in touch with Patient Placement regarding plans.
3. If a funeral home calls or arrives to pick up the deceased and MH has not been notified by the family as to what funeral home the deceased will be sent, Patient Placement will verify funeral home selection home the family.
4. Notify the funeral home when an autopsy, and/or eye, tissue/organ recovery is pending.
5. If the family of the deceased has failed to make or appoint another person or funeral home to make final arrangements for the disposition of the body within five days after receiving notice of the death or within ten days after the death, whichever is earlier, Patient Placement will contact the public administrator (refer to Unclaimed Bodies below)
6. If the morgue is at capacity, Patient Placement will contact funeral homes with pending pick up and contact families who are pending funeral home decision. If the morgue remains at capacity the coroner may be contacted to assist with storage of bodies at the coroner’s office until disposition has been determined.

B. Unclaimed Bodies

1. If unable to locate family/significant others for notification of the patient’s death, clinical staff will document this information in the expiration record. Medical Social Work and staff chaplain in collaboration with Patient Placement will make a reasonable effort for 24 hours post expiration to locate family/significant others. This information will be documented in the medical record.
2. When there are no known relatives, friends, or family who can be contacted to claim the body, Patient Placement will contact the public administrator.
3. If the family refuses because they do not have the resources: a) If the patient has Medicaid, the family may call the caseworker or Medicaid Funeral Financial Assistance for the availability of funds for a simple cremation.

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b) The body may be considered abandoned if no family or friends can be found or if they refuse to make other arrangements.
c) Call the public administrator for the city/county for details.
d) This should not be offered as an alternative to family or friends, but rather listed here for informational purposes.

XV. Organ/Tissue Recovery and Patient Placement Role

A. The recovery agency will contact Patient Placement upon arrival and at completion of recovery for organ, tissue and eye recoveries. If organ or tissue recovery does not occur on site see “Body Release” section.

Applicable Joint Commission Chapter(s):
Provision of Care Standard (PC)

Related Resources and/or Policies:
Autopsy
DNAR Guidelines – Making Decisions with Patient, Family and/or Surrogate Decision Maker
Patient and Visitor Belongings – Lost and Found
Perinatal Death Including Lethal Anomaly and Non-Viable Live Birth
Organ and Tissue Donation

Definitions:
N/A

References:
Centers for Medicare & Medicaid Services (CMS) (LOE VII)

Conditions Reportable by All Physicians and Health Care Providers in Colorado, April 2004 (LOE VII)

Lippincott Procedures (online) (LOE VII)

C.R.S. § 30-10-606 (LOE VII)
C.R.S. § 15-19-106 (LOE VII)
C.R.S. § 19-3-304 (LOE VII)
C.R.S. § 12-36-135 (LOE VII)

http://www.coloradocoroners.org/office.htm (LOE VII)

Applicable Joint Commission Chapter(s):
Provision of Care Standard (PC)
Introduction:
The policy states the procedure for determining brain death. Brain death is determined by a designated healthcare provider in the Intensive Care Unit (ICU). At University of Colorado Hospital, the designated healthcare provider is the attending neurosurgeon, neurologist, or intensivist. At Poudre Valley Hospital and Medical Center of the Rockies, the designated healthcare providers are attending physicians familiar with the brain death exam. At Memorial Health System, the designated healthcare provider is the attending neurosurgeon, neurologist, or critical care intensivist. The determination of brain death must be made in accordance with accepted medical standards and with Colorado Revised Statutes, § 12-36-136.

- Arrangements should be made to inform and include the patient’s healthcare decision maker and family in the processes used to determine neurologic death. Involvement of the patient’s healthcare decision maker and family should occur PRIOR to initiation of neurologic death examinations.
- Legal documentation of death is the time at which death by neurologic exam (brain death) is declared by the designated healthcare provider. Once death by neurologic criteria has been declared, and the patient has been ruled out as a potential organ donor, medical - supportive devices/therapies will be removed in conjunction with supportive end of life care.

Scope:
View the UCH Health Policy Scope Statement to see where this policy applies.

Policy Details:
I. Absence of Reversible Coma
   A. Assurance of reversible causes of coma, including:
      1. Recovery from hypothermia; defined as core temperature greater than 36 degrees Celsius.
      2. Drug intoxication, neuromuscular blockade, or poisoning.
      3. Metabolic or endocrine disturbances.
   B. Radiologic evidence of non-survivable brain injury is present.
II. Criteria for Determining Brain Death
   A. The examining physician as defined in this policy is not required to perform every aspect of the neurological examination in either the American Medical Association or the American Academy of Neurology guidelines, and the healthcare provider’s clinical judgment will play a role in each individual case. (Reference Appendix A).
      1. Unresponsiveness
      2. Cerebrally modulated motor responses are absent. Motor response is absent after application of painful stimuli. Spinal reflexes may be present. Seizures or decorticate/decerebrate posturing rule out a diagnosis of brain death.
      3. Absence of the following brainstem reflexes:
         a. Pupillary reflexes are absent to light
         b. Corneal reflexes
         c. Cough reflex in response to pharyngeal and deep endotracheal suctioning
         d. Oculovestibular Reflex (see cold caloric test)
         e. Respiratory reflex (see apnea test)

III. Procedure for Apnea Diagnostic Test
     Lippincott Procedure: Brain Death Determination

IV. Procedure for Cold Caloric Diagnostic Test. This test is performed by a designated healthcare provider only.
    Lippincott Procedure: Brain Death Determination

V. Confirmatory Tests performed by a designated physician as defined in this policy.
   A. The following tests are not required. These are optional and may be used in conjunction with a clinical exam to support the diagnosis of brain death. They are highly recommended in any case where the etiology of a coma is unclear or the patient is too hemodynamically unstable to perform an apnea test.
      1. Cerebral arteriography
      2. Radionuclotide Scanning
      3. Electroencephalogram (EEG)
      4. Transcranial Doppler Ultrasonography (TCD)
      5. Additional supportive information with regard to intracranial pressure monitoring: A diagnosis of brain death is supported in ancillary fashion when a patient’s intracranial pressure (ICP) is within 10mmHg of the patient’s mean arterial pressure (MAP).

VI. Documented by designated Healthcare Provider:
   A. Etiology and irreversibility of condition
   B. Clinical observations including prerequisite criteria and apnea testing results
   C. Date and time of Death
   D. Confirmatory testing methodology and results
   E. Special Consideration: Pediatric patients are required to be evaluated by pediatric attending neurologist or neurosurgeon

Definitions:
Brain death: The complete and irreversible cessation of all functions of the entire brain including the brainstem.
Brainstem reflexes: cranial nerve function is an indicator of brainstem function; reflexes assessed are: pupillary reaction to light, corneal reflex, cough reflex, gag reflex, oculocephalic reflex, oculovestibular reflex, and respiratory reflex.

The current version of this policy can be viewed on The Source. Printing is discouraged.
**Coma:** state of unarousable, unresponsiveness. Sleep-wake cycles are absent and respiratory patterns are variable and often abnormal.

**Decision Making Capacity (DMC):** The individual has the ability to provide informed consent to or refusal of medical treatment.

**Healthcare Decision Maker:** A patient who retains DMC, or the person authorized to make medical treatment decisions on behalf of an adult patient who does not have DMC. This may include an agent under a Durable Medical Power of Attorney, or proxy.

**Healthcare Provider:** A credentialed or licensed practitioner who has ordering privileges and prescribing authority. **For this policy, this definition extends only to an Attending Physician.**

**Spinal Reflexes:** Movements when a sensory stimulus arises from receptors in the muscle, joints, and skin, resulting in a motor response that is entirely contained within the spinal cord.

**References:**


Burkle, C, Sharp, R, Wijdicks, E. (2014) 'Why brain death is considered death and why there should be no confusion'. *Neurology* 83,16: 1464-1469. (LOE 8)


Introduction:
The purpose of this policy is to outline the procedure for the recovery and donation of human organs after death due to cessation of circulation in patients who have not met brain death criteria; there is an independent decision to forego further life-prolonging treatments and donation of organs determined prior to donor’s death.

Scope:
View the [UCHealth Policy Scope Statement](#) to see where this policy applies.

Policy Details:
   A. The Healthcare Decision Maker for the purpose of making an anatomical gift before the donor’s death is the person designated in the following order of priority:
      1. The adult donor;
      2. A minor donor who is emancipated or a minor donor who is at least 16 years old;
      3. The health care agent of the donor unless the power of attorney for health care or other record prohibits the agent from making an anatomical gift;
      4. A parent of the donor if the donor is an un-emancipated minor;
      5. The donor’s guardian.

II. Discussion of care prior to donation:
   A. Before any discussion regarding donation after circulatory death, there should be a discussion between the patient, and/or health care decision maker for donation of anatomical gift, the attending physician and health care team to discuss the patient’s plan of care, prognosis and goals. This may include a discussion about withdrawal of life-sustaining treatment and a Do Not Attempt Resuscitation order.
   B. The decision to withdraw life support, while maintaining palliative medical therapy, should be made prior to and independent of any decision relative to organ donation.
III. Potential Donation after Circulatory Death (DCD) Donor Evaluation:
   A. The Donor Information Line (303-321-0060) is notified as soon as the Healthcare Decision Maker begins to consider withdrawal of life sustaining treatment, the Glasgow Coma Scale is < or = 5, or the family has questions about donation.
   B. The assessment for donation after circulatory death (DCD) candidate suitability should be conducted in collaboration with Donor Alliance and the patient’s primary health care team.
   C. A patient who has a non-recoverable and irreversible neurological injury or chronic terminal illness resulting in ventilator dependency but not fulfilling brain death criteria may be a suitable candidate for DCD.
   D. A patient with chronic terminal illness or end stage disease who retains decision making capacity (DMC) and is on life support may choose to be evaluated by Donor Alliance for DCD.
   E. Donor Alliance will complete an assessment to determine if there is a reasonable chance of death within the period allowed for organ recovery after the withdrawal of life sustaining treatment.

IV. Consent/Approval
   A. Donor Alliance and/or a physician must receive authorization from the Healthcare Decision Maker for any procedures or drugs administered in preparation for DCD
   B. If a patient with a chronic terminal illness or end stage disease requests evaluation by Donor Alliance for DCD, the attending physician and/or consulting physician must verify that the patient is mentally competent to make the decision to withdrawal of life sustaining treatment.
   C. If the patient is a potential coroner case, clearance from medical examiner/coroner must be obtained prior to DCD.

