Maine EMS Trauma System Operations Manual

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Executive Summary & Introduction

Organized systems of trauma care reduce mortality and improve outcomes for victims of physical injury. However intuitive this may seem, the scientific evidence in support of trauma systems has only recently begun to accumulate (Nathens, Jurkovich, Cummings, Rivara, & Maier, 2000). Major injury is a time-sensitive disease, where patient survival often depends on the combined skills and expediency of a diverse array of healthcare providers.

In the case of rural trauma, these principles take on special significance. Rural injury is inherently more likely to be blunt-mechanism and multi-system: qualities which confound its evaluation and management at every stage of treatment and transition. Because resources for surgical critical care are necessarily centralized, tertiary facilities are often far removed (geographically and logistically) from primary providers, and thus transport becomes a crucial component of effective care. Rural demographics – none more so than Maine's – tend to be disproportionately affected by age and comorbid conditions. And rural communities often lack the predictable and reliable infrastructure that urban systems take for granted. For these reasons and more, integration and collaboration are the hallmarks of effective rural trauma care.

In 1992, inspired and supported by the federal Trauma Care Systems Planning and Development act of 1990 (P.L. 101-590), Maine EMS empaneled a Trauma Advisory Committee (TAC) to explore methods of evaluating and improving trauma care throughout the state. The TAC, which has since been formalized by Maine Statute (5 MSRA §12004-I, sub-§49-B), was chiefly responsible for the establishment, implementation and management of a voluntary and inclusive trauma care system, building on existing relationships and processes with special attention to evidence-based approaches.

The TAC is statutorily structured to be representative of all EMS regions, and providers at every level. Membership includes surgeons, emergency physicians, nurses, prehospital care providers, hospital administrators representing the Maine Hospital Association, and concerned citizens. Leaders of the American College of Surgeons' Maine Committee on Trauma, Maine Chapter of the American College of Emergency Physicians, and the Emergency Nurses Association have all been actively involved, as have EMS system leaders.

In addition to this deep pool of trauma experience, the TAC has drawn from a wide variety of data sources to describe generations of established patterns and practices – the "ruts in the road" which mark the trajectory of trauma victims from roadside through rehabilitation. Such is the foundation of the Maine EMS Trauma System.

While it is clear (and entirely appropriate) that most injuries in Maine are manageable in local communities and regions, the Maine EMS Trauma System emphasizes early recognition, essential interventions, and prompt referral of major trauma patients to critical care resources. This document is an effort to quantify those patients and resources, and to establish the roles and expectations of providers, facilities, and organizations which comprise the system – and on which it relies.

Maine EMS TAC Inclusive Approach to Maine Hospitals

The TAC worked to build a comprehensive, state-wide trauma system for Maine. Having learned from the missteps of earlier, national trauma system development efforts, and having seen national Regional Trauma Center designation processes expanded only marginally to include additional hospitals, Maine EMS' TAC elected a different course. It chose to create a system which emphasized the inclusion of every acute care, emergency department equipped hospital in the state as either a *Trauma System Hospital* or a *Regional Trauma Center*. The TAC and MEMS' Medical Direction and Practice Board (MDPB), which governs prehospital medical practices, added to this approach specific protocols and procedures for the stabilization of patients at the scene of injury and their movement to, and treatment at, hospitals most appropriate to the type and severity of injuries suffered.

Most patients can be treated at hospitals closest to where they were injured, and often closest to the patient's home and family. However, some patients may require direct transport by ground or air to a Regional Trauma Center (RTC), or transferred to the RTC after initial stabilization at the local hospital.

Under the *Maine Trauma System*, every hospital in the state is important to the functioning of the system, so every hospital willing and able to participate is eligible to be designated a *Trauma System Hospital* by Maine EMS. Those making the commitment to staff, equip, organize and operate to effectively treat the most severe and complex trauma patients are eligible to be designated as *Maine EMS Regional Trauma Centers*.

Trauma System Hospital Responsibilities

The responsibility and the challenge for every Trauma System Hospital is to provide effective and efficient clinical decision-making and trauma care, assure appropriate consultation and, when required, effect appropriate transfer to other facilities. The commitment of the Trauma System Hospital is to participate in the TAC Trauma Technical Assistance Program, and develop its own "Guide to Trauma Care in the Emergency Department" (with the assistance of MEMS staff to the Program) at least once every five years. It will also commit to participate in Regional Trauma Center outreach programs when they are offered. The reward for participation will be inclusion in a coordinated, approved system of care, patient outcome analysis, performance-based continuing education, and community recognition as a portal to a statewide System of trauma care resources.