V. Withdrawal of Life Sustaining Medical Treatment
   A. Paralytics must be discontinued and allowed to clear prior to withdrawal of life sustaining treatment.
   B. All other medications and care will be continued and/or discontinued in accordance with physician orders to adequately treat the patient at end of life.
   C. Prior to withdrawal of life sustaining medical treatment a timeout is required to review:
      1. Patient identification;
      2. The process for withdrawing life-sustaining treatment or ventilated support;
      3. Roles and responsibilities of the primary patient care team, the Organ Procurement Organization (OPO) team, and the organ recovery team; and
      4. The plan for continued patient care in the event that death does not occur within 60 minutes after withdrawal of life sustaining medical treatment. This plan should include logistics and provisions for continued end of life care, including immediate notification of the family/Healthcare Decision Maker.
   D. Organ recovery surgeons may not be present for the withdrawal of life sustaining measures. Donor Alliance staff may be present in the operating room to support the family and to record hemodynamic information post extubation. Donor Alliance staff will not participate in the guidance or administration of palliative care, or the declaration of death.
   E. Family members and other interested parties, as approved by the Healthcare Decision Maker, may be given the opportunity to be present in the operating room during withdrawal of life sustaining treatment and during the period between withdrawal of support and circulatory death.
Life sustaining measures (e.g. endotracheal support, blood pressure support medications) are removed in the operating room as per the attached algorithm in Appendix A.

VI. Pronouncement of Death
A. The physician that is authorized to declare death must not be a member of the Donor Alliance or organ recovery team.
B. The method of declaring death must comply in all respects with the legal definition of circulatory death by an irreversible cessation of circulatory and respiratory functions for two minutes before the pronouncement of death.

VII. Organ Recovery
A. Organ recovery may be initiated immediately on pronouncement of death.

VIII. Financial Considerations
A. Donor Alliance shall ensure that no donation related charges are passed to the donor family.

Definitions:
Circulatory Death: The irreversible cessation of circulation and respiration as diagnosed by a pulse of zero by arterial catheter or no Doppler impulse measured over a major artery (2) that the patient is apneic, and 3) the patient is unresponsive to verbal stimuli. Criteria 1-3 must be met for a period of two minutes in order to declare death.
Donation after circulatory death (DCD): A procedure that entails the recovery of organs after death due to cessation of circulation in patients who have not met brain death criteria and in which there was an independent decision to forego further life-prolonging treatments.
Decision Making Capacity (DMC): The individual has the ability to provide informed consent or refusal of medical treatment.
Organ Procurement Organization (OPO): Non-profit organization that is responsible for the evaluation and procurement of deceased donor organs for organ transplantation (i.e. Donor Alliance).
Health Care Decision Maker for donation of anatomical gift: 1) A patient who retains decision making capacity or 2) the person authorized to make medical treatment decisions on behalf of an adult patient who does not have decision making capacity (DMC). This may include an agent under a Durable Medical Power of Attorney, family or proxy. A Healthcare Decision Maker who meets the criteria set forth in Section I is authorized to make an anatomical gift.
Healthcare Provider: A credentialed or licensed practitioner who has ordering privileges and prescribing authority.
ICU team: Team of health care providers that care for the patient during life and during withdrawal of care. Essential members of the team include primary attending or designated resident MD, primary ICU nurse and respiratory therapist.
Recovery team: Donor Alliance, recovery surgeons, OR nurses and support staff

References:

The current version of this policy can be viewed on The Source. Printing is discouraged.
Pediatric – End of Life: Withdrawal of Life-Sustaining Treatment Guidelines

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<td>Approval Date: 10/10/2015</td>
<td>Resource Owner:</td>
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<td></td>
<td>Director, Inpatient Pediatric Services</td>
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**Introduction:**

This resource describes the effective, compassionate and family focused withdrawal of life-sustaining guidelines, so that pediatric patients can die with comfort and dignity.

**Scope:**

This policy applies to (1) University of Colorado Health (UCHealth)1 and its wholly-owned subsidiaries and affiliates (each, an “Affiliate”), including but not limited to Colorado Health Medical Group, Medical Center of the Rockies, Poudre Valley Hospital, UCH-MHS and University of Colorado Hospital Authority; (2) any other entity or organization in which UCHealth or an Affiliate owns a direct or indirect equity interest greater than 50%; and (3) any hospital or healthcare facility in which UCHealth or an Affiliate either manages or controls the day-to-day operations of the facility (each, a “UCHealth Facility”) (collectively, “UCHealth”). All UCHealth medical staff members, care providers, management and staff, including all Colorado Health Medical Group employees and employees of off-site, provider-based locations, are accountable for adhering to this resource.

**Resource Details:**

1. **General Information**

   A. Prior to discussion with the family, it is important that the healthcare team is aligned in the approach to the family, regarding limitation of treatment/withdrawal of life-sustaining treatment.

   B. A conference will be held with the family and the healthcare team to discuss and determine the plan of care.
C. The goal of the conference will be to guide the family in the transition from “cure to comfort” and to assist the family in determining goals of patient care with an emphasis on providing comfort for the patient.

D. The attending physician will document any family discussions regarding withdrawal of life-sustaining treatment in the patient’s medical record.

E. The conference does not preclude continued conversations with and support of the family.

F. When discussion of withdrawal of life-sustaining treatment occurs with the family, Donor Information Line (DIL) will be contacted. If the patient is a potential candidate for Donation after Circulatory Death (DCD), refer to the “Donation After Circulatory Death” policy, in addition to this resource.

II. Underlying Ethical Considerations

A. Withholding and withdrawing life-sustaining treatment are equivalent. Whether therapy is initiated or continued will be based on the assessment of its benefits versus burdens and preferences of the patient and family.

B. “Double Effect” allows for providing relief of pain or other symptoms with sedatives/analgesia, even when this may have the foreseen (but not intended) consequence of hastening death.


III. Family Preparation

A. Prepare the family for possible scenarios after discontinuation of life-sustaining treatment (e.g., ineffective and irregular respirations, grimacing, prolonged time to expiration). Explain that not every child will die immediately after removal of support.

B. Allow the family to decide who will be present at the bedside at the time of the withdrawal of life-sustaining treatment. Explain to the family that a social worker, attending physician, chaplain and primary nurse will be available to them.

C. Allow the family to participate in the decision as to when support will be withdrawn.

D. Families may be invited to participate in the assessment of their child’s pain and suffering.
E. Encourage the family to hold the patient, if feasible and/or desired before, during, or after life-sustaining treatment is withdrawn.

F. Assure Child Life involvement in preparing siblings and assisting with hand molds or prints. If the patient has the potential to be a coroner’s case, obtain approval for hand molds or prints from the coroner prior to obtaining them.

IV. Spiritual/Cultural Support

A. Clarify with the family what religious and/or cultural rituals are desired during the dying process and after death has occurred.

V. Prior to Withdrawal of Life-Sustaining Treatment

A. The attending physician will write a Do Not Attempt Resuscitation (DNAR) order in the patient’s medical record.

B. The attending physician will document in the patient’s medical record the plan for comfort care and any discussions with the family.

C. All previous orders including routine vital signs, medications, radiographs and laboratory tests will be discontinued.

D. Devices not necessary for comfort, including monitors, blood pressure cuffs and leg compression sleeves will be removed.

E. Visitation will be liberalized in accordance with the family’s wishes, but is still subject to safety and related concerns by clinical staff.

VI. Monitoring/Nursing Cares

A. Management of dyspnea may include pharmacologic and non-pharmacologic maneuvers. Non-pharmacologic maneuvers include:
   1. Repositioning;
   2. Use of a fan to gently blow on the patient’s face.

B. Alarms on the monitor in the patient room (if still needed) will be placed in a mode that allows visualization for medical staff, but not for the family.

C. The bedrail may be lowered and restraints removed to allow family close contact.

VII. Recommended Medication Management (requires a physician order)

A. Neuroleptics (i.e. haloperidol) may be helpful, if the child is experiencing delirium. Haloperidol is not indicated in the neonatal or infant population.
VIII. Before life-sustaining treatment is withdrawn, consider the following:

A. For pain/discomfort: Bolus dose of intravenous morphine (0.1-0.2 mg/kg) or fentanyl (1-5 mcg/kg). If the child is on a continuous opioid infusion, then maintain current rate (assuming the child is comfortable at the dose). For signs of discomfort, may give additional opioid boluses (equal to current hourly infusion rate) up to every 15 minutes and increase infusion by 25%.

B. For anxiety: Bolus dose of intravenous midazolam or lorazepam (0.1-0.2 mg/kg; max dose of 10 mg). If the child is on a continuous infusion, then maintain current rate (assuming child is comfortable at that dose). For signs of agitation, may give additional boluses (equal to current hourly infusion rate) up to every 15 minutes and increase infusion by 25%.

C. In the event the patient does not have IV access, the following medication routes and doses may be considered:
   1. Sublingual morphine: 0.1 mg/kg;
   2. Intranasal midazolam: 0.2-0.5 mg/kg (For NICU patients, consideration should be given to total volume prior to administering);
   3. Rectal midazolam: 0.5 mg/kg;
   4. Buccal mucosal midazolam: 0.3 mg/kg;
   5. Intranasal fentanyl: 1.5-2 mcg/kg/dose.

IX. After life-sustaining treatment is withdrawn

A. Medications will be given to minimize anxiety and achieve the desired state of comfort. If distress ensues, additional opioid or benzodiazepine boluses may be given (equal to current hourly infusion rate) and the continuous infusion may be increased by 25%.

B. A general goal will be the avoidance of tachypnea, tachycardia, elimination of grimacing and agitation. Prepare the family that ineffective and irregular respirations may be present despite appropriate medications. The use of heart rate and blood pressure alone can be unreliable indicators of pain, because tachycardia and hypertension can occur even in the absence of consciousness. Consider tearing and diaphoresis as constellation of discomfort.

C. The doses of medication will be titrated to effect and not limited on the basis of “recommended” or “suggested” maximum doses.

D. All “as needed” or “pm” doses will be ordered with a clear indication for relieving pain, anxiety, shortness of breath, etc.

X. Ventilator Management

A. The patient will be suctioned prior to removal of the endotracheal tube.
B. The respiratory therapist, RN or MD, as designated, will silence ventilator alarms, then remove the endotracheal tube and turn off the ventilator.

C. If the patient has a tracheostomy tube, the ventilator will be disconnected, but the tracheostomy tube will not be removed, unless requested by the provider or the family.

D. Continued periodic suctioning to remove secretions is considered a comfort measure.

XI. After Death Occurs – refer to the “Death Declaration and Post Mortem Care” policy.

Applicable Joint Commission Chapter(s):
Rights and Responsibilities of the Individual (RI)

Related Policies:
N/A

Definitions:
Pediatric – Patients under 18 years of age.

References:


UCHealth Memorial Hospital Central
Performance Improvement Program

Service Line: Trauma Services
Adult & Pediatric Trauma

Prepared By: Trauma Program Director

Reviewed & Approved By: Adult Trauma Medical Directors
Adult Trauma Program Managers
Pediatric Trauma Medical Director
Pediatric Trauma Program Manager
Quality Department Director
1. **Performance Improvement and Patient Safety Program**

2. **UCHealth Memorial Hospital Central Mission**

3. **Performance Improvement Strategies**
   - 3.1 Authority and Scope
   - 3.2 Patient Population
   - 3.3 Goals and Objectives
   - 3.4 Roles and Responsibilities

4. **Performance Improvement**
   - 4.1 Trauma Services Performance Improvement Program Overview
   - 4.2 Trauma Services Data Collection
   - 4.3 A3 Process/PDCA
   - 4.4 Benchmark/Goals
   - 4.5 Multidisciplinary Trauma Peer Review Committee
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5. **Review Process**
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   - 5.8 Conflict of Interest

6. **Data Management**
   - 6.1 Data Quality
   - 6.2 Confidentiality and Data Security

7. **Definitions**

8. **Approvals**

9. **Appendices**
1 Performance Improvement and Patient Safety (PIPS) Program

The purpose of this plan is to establish and provide clear expectations of the
- Performance improvement structure based on a multidisciplinary approach to rapid problem identification, data-driven analysis, and resolution of issues within the quality framework of UCHealth Memorial Hospital Central (MHC).
- Effectiveness of patient acute care and safety evidenced by our patient care outcomes.
- Consistency, accuracy, and validity of the trauma registry data.

2 UCHealth Memorial Hospital Central Mission

UCHealth Mission: We improve lives. In big ways through learning, healing and discovery. In small, personal ways through human connection. But in all ways, we improve lives.

Trauma Services Mission: The Trauma Center at UC Health Memorial Hospital Central (MHC) is committed to providing state of the art, quality injury care. In keeping with The UCH Memorial Hospital values, the trauma center’s mission is to provide excellent care and the best possible service in a manner that is efficient and cost effective. The guiding principle is to assure Access, Service, Quality, and Value at all levels for every patient, every visit.

3 Performance Improvement Strategies

The MHC Trauma Program uses a formal, stepwise, internal performance improvement process for problem identification, followed by data-driven analysis to resolve issues within the quality framework of the institution. This process is overseen by the Performance Improvement and Patient Safety (PIPS) Program, which utilizes primary, secondary, tertiary and quaternary levels of review to: 1) determine if there is an opportunity for trauma performance improvement; 2) analyze the opportunity; 3) develop a corrective plan, and 4) monitor the outcome(s) of the corrective plan to determine if improvement or event resolution was realized (see Section 5 Review Process).

3.1 Authority and Scope

The UCHealth Board, Leadership and Medical Staff are responsible for the quality of all patient care provided to the acutely injured patient.
- The Trauma Medical Director in cooperation with the Trauma Program Director and Trauma Program Manager along with MHC leadership has the ultimate responsibility for ensuring the delivery of quality injury care at MHC.
- Summary findings, including variance reports and trended data reports, are submitted to the appropriate MHC performance committees as per the MHC Quality Management Plan.
- Trauma performance improvement is under the direction of the Trauma Medical Director as delegated by the Medical Staff and hospital bylaws. (See Appendix 9.1 Trauma Services Organizational Chart).
- The trauma service has the authority to monitor all events that occur during a trauma related episode of care when admitted to the institution.
- The Medical Executive Committee empowers the Trauma Medical Director to direct the Trauma Performance Improvement Program. The Trauma Program reports PI activity to the MHC Quality Patient Safety Council & the Medical Executive Committee.

3.2 Patient Population / Data Inclusion

Patients included in the trauma registry meet criteria set forth by the facilities two governing agencies: Colorado Department of Public Health and Environment and the American College of Surgeons National Trauma Data Dictionary. Criteria Include:
- Any patient with at least one ICD-10-CM diagnosis code in the following ranges with the 7th character modifies of A, B, or C only:
a. S00-99 (injury)
b. T07 (unspecified multiple injuries)
c. T14 (injury of unspecified body region)
d. T15-19 (foreign bodies with modifier A only)
e. T20-28 (burns with modifier A only)
f. T30-32 (burns by TBSA percentages)
g. T79.A1-T79.A9 (traumatic compartment syndrome, with modifier A only)
h. T74.4 (shaken infant syndrome)
i. T74.91-T74.92 (unspecified adult and child maltreatment, confirmed)
j. T75.0 (effects of lightning)
k. T75.4 (electrocution)

2. All injured patients transferred into or out of an acute care facility, regardless of length of stay or mode of transfer (EMS or POV).

3. ED Disposition of: Observation, Floor, ICU, Tele, Admit, Operating Room, Admit or Direct OR:
   a. ISS >9
   b. LOS of 12 hours from time of arrival at your facility

4. Readmissions 30 days post discharge.

5. Any patient that dies as a result of injury, regardless of length of stay, include DOA’s.

Patients excluded from the trauma registry are:
   1. Pathologic fractures
   2. Anoxic brain injuries such as drownings or hangings
   3. Poisoning or envenomation
   4. Hypo or hyperthermia
   5. Non-native tissue failure or breakage or dislocation
   6. Ingestions or foreign bodies that do not result in injury
   7. Cellulitis (see CDPHE guidelines)
   8. Smoke inhalation
   9. Elective or planned surgeries of injuries

3.3 Goals and Objectives

The PI Plan goals are to provide a structure that allows:

- Delivery of patient care at a level consistent with professional standards and evidence-based practice.
- Improved outcomes related to the quality of care for injured patients.
- Focus on improving the performance of the organization’s systems and processes.
- Assurance of the provision of integrated, refined levels of care and service for patients, families, and significant others across the continuum of care.
- Design of processes to systematically measure, assess, and refine performance to improve clinical quality, reduce variability and maximize patient safety.
- Leadership in the field of Trauma quality management through the development and implementation of best practices at MHC and across the system of UCHealth.
- Assessment of the performance of medical staff members and other professional healthcare staff members while maintaining individual confidentiality.
- Collaboration between various departments and teams through the Adult and Pediatric Multispecialty Peer Review Committee (MSC), Trauma Performance Improvement and Patient Safety (PIPS), Trauma Grand Rounds and other teams/committees, as needed, in order to meet or exceed care delivery and outcome goals.
- Compliance with Centers for Medicaid/Medicare Services (CMS), Colorado Trauma Care Network Commission as well as the American College of Surgeons (ACS) and the International Organization of Standardization (ISO).
### 3.4 Roles and Responsibilities

<table>
<thead>
<tr>
<th>Team Role</th>
<th>PIP Responsibilities</th>
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| **Trauma Medical Director (TMD)- Adult & Pediatric** | **Set qualifications for Trauma Surgeons, including other specialties routinely involved with trauma care.**  
**Collaborate with the Trauma Program Director and Manager to establish goals and objectives consistent with the hospital’s strategic plans.**  
**Review and investigate all trauma PI inquiries in collaboration with the TPM and Registered Nurse Trauma Clinicians (RNTC)**  
**Monitor compliance with trauma treatment guidelines, policies and protocols.**  
**Assure the quality and appropriateness of patient care is monitored and evaluated, and suitable actions (based on findings) are taken.**  
**Attend ≥ 80% of Trauma PIPS MSC Peer Review and Trauma PIPS Operations Committee meetings.**  
**Chair the MSC & PIPSs committee meetings and designate an interim chair when absent.**  
**Oversee and participate in trauma outreach and education.**  
**Conduct and incorporate research into evidence-based practice and participate in trauma research.**  
**Support outreach and PI follow up to referring hospitals.**  
**Collaborate with and design system PI initiatives.**  
**Assure the Performance Improvement Plan is evaluated annually and working effectively.**  
**Perform a critical, comprehensive review, in collaboration with the TPM and RNTCs at Secondary and Tertiary Case Reviews**  
- **Identify opportunities for improvement (OFI) at Secondary Case Review**  
- **Determine which cases will be elevated for Tertiary Case Review, provide case assignment to committee members and forward pertinent issues or questions for consideration.**  
- **Oversee cases presented at Tertiary Case Review, include appropriate case conclusion/disposition, identification of OFI and develop action plans to help mitigate or resolve the issue.** |
| **Trauma Surgeons (TS)** | **Collaborate with TMD to assure delivery of evidence-based care.**  
**Collaborate with TMD in development of evidenced-based clinical practice guidelines (CPGs).**  
**Reduce variation in care by following through compliance with CPGs, standards and policies.**  
**Perform critical and comprehensive multi-disciplinary review of cases during Tertiary Case Review and participate in case determinations, development of appropriate action plans that will mitigate or resolve the issues.**  
**Identify areas for improvement of trauma patient care.**  
**Participate in internal and external trauma education and injury prevention for healthcare providers.**  
**Participate in research related to the trauma population.**  
**Attend ≥ 50% of MSC & PIPSs committee meetings.**  
**Meet trauma code arrival time standards > 80%.** |
<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibilities</th>
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<tr>
<td>Subspecialty Physician Liaisons</td>
<td>Collaborate with TMD to assure delivery of evidence-based care. Identify areas for improvement of trauma patient care. Participate in case determinations discussed at MSC. Conduct chart reviews/participate in PI education corrective actions. Attend &gt; 50% of MSC &amp; PIPSs committee meetings.</td>
</tr>
<tr>
<td>Director, Trauma Services</td>
<td>Collaborate with the TMD to establish goals and objectives consistent with the hospital’s strategic plans. Identify areas for improvement. Supervises and assists with state, Federal, and ACS program compliance. Identify areas for improvement of trauma patient care. Support outreach and PI follow up to referring hospitals. Collaborate with and design system PI initiatives. Support research related to the trauma population. Attend &gt; 50% MSC &amp; PIPS committee meetings.</td>
</tr>
<tr>
<td>Trauma Program Manager (TPM)- Adult &amp; Pediatric</td>
<td>Collaborate with the TMD to establish goals and objectives consistent with the hospital’s strategic plans. Identify areas for improvement. Oversee and assist with data analysis. Supervises and assists with state, Federal, and American College of Surgeons (ACS) program compliance. Review and investigate all trauma PI inquiries in collaboration with the TMD and RNTCs. Participate in internal and external trauma education and injury prevention for healthcare providers. Supervise registry &amp; Trauma Quality Improvement Program (TQIP) data input and validation. Incorporate research into evidence-based practice and participate in trauma research. Coordinate &amp; attend &gt; 50% MSC &amp; PIPS committee meetings.</td>
</tr>
<tr>
<td>Registered Nurse Trauma Clinicians (RNTC)</td>
<td>Identify areas for improvement, methods to measure, analyze, and report findings. Review and investigate all trauma PI inquiries and filter fallouts in collaboration with the adult and pediatric TMD and TPM. Assist with measurement of PI &amp; documentation of actions to evaluate effectiveness. Assure necessary peer review data is incorporated in the hospital quality process and ongoing provider performance evaluation. Prepare for and attend &gt; 50% MSC &amp; PIPS committee meetings.</td>
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Performance Improvement Plan

4

Trauma Services Performance Improvement Program Overview

There is a process that identifies problems, requires identification of potential solutions, applies these solutions, and then monitors the result. This process is a cycle, since the first solution may only partially solve the problem. The initial solution may need to be modified or totally changed. This loop continues until a reasonable result has been achieved. The loop is closed once the best possible resolution of the initial problem is achieved and documented. This process or loop is reported to MSC and PIPS.

4.2 Trauma Services Data Collection

Data is continuously collected, organized concurrently and when necessary reviewed under the direction of the TMD and TPM.

4.2.1 The data is collected in the trauma registry using TraumaOne from Lancet. The definition of the data entered into the Trauma Registry is based on the current National Trauma Database (NTDB) data dictionary.

4.2.2 The ACS TQIP software is also used with the registry. TQIP data elements are defined by the current admission year TQIP Data Dictionary published by the ACS.

4.2.3 Data sources for review include:

- Internal Sources:
  - Critical Care and nursing unit multi-disciplinary daily rounds made by any member of the trauma team.
  - Screening reports from the hospital systems/departments for:
    - ED daily report,
    - 30 day readmission of trauma patients to the hospital,
    - Deceased patient list (inpatient and outpatient),

See 9.1- Trauma Services Organizational Chart
- Transfer Center list,
- Trauma & non-trauma service patient admits,
- Trauma yes reports,
- Trauma alert activations,
- Hospital incident reports.
  o Issue referrals from patients, the patient's family, residents, attending physicians, trauma service physician liaisons, consultants, hospital employees, and other sources.
  o Trauma code debriefings.
  o Ongoing hospital concurrent and retrospective record reviews.
- External Sources
  o EMS, Air Ambulances, and Critical Access facilities.
  o Issue referrals from outlying hospitals, outside physicians, the trauma clinic, and other outside sources.
  o Referral facilities and services such as long term care facilities, rehabilitation, home health services, and specialty referral facilities (head, spine, burn, psychiatric).

See attachments 9.2 Trauma Services PI Process: Levels of Review

### 4.3 Problem Identification and Analysis

#### 4.3.1 The A3 Process works with the Plan-Do-Check-Act (PDCA) cycle. (See Appendix 9.4 Trauma Services Performance Improvement Model).

Most problems that arise in organizations are addressed in superficial ways, what some call "first-order problem-solving." Meaning, we work around the problem to accomplish our immediate objective, but do not address the root causes of the problem so as to prevent its recurrence. By not addressing the root cause, we encounter the same problem or same type of problem again and again, and operational performance does not improve.

The A3 Process helps people engage in collaborative, in-depth problem-solving. It drives problem-solvers to address the root causes of problems which surface in day-to-day work routines.

Specifically the steps include:

- Step 1: Identify the problem or need
- Step 2: Breakdown the problem
- Step 3: Set a target
- Step 4: Analyze the root cause
- Step 5: Develop countermeasures
- Step 6: See countermeasures through
- Step 7: Monitor results
- Step 8: Standardize and replicate

#### 4.3.2 Trauma specific problem identification methods:

- Concurrent review (rounds/hand-offs) with a referral process for identified issues
- Use of audit filters to monitor compliance with standards (see Appendix 9.5 Trauma PI Indicators)
- Monitoring CPGs for variation in EBP
- Use of TQIP/risk adjusted benchmarking data for issue identification.
4.4 Benchmarks/Goals

The TMD will establish, for each indicator, predetermined goals of care that will align with the current ACS Resources for Optimal Care of the Injured Patient or other outside recognized agencies i.e. CDC, CMS. Benchmark values may be determined based on current standards, literature, experience, patient and consumer expectations, or prior performance. Typically, benchmarks are set between 80-100% or 0% i.e., healthcare acquired infections. For indicators, goals, and frequency (see Appendix 9.5 Trauma PI Indicators).

4.5 Multisystem Trauma Peer Review Committee (MSC)

The MSC committee is designed to review and improve trauma care by conducting review of cases that meet one or more of the medical audit criteria, that have exceptional educational or scientific benefit, or that involves provider issues which require discussion or resolution. The members are “safe” giving honest feedback to colleagues because they are empowered by Chief Medical Officer and Administration to tackle issues that may require changed performance or behaviors of providers.

4.5.1 Membership:
- Adult and Pediatric MSC is chaired by the Adult and Pediatric TMD respectively.
- Physician members of the MSC include: 1) attending trauma surgeons (also surgical critical care); 2) pediatric trauma surgeons; and 3) trauma service physician liaisons from 5 different specialties: orthopedic surgery, neurosurgery, Emergency Medicine, Anesthesiology, and Radiology.
- The Trauma Program Director, Adult and Pediatric TPMs, and RNTCs also attend the MSC meetings.
- A Clinical Quality Department leader.
- Membership will be evaluated every year.

4.5.2 Attendance: All attending surgeons and physician liaisons must have > 50% meeting attendance each calendar year. Meeting attendance is recorded by physician and trended by the individual on a quarterly basis. Attendance is reported quarterly or more frequently as directed by the TMD.

4.5.3 Peer Review Discussion: Members will discuss the quality, efficiency and safety of medical care rendered and will make recommendations either to the provider, group of providers, and/or the department.

4.5.4 Responsibilities:
- Address issues that impede quality and/or efficiency of care delivery at the patient care level by utilizing appropriate PI methodology to address improvement opportunities for both the provider and healthcare system.
- Make recommendations to the PIPS committee for issues that relate/impact trauma care practice that cross department lines or are system based opportunities for improvement.
- Promote and integrate standards of clinical trauma practice that are consistent with or exceed national, regional and community standards.
- Review and monitor TQIP data and develop strategies to improve or maintain benchmark goals.
- Communicate status and progress of improvements to the Medical Executive Committee or the Quality & Patient Safety Committee, the Section M&Es (Monitoring & Evaluation) and the Multispecialty Peer Review Committee.

4.5.5 Indicators: The Trauma Program collects data on key performance measures based on priorities/goals identified by the TMD, TPM, MSC, hospital leaders, Medical Executive Committee, and others. Relevant information from the following measures is integrated into performance improvement (PI):
- Evidence-based practice
- Trauma Registry data related to mortality, complications, length of stay, readmissions, etc.
• Compliance with trauma protocols, such as, appropriateness of trauma team activation and trauma team responses, Massive Transfusion Protocol
• Trauma resuscitation and its outcomes
• Serious Safety Events including Sentinel events and near misses

4.5.6 Action Plan: The aim for identifying follow-up action is to avoid the problem in the future. Providers whose case is being reviewed will not participate in the decisions for case determination. Each action will be assigned to an individual responsible for these actions. The RNTC and/or the TPM will monitor and report action plan progress. To close the loop, care will be monitored for a specified time frame to document resolution of the problem.

4.5.7 Documentation: Minutes will be completed after each meeting and will include a general summary of the reason for and content of each presentation, along with peer review determination, required actions and person responsible for these actions. The meeting minutes will be shared with the Clinical Quality & Medical Staff Services department.

4.6 Trauma Performance Improvement and Patient Safety Committee (PIPS)
The responsibility of PIPS is to evaluate the care of the trauma patient from a clinical and systems perspective and to perform interdisciplinary implementation of improvement strategies. It is responsible for establishing objective criteria for identifying issues for review and determining compliance with standard of care. The committee will systematically monitor/analyze data; improve patient outcomes through improvement opportunities.

4.6.1 Membership:
• Adult and Pediatric PIPS are chaired by the Adult and Pediatric TMD respectively.
• Adult and Pediatric PIPS is co-chaired by the Adult and Pediatric TPM respectively.
• Physician members of the PIPS include: 1) attending trauma surgeons (also surgical critical care); 2) pediatric trauma surgeons; and 3) trauma service physician liaisons from 5 different specialties: orthopedic surgery, neurosurgery, Emergency Medicine, Anesthesiology, and Radiology.
• The Trauma Program Director, RNTCs and Trauma Registrars also attend the PIPS meetings.
• Healthcare team members of the PIPS include: Clinical Quality Department leadership; nursing leadership with representatives from the various disciplines functioning within the ED, OR, and critical care units; EMS and air ambulance liaisons; Lab/Blood Bank; Respiratory and Rehabilitation services.
• Other services invited as needed: Pharmacy and Case Management.
• Membership will be evaluated every year.

4.6.2 Responsibilities:
• Address issues that impede quality and/or efficiency of care delivery at the patient care level by utilizing appropriate PI methodology to address improvement opportunities.
• Make recommendations to the PIPS committee for issues that relate/impact trauma care practice that cross department lines or are system based opportunities for improvement.
• Promote and integrate standards of clinical trauma practice that are consistent with or exceed national, regional and community standards.
• Review and monitor TQIP data and develop strategies to improve or maintain benchmark goals.
• Communicate status and progress of improvements to the Quality & Patient Safety Committee and other committees/groups as the issue necessitates.
4.6.3 **Indicators:** The Trauma Program collects data on key performance measures based on priorities/goals identified by the TMD, TPM, hospital leaders, Medical Executive Committee, and others. Relevant information from the following measures is integrated into performance improvement (PI):

- Evidence-based practice
- Trauma Registry data related to mortality, complications, length of stay, readmissions, etc.
- Patient perceptions of care, treatment and services or patient satisfaction
- Compliance with trauma protocols such as appropriateness of trauma team activation and trauma team responses, Massive Transfusion Protocol, Blood Utilization
- Behavior management and treatment including alcohol/substance abuse screening and referral to treatment
- Appropriateness of admission service
- Trauma resuscitation and its outcomes
- Health-care associated infections and health-care associated conditions
- Staffing Effectiveness & Staff Training/Certification
- Serious Safety Events including Sentinel events and near misses
- Trauma Diversion.

4.6.4 **Action Plan:** The aim for identifying follow-up action is to avoid the problem in the future. Each action will be assigned to an individual responsible for these actions. The RNTC and/or the TPM will monitor and report action plan progress. To close the loop, care will be monitored for a specified time frame to document resolution of the problem.

4.6.5 **Documentation:** Minutes will be completed after each meeting and will include a general summary of the reason for and content of each presentation, along with required actions and person responsible for these actions. A written summary of the meeting will be disseminated, in a timely fashion, to all members to assure dissemination of meeting contents and follow-up.

5 **Review Process**

There will be ongoing monitoring and evaluation of care of trauma patients. Analysis of performance improvement activities will occur routinely, and reports will be generated on a regular basis.

5.1 **Overview**

5.1.1 The process of performance improvement begins with the collection of qualitative and quantitative information at both the patient level and the systems level. Existing data collection tools will be used to collect and report performance data.

5.1.2 The review process will examine the appropriateness of care, effectiveness of care, and responsiveness of the system and identify opportunities for improvement based on review.

5.1.3 Specific clinical indicators will be used to identify potential problems.

- The Trauma Surgeons will review selected indicators as determined by the Trauma Medical Director. Indicators reviewed by the Trauma surgeons include: deaths, complications and sentinel events. See Appendix 9.6 Trauma Event Tracking Form.
- The TMD, TPM and RNTC will recommend process and outcome indicators to be monitored by the trauma system (See attachment 9.5: Trauma PI Indicators)
5.2 Levels of Review

5.2.1 First Level (primary) Review: The RNTC will review all identified cases or issues collected from the previous 1-2 weeks. Some cases or referrals may be closed at this level of review and be considered part of track and trend. For other issues or if an increase in a particular PI indicator for track and trend is identified, the RNTC will bring these cases to the TPM and/or the TMD. If a valid concern related to Trauma care is identified, the case will move to the next level of review.

5.2.2 Second Level (secondary) Review: This level of review is completed by the Adult & Pediatric TMD, Adult & Pediatric TPM, RNTC, and is open to all Adult & Pediatric Trauma surgeons. After discussion, a second level review case may be closed, result in the development of an action plan, or referred to MSC Committee, Trauma PIPS, or Trauma M&M/Grand Rounds for further evaluation/discussion.

5.2.3 Third Level (tertiary) Review: This level review is completed by the MSC Committee or under the direction of the Adult or Pediatric TMD. Cases will be prepared in advance identifying all pertinent background information, protocols followed or not followed along with a summary of specific issues of concern. The case will be formally reviewed and opportunities for improvement will be identified along with the development of an appropriate action plan at MSC. Emergency medical services (EMS) cases will be referred to the EMS Medical Director. Referring hospital care concerns will be referred to that hospital’s ER Medical Director and/or ER Manager.

5.2.4 Fourth Level (quaternary) Review: The fourth level review is reserved for those cases that need to be channeled through the Clinical Quality & Medical Staff Services Department and/or Multispecialty Peer Review Committee.

Appendix 9.2- Trauma Services Data Collection and Data Flow summarizes this process.

5.3 Determination of Cause & Preventability

5.3.1 Determination of Cause: the cause of an issue will be assigned as a system, disease, provider, or any combination of the three. For a full explanation of each area (see 7 Definitions and Appendix 9.6 MHC Trauma Event and Tracking Form).

5.3.2 Preventability: After assigning one or more causes of an issue, the ability to prevent the issue from reoccurring will be assigned as either: 1) unanticipated event/mortality with improvement opportunity, 2) anticipated event/mortality with improvement opportunity, or event/mortality with no improvement opportunity (see 7 Definitions).

5.4 Corrective Action/Fair and Just Culture

The TMD oversees all corrective action planning and implementation. When escalated to the next level, follow-up recommendations can be made by other members of the Medical Staff or even an outside consultant; however the final decision for implementation rests with the TMD. An evaluation and re-evaluation process will be included in the plan to measure effectiveness of the intervention.

Examples of Corrective Action include:

- Education
- Trending
- Guideline Development
- Counseling
- Proctoring
- Changes in privileges and/or credentials
5.4.1 Fair and Just Culture

MHC framework for patient safety and quality is the Just Culture. The goal within the Just Culture framework is to create an environment of shared responsibility among individuals, the organization and its leaders. As an individual, you can make behavioral choices that prevent a patient event or near miss from occurring, while the organization designs safe systems and processes to work in. See Appendix 9.7- Fair and Just Culture Diagram

5.5 Communication

Performance Improvement activities, as well as the organization’s mission and quality goals, are communicated to the medical staff, hospital and system staff and Board of Directors through a variety of channels including the following:

- Board/Committee/Council meetings
- Department Head meetings
- Departmental staff meetings
- Daily patient rounds
- Morning check-out rounds
- Huddles
- Weekly trauma multidisciplinary meeting
- Focus groups
- Committee forums

5.6 Re-evaluation and Event Resolution (Loop Closure)

Any identified issues will be subject to Level 1, 2 or 3 reviews which may result in the formation of an action plan. In order to “close the loop”, the outcome of the corrective action plan will be monitored for the expected change and be re-evaluated. A PI issue will not be considered to be closed until the re-evaluation process demonstrates a measure of performance or change at an acceptable level. “Acceptable level” may be determined by frequency tracking, benchmarking, and variance analysis as decided by the TMD and/or TPM. Loop closure will be reported and documented as appropriate.

5.7 Integration into Hospital Performance Improvement Process

The Trauma PI program practices a multi-disciplinary and multi-departmental approach to reviewing the quality of patient care across all departments and divisions. The MSC and Trauma PIPS committees are integrated and collaborate with the appropriate hospital performance measurement and medical staff committees as needed. The Trauma PI program will report all activity through the Quality and Patient Safety Committee and Medical Executive Committee.

5.8 Conflict of Interest

If anyone involved in any PI activity has a financial or personal interest that may affect the decision of the activity and/or report reviewed, the activity and/or report shall be referred to another member for review and action and the member will be excused from discussion and voting.
6 Data Management

6.1 Data Quality: Timeliness, Validity, Reliability, and Accuracy

Trauma registry data has a great deal of influence since it is used to develop information (knowledge) at a facility, regional, state and national level for performance improvement, trauma center statistics, injury prevention, and research. Given the multi-faceted uses of the trauma registry data, trauma registry data quality must be credible. Therefore, review of the trauma registry data quality is essential to meet the needs of data users. The TPM and Trauma Registrars will conduct internal validity and reliability by re-abstracting 5-10% of the trauma cases on a quarterly basis (see definitions).

6.2 Confidentiality and Data Security

Data generated from the registry and TQIP is used to assess and analyze current practice and may lead to the peer review process. As such, Trauma Services PI data is considered confidential. The Trauma PIPS gathers and uses patient information in accordance with policies set forth by UCHEALTH MEMORIAL’s corporate compliance office. These policies include but are not limited to the following policies:

- Corporate Compliance Policy
- Confidentiality and Security Access
- Computer Security Incident Response
- Electronic Mail Policy
- Encryption Policy
- Uses and Disclosures of PHI Created for Research
- HIPAA Disclosure of De-Identified Protected Health Information

7 Definitions

- **Event or mortality with opportunity for improvement**: An event, complication, or death that is sequelae of a procedure, a disease, an illness, or an injury/death that was expected but opportunities have been identified that could improve process or outcomes.
- **Complication**: Any event that deviates from an anticipated uneventful recovery from illness or surgery.
- **Disease-related**: An event or complication that is an expected sequelae of a disease, an illness, or an injury.
- **Event or mortality without opportunity for improvement**: An event, complication, or death that is sequelae of a procedure, a disease, an illness, or an injury for which reasonable and appropriate preventable steps had been taken.
- **Hospital Acquired Condition (HAC)**: HAC is an undesirable event or condition that was not present on admission (POA), occurred during the hospital stay, and adversely affects the patient. An HAC includes but is not limited to an object left in the patient during surgery, an air embolism, blood incompatibility, catheter associated urinary tract infection, pressure ulcers, catheter line associated blood stream infection, surgical site infection, and falls with resulting injury (fractures, dislocations, intracranial injuries).
- **Integrity**: Minimizing errors through the process of collecting, recording, and analyzing data. Often best accomplished by properly training those involved with data collection and reviewing the recorded data.
- **Mis-triage**: Based on the current trauma activation criteria; 1) a trauma team consult meeting full or limited trauma activation criteria, 2) a limited trauma activation meeting full trauma criteria, or 3) a patient traumatically injured that met criteria but did not have any trauma activation, or 4) a full trauma activation that met limited trauma activation criteria.
- **Morbidity**: Any deviation from normal health that may be a result of a complication or may be preexisting (sometimes called co-morbidity).
- **Mortality**: death
- **Objectivity**: Data chosen is based on sound, unambiguous definitions.
- **Over-triage**: ISS ≤ 15 and received a limited or full trauma activation.
• **Provider-related**: An event or complication largely due to provider-related provision of care by a credentialed or non-credentialed provider functioning in a supportive and otherwise well-functioning system.

• **Registry Data Quality Completeness**: Ways in which missing values (data) are handled (CDC, 2009). Data missing at random is usually due to uncontrollable, external events, whereas data not missing at random cannot be collected due to known and expected external events.

• **Relevance**: The degree to which data is important to users and their needs.

• **Reliability**: The degree to which data is consistent.

• **System-related**: An event or complication not specifically related to a provider or disease, such as, operating room availability, blood availability, and diagnostic test availability; an event or complication whose correction usually goes beyond a single provider or department. System-related issues usually involve multiple individuals and/or departments.

• **Utility**: The aspect of timely collection, data release, and accessibility of data by intended users.

• **Validity**: The correctness and reasonableness of data.

• **Unanticipated event or mortality with opportunity for improvement**: An event, complication, or death that is an unexpected sequelae of a procedure, a disease, an illness, or an injury that is likely to have been prevented or substantially ameliorated, had appropriate steps been taken.

• **Under-triage**: ISS >15 and patient did not receive a limited or full trauma activation.

### 8 PERFORMANCE IMPROVEMENT PLAN APPROVALS

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9 APPENDICES

9.1 Trauma Services Organizational Chart
9.2 Trauma Services Data Collection and PI Process Flow

**Referrals**: Residents, Attending Consultants, Liaisons Patient / Family RNs, PT, OT, Dietary, Pharmacy, EC, EMS, Case Mgmt

**Hospital System**
Registry Validation Review Observations, TQIP Review, Monitoring Results, Sentinel Events, Complaints

**Patient Outcomes**
Procedure(s), Mortality ICU & Hosp Readmits, HAC, Blood Utilization, Organ Donation

**1st Level Review**
RNTC, TPM and/or TMD

- Case closed but could include track & trend
- Opportunity to improve?

**2nd Level Review**
Trauma Case Review (Weekly meeting) TPM, TMD, RNTC, Trauma Surgeons

- Opportunity to improve?

**3rd Level Review**
Multisystem Trauma Peer Review (MSC)
Trauma Operational Committee

- Opportunity to improve?

**4th Level Review**
- UCHealth Memorial Quality & Patient Safety Committee
- Sentinel Event / Root Cause Analysis
- Medical Executive Committee (MEC)
- Multispecialty Peer Review Committee

**Documention options**:
- Trauma Services Case Log
- Trauma Registry Patient Record
- Trauma Services PI Tracking Form
- Meeting Minutes (MSC, Trauma M&M)
- Transfer Follow-Up Letters
- E-mail correspondence

**Case Classification**:
- Event/mortality without opportunity for improvement
- Event/mortality with opportunity for improvement
- Unanticipated event/mortality with opportunity for improvement

*Actions could include:
- Track & trend
- Education
- Counseling
- Guideline/protocol development
- Trauma Operations project

*Actions and ^Case Classification

Opportunity to improve?
Yes

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last revised: 12.20.17
9.3 **Trauma PI Process: Levels of Review**

**Hospital/System Related**

1. Issue identified
   - Complete PI form & enter info into Trauma Registry.

   **Primary Review by Program Director &/or PI Coordinator**
   - Validate & verify if second level review needed.

   **Secondary Review by Trauma Medical Director (monthly or PRN)**
   - Determine need for action by TMD, TPM, RNTC

   - **Further action required?**
     - Yes → **Further action required?**
     - No → **Close case in registry**

   - Information entered in RL Solutions

   **3a**
   - Per TMD, TPM, & TPIC:
     - Analysis of referral with follow-through
     - If needed, action plan created.

   **3b**
   - Reported to MSC & PIPS Committees and other groups as needed

   **3c**
   - Summary of findings reported to Quality & Patient Safety Committee
     - Update and close PI form & Trauma registry PI entry

   PI and Outcomes Registry data periodically reviewed to trend data. See Trauma Indicator list for frequency of review.

**Provider Related**

- **3a** Per Trauma Med Director:
  - Peer-review presentation
  - Education
  - Policy/Guideline: create or revise
  - Monitor

- **3b**
  - Reported to
  - Entered into Medical Staff tracking system (forward MSC meeting minutes to MEC and Clinical Quality and Medical Staff Services)

- **3c**
  - Further actions per Med Staff Bylaws, Rules & Regs
  - Update and close PI form & Trauma registry PI entry.
9.4 **Trauma Services Performance Improvement Model: A3 and PDCA**
### 9.5 Trauma PI Indicators

<table>
<thead>
<tr>
<th>Sentinel Event (SE) / Event-Based (EB)</th>
<th>Rate-Based (RB)</th>
<th>Goal</th>
<th>Collection Method</th>
<th>Review &amp; Report Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMD = Trauma Medical Director, TPIC = Trauma PI Coordinator, TPM = Trauma Program Director/Manager, TR = Trauma Registrar</td>
<td></td>
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<td></td>
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<tr>
<td><strong>Pre-Hospital Care: Triage, Care, &amp; Transport</strong></td>
<td></td>
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<tr>
<td>Over-triage rate Trauma Center Core Measure</td>
<td>&lt; 25-50% RB</td>
<td>All trauma activations TRs, TPM, &amp; TMD</td>
<td>Review: quarterly Report: quarterly</td>
<td></td>
</tr>
<tr>
<td>Under-triage rate Trauma Center Core Measure</td>
<td>&lt; 5% RB</td>
<td>All trauma activations TRs, TPM, &amp; TMD</td>
<td>Review: quarterly Report: quarterly</td>
<td></td>
</tr>
<tr>
<td>Outside hospital (OSH) treatment time &gt; 4 hrs. before transport OSH treatment time &gt; 2 hrs. for pediatric patients before transport</td>
<td>EB</td>
<td>All trauma activations TRs, TPM, &amp; TMD</td>
<td>Review: as occurs Report: quarterly</td>
<td></td>
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<tr>
<td><strong>Hospital Care: Trauma Team Response</strong></td>
<td></td>
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<tr>
<td>Tier 1 Trauma Activations: <em>Trauma Surgery</em> Attending response to activation ≤ 15 mins of patient arrival. Trauma Center Core Measure</td>
<td>≥ 80% RB</td>
<td>All trauma activations TRs, TPM</td>
<td>Review: as occurs Report: quarterly</td>
<td></td>
</tr>
<tr>
<td>Tier 1 Trauma Diagnosis Designated Activations: <em>Neurosurgery</em> response within 30 mins of notification.</td>
<td>≥ 80% RB</td>
<td>All trauma activations that meet policy TRs &amp; TPM</td>
<td>Review: as occurs Report: quarterly</td>
<td></td>
</tr>
<tr>
<td>Tier 1 Trauma Diagnosis Designated Activations: <em>Orthopedic Surgery</em> response within 30 mins of notification.</td>
<td>≥ 80% RB</td>
<td>All trauma activations that meet policy TRs &amp; TPM</td>
<td>Review: as occurs Report: quarterly</td>
<td></td>
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<tr>
<td>Tier 2 Trauma Activations: <em>Attending Trauma Surgeon</em> response to consults ≤ 6 hours of patient arrival Trauma Center Core Measure</td>
<td>≥ 80% RB</td>
<td>All trauma Tier 2 activations TRs &amp; TPM</td>
<td>Review: as occurs Report: quarterly</td>
<td></td>
</tr>
<tr>
<td>Open Fracture Time to Antibiotic Antibiotic administered within ≤ 60 min</td>
<td>EB</td>
<td>TRs, TPIC, TPM</td>
<td>Review: monthly Report: quarterly</td>
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<tr>
<td>Acute Transfers Out: All patients transferred during the acute phase of hospital care are reviewed to determine the rationale for transfer, appropriateness of care, and improvement opportunities. Trauma Center Core Measure</td>
<td>SE</td>
<td>All acute care patient transfers to another hospital.</td>
<td>Review: as occurs Report: quarterly</td>
<td></td>
</tr>
<tr>
<td>Sentinel Event (SE) Event-Based (EB)</td>
<td>Rate-Based (RB)</td>
<td>Goal</td>
<td>Collection Method</td>
<td>Review &amp; Report Frequency</td>
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<tr>
<td><strong>Hospital Care: Trauma Center Readiness</strong></td>
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<tr>
<td>Diversion time/month =</td>
<td></td>
<td>&lt; 5%</td>
<td>All trauma activations TRs, TPIC, TPM, &amp; TMD</td>
<td>Review: monthly Report: monthly</td>
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<tr>
<td>Numerator: # diversion hours</td>
<td></td>
<td>RB</td>
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<tr>
<td>Denominator: number hours in a month</td>
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<td><strong>Hospital Care: Blood Utilization</strong></td>
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<tr>
<td>Massive Transfusion Protocol (MTP) activations reviewed for 1) timely initiation, 2) balanced transfusion or TEG guided</td>
<td></td>
<td>≥ 80%</td>
<td>All trauma activations TRs, TPIC, &amp; TPM</td>
<td>Review: monthly Report: quarterly</td>
</tr>
<tr>
<td>Trauma Center Core Measure</td>
<td></td>
<td>RB</td>
<td></td>
<td></td>
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<tr>
<td><strong>Hospital Care: Outcomes</strong></td>
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<tr>
<td>Unplanned ICU admission or readmit within the same hospitalization</td>
<td></td>
<td>&lt; 5%</td>
<td>All trauma patients TRs &amp; TPIC</td>
<td>Review: as occurs Report: quarterly</td>
</tr>
<tr>
<td>Trauma Center Core Measure</td>
<td></td>
<td>RB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infections:</td>
<td></td>
<td>EB</td>
<td>All trauma patients TPIC</td>
<td>Review: as occurs Report: quarterly</td>
</tr>
<tr>
<td>Surgical Site Infection (SSI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catheter Related UTI (CAUTI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Line Blood Stream Infections (CLABSI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ventilator Associated Pneumonia (VAP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Surgical Admits (NSAs)</td>
<td></td>
<td>≤ 10%</td>
<td>All patient admits meeting NTDS definition</td>
<td>Review: monthly Report: quarterly</td>
</tr>
<tr>
<td>All trauma patient admits by hospital transfer and ER by a non-surgical service will be monitored rationale for admit, adverse outcomes &amp; opportunities for improvement.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trauma Center Core Measure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mortality: review of all death for 1) timeliness of response/care, 2) efficiency &amp; evidence based, 3) activation level, &amp; 4) appropriate &amp; timely pre-hospital care</td>
<td></td>
<td>EB</td>
<td>All trauma mortalities TRs, TPIC, TPM &amp; TMD</td>
<td>Review: monthly Report: monthly</td>
</tr>
<tr>
<td>Trauma Center Core Measure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Liaison Specialty Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiology Misreads</td>
<td></td>
<td>EB</td>
<td>Radiology Services and Radiology Liaison</td>
<td>Report: quarterly</td>
</tr>
<tr>
<td>The rate of changed interpretation of radiologic studies with reasons for misinterpretation, adverse outcomes, and improvement opportunities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## 9.6 MHC Trauma Event Tracking Form (p.1)

### Trauma Event Tracking Form

<table>
<thead>
<tr>
<th>Date of report:</th>
<th>Medical record No:</th>
<th>Admit Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature of event:</td>
<td>Date:</td>
<td>Time:</td>
</tr>
<tr>
<td>Patient Name:</td>
<td>Age:</td>
<td>Gender:</td>
</tr>
<tr>
<td>Diagnosis:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of Activation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Pertinent Information:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact (✓)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>Psychological</td>
<td>Legal</td>
</tr>
<tr>
<td>□ No harm</td>
<td>□ No harm</td>
<td>□ Legal department contacted</td>
</tr>
<tr>
<td>□ Potential for harm</td>
<td>□ Minimal temporary harm</td>
<td>□ Complaint registered w/ Patient Affairs</td>
</tr>
<tr>
<td>□ Minimal temporary harm</td>
<td>□ Minimal permanent harm</td>
<td>□ Potential legal risk</td>
</tr>
<tr>
<td>□ Moderate temporary harm</td>
<td>□ Moderate temporary harm</td>
<td>□ Socioeconomic</td>
</tr>
<tr>
<td>□ Moderate permanent harm</td>
<td>□ Moderate permanent harm</td>
<td>□ Delayed disposition</td>
</tr>
<tr>
<td>□ Severe temporary harm</td>
<td>□ Severe temporary harm</td>
<td>□ Unnecessary hospital admission</td>
</tr>
<tr>
<td>□ Severe permanent harm</td>
<td>□ Severe permanent harm</td>
<td>□ Unnecessary EMS/Air transport</td>
</tr>
<tr>
<td>□ Death</td>
<td>□ Profound mental harm</td>
<td>□ Unnecessary procedure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Unnecessary treatment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Behavioral issue</td>
</tr>
<tr>
<td>Communication</td>
<td>Patient Management</td>
<td>Type (✓)</td>
</tr>
<tr>
<td>□ Inaccurate or incomplete information</td>
<td>□ Delegation of care or tasks</td>
<td></td>
</tr>
<tr>
<td>□ Questionable advice or interpretation</td>
<td>□ Patient follow-up</td>
<td></td>
</tr>
<tr>
<td>□ Questionable consent process</td>
<td>□ Consultation or referral</td>
<td></td>
</tr>
<tr>
<td>□ Questionable disclosure process</td>
<td>□ Resource utilization</td>
<td></td>
</tr>
<tr>
<td>□ Questionable documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Performance</td>
<td>Interventional:</td>
<td>Post-Interventional:</td>
</tr>
<tr>
<td>Pre-Interventional:</td>
<td>□ Correct procedure with complications</td>
<td>□ Unexpected outcome</td>
</tr>
<tr>
<td>□ Correct diagnosis, questionable intervention</td>
<td>□ Correct procedure, incorrectly performed</td>
<td>□ Inadequate post-procedural instructions</td>
</tr>
<tr>
<td>□ Inaccurate diagnosis</td>
<td>□ Correct procedure but untimely</td>
<td>□ Inadequate home-going instructions</td>
</tr>
<tr>
<td>□ Incomplete diagnosis</td>
<td>□ Omission of essential procedure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Procedure contraindicated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Procedure not indicated</td>
<td></td>
</tr>
<tr>
<td>Setting</td>
<td>Phase</td>
<td>Time</td>
</tr>
<tr>
<td>□ Scene</td>
<td>□ Evaluation</td>
<td>□ Weekday</td>
</tr>
<tr>
<td>□ Transport</td>
<td>□ Resuscitation</td>
<td>□ Weekend/Holiday</td>
</tr>
<tr>
<td>□ Transferring facility</td>
<td>□ Acute Care</td>
<td>□ Day</td>
</tr>
<tr>
<td>□ ED</td>
<td>□ Post discharge</td>
<td>□ Night</td>
</tr>
<tr>
<td>□ Radiology</td>
<td></td>
<td>□ Shift change</td>
</tr>
<tr>
<td>□ IR</td>
<td></td>
<td>□ Mass Casualty</td>
</tr>
<tr>
<td>□ OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ PACU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ ICU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Step Down</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Floor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Clinic</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Domain (✓) - continued

<table>
<thead>
<tr>
<th>Staff Providers:</th>
<th>Nurses:</th>
<th>Therapists:</th>
<th>Others:</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Trauma surgeon</td>
<td>□ Nursing assistant</td>
<td>□ Physical therapist</td>
<td>□ Pharmacist</td>
</tr>
<tr>
<td>□ Fellow</td>
<td>□ LPN</td>
<td>□ Occupational therapist</td>
<td>□ X-ray technician</td>
</tr>
<tr>
<td>□ Resident</td>
<td>□ Registered nurse</td>
<td>□ Respiratory Therapist</td>
<td>□ Lab</td>
</tr>
<tr>
<td>□ PA/NP</td>
<td>□ Float Staff</td>
<td>□ Speech Therapist</td>
<td>□ Transfusion</td>
</tr>
<tr>
<td>□ EM physician</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ ICU physician</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Anesthesia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Neurosurgery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Radiology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### MHC Trauma Event Tracking Form (p.2)

#### Trauma Event Tracking Form

<table>
<thead>
<tr>
<th>System Factors</th>
<th>Human Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic Medical Record</td>
<td>Referral process:</td>
</tr>
<tr>
<td>Registration</td>
<td>Incorrect service/consultation</td>
</tr>
<tr>
<td>Schedules</td>
<td>Incorrect transfer team</td>
</tr>
<tr>
<td>Resource availability</td>
<td>Surgeon not available to speak with referring physician</td>
</tr>
<tr>
<td>Equipment issue</td>
<td>Trauma Team Activation:</td>
</tr>
<tr>
<td>Hand-off</td>
<td>Short notification</td>
</tr>
<tr>
<td>Multiple casualty incident</td>
<td>Page confusing</td>
</tr>
<tr>
<td>Inadequate/absent policy or practice management guideline</td>
<td>Incomplete page</td>
</tr>
<tr>
<td>Diversions</td>
<td></td>
</tr>
</tbody>
</table>

#### Practitioner factors
- Practitioner skill-based
- Practitioner rule-based
- Practitioner knowledge-based
- Practitioner fatigue
- Practitioner unclassifiable
- Intentional rule violations
- Negligence
- Recklessness

#### Patient Factors
- Uncooperative/Non-compliance
- Left against medical advice
- Left without being seen
- Left before treatment completed
- Family issues

#### Determination
- Mortality with Opportunity for Improvement
- Mortality without Opportunity for Improvement
- Missed injury
- Delay in Diagnosis
- Incorrect Diagnosis
- Technique issue
- System Issue
- Inadequate Protocol
- Communication Issue
- Other Identified Component—Specify ________________
- Patient Disease
- No Error

#### Action Plan
- Periodic Reporting
- Develop Practice Management Guideline/policy
- Education
- Counseling
- PIPS Team Project
- Hospital/System PI
- Other

#### Event Resolution

Date ______________________

Signature: __________________ Date: __________________
9.7 **Fair and Just Culture**

The Three Behaviors

**Human Error**

*Product of Our Current System Design*

Manage through changes in:
- Processes
- Procedures
- Training
- Design
- Environment

**At-Risk Behavior**

*A Choice: Risk Believed Insignificant or Justified*

Manage through:
- Removing incentives for at-risk behaviors
- Creating incentives for healthy behaviors
- Increasing situational awareness

**Reckless Behavior**

*Conscious Disregard of Unjustifiable Risk*

Manage through:
- Remedial action
- Disciplinary action
<table>
<thead>
<tr>
<th>Short Text</th>
<th>Long Text</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACS</td>
<td>Chart meets ACS Criteria</td>
<td>Identification for any chart that meets ACS review criteria- for use by DTS.</td>
</tr>
<tr>
<td>ADMIT SVC</td>
<td>Admission Service</td>
<td>Admission service- non trauma admit/issues</td>
</tr>
<tr>
<td>ADVERSE</td>
<td>Adverse Event, Sentinel, RCA’s</td>
<td>Any adverse or sentinel event that impacts patient care</td>
</tr>
<tr>
<td>APP CARE</td>
<td>Review for appropriateness of care</td>
<td>Review filter used by RNTC for review of any trauma patient</td>
</tr>
<tr>
<td>BCI</td>
<td>BCI guidelines not followed</td>
<td>Guidelines were not followed</td>
</tr>
<tr>
<td>BCVI</td>
<td>BCVI guidelines not followed</td>
<td>Guidelines were not followed</td>
</tr>
<tr>
<td>BOARDING</td>
<td>Boarding pt in ED (&gt;2 hours from bed request)</td>
<td>boarding pt in ED &gt; 2 hrs from bed request (or over 8hrs total stay)</td>
</tr>
<tr>
<td>CONSULT</td>
<td>Specialty consult deviation or delay</td>
<td>specialty consult deviation (ie delay or provider level)</td>
</tr>
<tr>
<td>CSPINE DOCUMENT clearance documented</td>
<td>Cervical spine clear documentation issue</td>
<td>C-spine clearance not documented in ED or after admission by appropriate service.</td>
</tr>
<tr>
<td>CSPINE EMS</td>
<td>Cervical spine non-compliance by EMS</td>
<td>EMS C-spine non-compliance</td>
</tr>
<tr>
<td>CT DELAY</td>
<td>CT after 20 minutes FTTA/ 60 minutes LTTA</td>
<td>Delay to CT for FTTA or LTTA based on 20 minutes for Full TTA or 60 minutes for LTTA</td>
</tr>
<tr>
<td>Death</td>
<td>Patient death</td>
<td>Any patient death meeting inclusion criteria</td>
</tr>
<tr>
<td>DELAYED</td>
<td>Delayed diagnosis &gt;24 hours of injury, or impacts patient care</td>
<td>Delayed diagnosis &gt; 24 hours of injury, or impacts POC</td>
</tr>
<tr>
<td>DIRECT ADMIT</td>
<td>Direct admission of pt</td>
<td>Direct admit patient</td>
</tr>
<tr>
<td>EMER Release</td>
<td>Emergency release of blood products- documented retrospectively upon reconciliation</td>
<td>Emergency release of blood products- this is reconciled with blood bank on a monthly basis</td>
</tr>
<tr>
<td>EMS CARE</td>
<td>EMS course of care issues</td>
<td>EMS course of care issues</td>
</tr>
<tr>
<td><strong>ICUTX</strong></td>
<td>Unexpected transfer to ICU</td>
<td>Any unexpected tx to ICU regardless of timeframe (different than state def in complications tab that is restricted to just 24 hrs) run report 8/1 to validate whether to keep.</td>
</tr>
<tr>
<td><strong>INTUB missed</strong></td>
<td>Missed intubation (Peds &gt;1 attempt)</td>
<td>Missed intubation of a pediatric patient x 1 attempt from either EMS or hospital staff</td>
</tr>
<tr>
<td><strong>LEVEL 1</strong></td>
<td>Mandatory level 1 consult not performed</td>
<td>Mandatory level 1 consult not performed</td>
</tr>
<tr>
<td><strong>MASS</strong></td>
<td>Massive transfusion protocol initiated</td>
<td>Any massive transfusion protocol initiated- note blood products used, if balanced, and if TEG guided. May also note time to initiation. Initiation can be from anywhere in hospital</td>
</tr>
<tr>
<td><strong>OPENFX ABX</strong></td>
<td>Long bone fracture delay &gt;1 hour antibiotics</td>
<td>Delay to OR (long bone, gross contamination, 8 hrs)</td>
</tr>
<tr>
<td><strong>OR</strong></td>
<td>Unplanned return to OR</td>
<td>Unplanned or unexpected return to OR for same issue</td>
</tr>
<tr>
<td><strong>RAD</strong></td>
<td>Radiology misread, change in reading impacts/ changes course of care</td>
<td>Rad misread- change in reading impacts/changes course of care</td>
</tr>
<tr>
<td><strong>READMIT</strong></td>
<td>Patient re-admitted &lt;30 days due to original trauma</td>
<td>Patient readmit &lt; 30 days due to original trauma</td>
</tr>
<tr>
<td><strong>RIBFX</strong></td>
<td>Rib fracture guidelines not followed</td>
<td>Guidelines were not followed</td>
</tr>
<tr>
<td><strong>ROUNDING NOTES</strong></td>
<td>RNTC rounding notes</td>
<td>Rounding notes from ICU placed by RNTC for reference</td>
</tr>
<tr>
<td><strong>TXIN</strong></td>
<td>Transfer in</td>
<td>Deviation in transfer in from referring facility based on 4 hours for adults and 2 hours for peds as a goal</td>
</tr>
</tbody>
</table>
### Sentinel Event (SE) & Rate-Based (RB) Event-Base (EB)

<table>
<thead>
<tr>
<th>Event</th>
<th>Goal</th>
<th>Collection Method</th>
<th>Review &amp; Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMD = Trauma Medical Director, TPIC = Trauma PI Coordinator, TPM = Trauma Program Director/Manager, TR = Trauma Registrar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pre-Hospital Care: Triage, Care, &amp; Transport</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Over-triage rate
Trauma Center Core Measure | < 25-50% RB | All trauma activations TRs, TPM, & TMD | Review: quarterly
Report: quarterly |
| Under-triage rate
Trauma Center Core Measure | < 5% RB | All trauma activations TRs, TPM, & TMD | Review: quarterly
Report: quarterly |
| Outside hospital (OSH) treatment time > 4 hrs. before transport
OSH treatment time > 2 hrs. for pediatric patients before transport | EB | All trauma activations TRs, TPM, & TMD | Review: as occurs
Report: quarterly |
| **Hospital Care: Trauma Team Response** |
| Tier 1 Trauma Activations: Trauma Surgery Attending response to activation ≤ 15 mins of patient arrival.
Trauma Center Core Measure | ≥ 80% RB | All trauma activations TRs, TPM | Review: as occurs
Report: quarterly |
| Tier 1 Trauma Diagnosis Designated Activations: Neurosurgery response within 30 mins of notification. | ≥ 80% RB | All trauma activations that meet policy TRs & TPM | Review: as occurs
Report: quarterly |
| Tier 1 Trauma Diagnosis Designated Activations: Orthopedic Surgery response within 30 mins of notification. | ≥ 80% RB | All trauma activations that meet policy TRs & TPM | Review: as occurs
Report: quarterly |
| Tier 2 Trauma Activations: Attending Trauma Surgeon response to consults ≤ 6 hours of patient arrival
Trauma Center Core Measure | ≥ 80% RB | All trauma Tier 2 activations TRs & TPM | Review: as occurs
Report: quarterly |
| Open Fracture Time to Antibiotic
Antibiotic administered within ≤ 60 min | EB | TRs, TPIC, TPM | Review: monthly
Report: quarterly |
| Acute Transfers Out: All patients transferred during the acute phase of hospital care are reviewed to determine the rationale for transfer, appropriateness of care, and improvement opportunities.
Trauma Center Core Measure | SE | All acute care patient transfers to another hospital. | Review: as occurs
Report: quarterly |

### Hospital Care: Trauma Center Readiness
<table>
<thead>
<tr>
<th>Sentinel Event (SE)</th>
<th>Rate-Based (RB) Event-Based (EB)</th>
<th>Goal</th>
<th>Collection Method</th>
<th>Review &amp; Report Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diversion time/month =</td>
<td>Numerator: # diversion hours Denominator: number hours in a month</td>
<td>&lt; 5%</td>
<td>All trauma activations TRs, TPIC, TPM, &amp; TMD</td>
<td>Review: monthly Report: monthly</td>
</tr>
<tr>
<td><strong>Hospital Care: Blood Utilization</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Massive Transfusion Protocol (MTP) activations reviewed for 1) timely initiation, 2) balanced transfusion or TEG guided Trauma Center Core Measure</td>
<td>≥ 80%</td>
<td>All trauma activations TRs, TPIC, &amp; TPM</td>
<td>Review: monthly Report: quarterly</td>
<td></td>
</tr>
<tr>
<td><strong>Hospital Care: Outcomes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unplanned ICU admission or readmit within the same hospitalization Trauma Center Core Measure</td>
<td>≤ 5%</td>
<td>All trauma patients TRs &amp; TPIC</td>
<td>Review: as occurs Report: quarterly</td>
<td></td>
</tr>
<tr>
<td>Non-Surgical Admits (NSAs) All trauma patient admits by hospital transfer and ER by a non-surgical service will be monitored rationale for admit, adverse outcomes &amp; opportunities for improvement. Trauma Center Core Measure</td>
<td>≤ 10%</td>
<td>All patient admits meeting NTDS definition</td>
<td>Review: monthly Report: quarterly</td>
<td></td>
</tr>
<tr>
<td>Mortality: review of all death for 1) timeliness of response/care, 2) efficiency &amp; evidence based, 3) activation level, &amp; 4) appropriate &amp; timely pre-hospital care Trauma Center Core Measure</td>
<td></td>
<td>All trauma mortalities TRs, TPIC, TPM &amp; TMD</td>
<td>Review: monthly Report: monthly</td>
<td></td>
</tr>
<tr>
<td><strong>Liaison Specialty Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiology Misreads The rate of changed interpretation of radiologic studies with reasons for misinterpretation, adverse outcomes, and improvement opportunities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
XIX. RESEARCH

1. Is there a trauma research program? (Yes/No) Yes

2. Does the administration of a Level I trauma center demonstrate support for the trauma research program, for example, providing basic laboratory space, sophisticated research equipment, advanced information systems, biostatistical support, salary support for basic and translational scientists, or seed grants for less experienced faculty? (CD 19-8, CD 10-10, CD 10-11) Type II / LI / PTCI (Yes/No) Yes

   • If ‘Yes’, please describe:

   MHC supports a medical director position for trauma research. This role is currently filled by the Trauma Medical Director. Dr. Schroeppel actively pursues clinical and scientific research opportunities and builds upon existing relationships with University of Colorado in Denver, Medical Center of the Rockies, and Denver Health for regional hospitals. We participate in multi-institutional trials through AAST, EAST, WTA, and SWSC.

   The hospital has supported the development of a trauma research department that includes a 1.0 FTE research manager, 1.0 FTE research nurse, and a 1.0 FTE research coordinator position. These positions work in collaboration with the dedicated research resident and the other students/residents that participate in investigator initiated projects.

3. What is the number of ongoing research projects with IRB approval? 22

   • Provide a LIST of ongoing trauma research projects with IRB approval:
   The list below needs to have years/ name/ institution
   For example:

   1) 2017 – present; Can the cervical spine be clinically cleared in awake and alert blunt trauma patients with “distracting injuries?” American Association for the Surgery of Trauma

   2) 2017 - present; Demographics, mechanisms, and injury patterns of non-accidental trauma at a level-2 trauma center. Investigator initiated. University of Colorado medical student project

   3) 2017 – present; Geriatric trauma patient co-management by hospitalists and impact on outcomes. Investigator initiated. University of Colorado research resident project

   4) 2017 – present; Aortic occlusion for the resuscitation in trauma and acute care surgery (AORTA): A prospective study of the endovascular skills in trauma and resuscitative surgery (ESTARS) working group. American Association for the Surgery of Trauma

   5) 2017 – present; Geri-TBI: A prospective evaluation of geriatric patients with traumatic brain injury. American Association for the Surgery of Trauma


   7) 2017 – present; Impact of tetrahydrocannabinol on pain medication requirements in trauma patients. Investigator initiated.

   8) 2017 – present: Extubation with an open abdomen: A retrospective review. Southwestern Surgical Congress
9) 2017 – present; Randomized, Double-Blind, Parallel Group Study to Evaluate the Safety, Tolerability, Pharmacokinetics and Pharmacodynamics of BMS-936558 (nivolumab) in Participants with Severe Sepsis or Septic Shock. Bristol Meyers Squibb – Industry Study

10) 2017 – present; Infection following penetrating brain injury. Eastern Association for the Surgery of Trauma

11) 2017 – present; Epinephrine and cardiac arrest. Eastern Association for the Surgery of Trauma

12) 2017 – present; Supplemental perioperative oxygen to reduce surgical site infection after high energy fracture surgery. Major Extremity Trauma Research Consortium

13) 2017 – present; Injury severity isn’t sufficient: A retrospective, multicenter study to evaluate the Need for Trauma Intervention (NFTI) metric as an indicator of major trauma, and the Secondary Triage Assessment Tool (STAT) as a measure of over- and undertriage. Baylor University Medical Center

14) 2017 – present; Study of probable benefit of the neuro-spinal scaffoldTM for safety and neurologic recovery in subjects with complete thoracic AIS A spinal cord injury. InVivo – Industry study

15) 2017 – present; Fat Emboli III. Investigator initiated.

16) 2017 – present; Model for validation of the AAST emergency general surgery scoring systems in subjects with necrotizing fasciitis and soft tissue infections. American Association for the Surgery of Trauma

17) 2016 – present; BIG data: an independent validation of the brain injury guidelines. Investigator initiated

18) 2016 – present; Retrospective review of early VTE prophylaxis in patients with TBI. Investigator initiated

19) 2016 – present; Predictors of survival and functional outcome after decompressive craniectomy. Investigator initiated

20) 2016 – present; Retrospective review of patients with rib fractures and paravertebral blocks for pain control. Investigator initiated

21) 2016 – present; Aortic Trauma Foundation prospective blunt thoracic aortic injury registry. Aortic Trauma Foundation

22) 2016 – present; Lifeboard software functionality study. Investigator initiated.

4. Does the hospital have any trauma-related grants? No
   a. If ‘Yes’, how many? N/A
   b. Provide a LIST of trauma-related research grants:

5. Does the Level I trauma center, at a minimum, have 20 peer-reviewed articles published in journals included in the Index Medicus or PubMed in a 3-year period? (CD 19–1, CD 10-10, CD 10-11) Type II / LI / PTCI (Yes/No) No
• Provide a LIST of trauma-related research publications: Please see attached list in Appendix


6. Are these publications a result from work related to trauma center or the trauma system in which the trauma center participates? (CD 19-2, CD 19-3, CD 10-10, CD 10-11) Type II / LI / PTCI (Yes/No) Yes
   - If 'No', please describe: N/A

7. Of the 20 articles, is at least one authored or co-authored by members of the general surgery trauma team? (CD 19-3, CD10-10, CD10-11) Type II / LI / PTCI (Yes/No) Yes

8. At least one article each from three of the following disciplines is required: (1) basic sciences, (2) neurosurgery, (3) emergency medicine, (4) orthopaedics, (5) radiology, (6) anesthesia, (7) vascular surgery, (8) plastics/maxillofacial surgery, (9) critical care, (10) cardiothoracic surgery, (11) rehabilitation, and (12) nursing (CD 19–4, CD 10-10, CD 10-11) Type II / LI / PTCII
Which disciplines had authorship or co-authorship of at least one of the 20 (or 10) articles? (Check all that apply)

- Basic Sciences
- Neurosurgery
- Emergency Medicine
- Orthopaedics
- Radiology
- Anesthesia
- Vascular Surgery
- Plastics/Maxillofacial Surgery
- Critical Care
- Cardiothoracic Surgery
- Rehabilitation
- Nursing

9. Of the 20 articles (10 articles if 4 of 7 scholarly activities are demonstrated), is there at least 1 article with authorship or co-authorship from 3 of these 6 disciplines? (Yes/No) Yes

neurosurgery, emergency medicine, orthopaedics, radiology, anesthesia, and rehabilitation (CD 19-7, CD 10-10, CD 10-11) Type II / LI / PTCI

10. If the trauma program is pursuing the alternate method of satisfying the research requirement (10 peer-reviewed articles and 4 of 7 trauma-related scholarly activities), please demonstrate how at least four of the seven scholarly activities listed below has been satisfied: (CD 19-7, CD 10-10, CD 10-11) Type II / LI / PTCI

a. Leadership in major trauma organizations: Yes

Schroeppel
Vice Chair of the State of CO COT

Cribari
ACS – COT (Region VIII Chief)
ACS – COT VRC
ACS – COT PIPS
TQIP Best Practices Committee
AAST – Patient Assessment and Outcomes Committee

Leininger
EAST membership and recruitment committee
EAST military committee

b. Peer-reviewed funding for trauma research: Yes

Schroeppel
Project: Beta-Adrenergic Blockade for Suppression of Catecholamine Surge Following Traumatic Brain Injury: A Randomized Trial (Clinicaltrials.gov - NCT 02957331)

Funding:
- University of Tennessee Institute of Synergy, Research, Innovation, and Health Equity (iRISE) - $50,000
- Semmes-Murphey Foundation - $5,000
c. Evidence of dissemination of knowledge:

  Multiple Book Chapters authored, editor of the Orange book, and multiple research presentations at National meetings (AAST, WTA, SESC).

d. Published trauma-related case reports:

  Multiple case reports currently under peer review.

e. Visiting professorships or invited lectures:

  Invited lectures at TQIP and Las Vegas Trauma Symposium

f. Resident participation in scholarly activity:

  Research resident (PGY-3) presented at CO state COT, authored multiple case reports, and will present at Southeastern Surgical Congress this coming year.

g. Trauma, critical care, or acute surgery fellowship:

  No