Other features of this commitment include:

• A functioning Emergency Department and maintenance of the resources as described in the Hospital Resource Table (below), staffed with physicians or physician-extenders who regularly participate in trauma care continuing education, and participate effectively in the Maine EMS system of prehospital medical direction;

- Communication technology enabling effective and efficient medical direction of EMS personnel, and communications with specialty transport and trauma consulting resources (including tele-trauma systems when they are made available);
- A person designated as the primary Trauma System Hospital contact to work with the Maine EMS Regional Trauma Coordinator and State Trauma System Manager; and
- A commitment to optimum patient care, including participation in pre-hospital, in-hospital, and patient transfer quality improvement activities and education.
- Develop and implement a trauma-related patient transfer plan that includes both ground and air medical transport
- Timely completion of Medical Records
- Respond to System requests for information as resources allow

Regional Trauma Center Responsibilities

Hospitals committed and able to provide a comprehensive array of trauma care and Trauma System support resources may elect to be designated as a *Regional Trauma Center*. A major requirement is institutional and medical staff commitment to trauma management, with an institutionally-recognized, surgeon-led trauma service.

All Hospitals will be supported in their efforts to obtain American College of Surgeons (ACS) trauma center verification at any level, but only Level I and II centers are eligible for designation as a "Maine Trauma Center". Level III and IV centers would not be considered "Trauma Centers" and would continue to be designated as "Trauma System Hospitals".

Hospitals that have achieved ACS Level I or II verification can apply to Maine EMS for designation as a Regional Trauma Center. Interested Hospitals should submit a letter of intent to the Director of Maine EMS, along with the material submitted to ACS for verification. Maine EMS will convene a subcommittee of the TAC to review the application and consider designation.

Specific features of the Regional Trauma Center commitment include:

- Current verification as an ACS Level I or level II trauma center and maintenance of the resources as described in the Hospital Resource Table (below). If an approved Trauma Center loses its' ACS verification, Maine EMS will convene a sub-committee of TAC members and interested stakeholders, as selected by the Maine EMS Board and the Chair of the Trauma Advisory Committee, to review the circumstances and develop a recommendation to the Maine EMS Board.
- Participation in a statewide standardized system of trauma patient feedback to referring TSH and EMS staff, and a standardized method of regional and statewide reporting of System activity and outcomes.
- Facilitation of a system of outreach programs to TSHs in the RTC general catchment area and active participation by staff in TAC Technical Assistance Program activities for TSHs.

- Active participation in the Trauma Advisory Committee by the Trauma Director and Trauma Program Manager (at a minimum).
- Participation in risk-adjusted data benchmarking and reporting as requested by the TAC

Hospital Resource Table

The Maine EMS TAC originally established its own requirements for the designation of Regional Trauma Centers and Trauma System Hospitals. With System maturity, Regional Trauma Centers no longer have a separate Maine EMS set of designation requirements, but may be designated as a Maine EMS Regional Trauma Center by maintaining current ACS verification status as a Level I or II trauma center. Trauma System Hospital designation, originally having no formal requirements, now requires the formal commitment of the facility to participate in regional trauma outreach and state Trauma System technical assistance programs (i.e. they must establish and regularly re-evaluate their clinical decision-making and resource organization for trauma care).

The table contained in Appendix "C" is intended to establish a basis for expectations among system participants for the resources provided by Trauma System Hospitals and Regional Trauma Centers.

Consensus Statement and Clinical Advice for Trauma Management

Patient care and transfer guidelines adopted by the TAC for the Maine EMS Trauma System to establish the expected standards of practice by hospital staff within the System will be posted to the website. For the most recent updates on these guidelines, please visit: http://www.maine.gov/ems/partners/trauma-system/index.html.

Prehospital Trauma Triage Procedures

Maine EMS develops protocols for EMS personnel in the field and should be used by those advising field personnel in managing trauma cases. If LifeFlight or other critical care transfer services are anticipated to be needed, either from the scene or to come to the Trauma System Hospital, early activation of these services is encouraged. The following is a link to the most current version of the Maine EMS Protocols: <u>http://www.maine.gov/ems/documents/2013_Maine_EMS_Protocols.pdf</u>.

Educational Outreach

Trauma education is a major responsibility for Regional Trauma Centers. The education and outreach program is designed to assist participating Trauma Direction and Care Hospitals and their staffs. Frequent professional dialogue will ensure that all physicians who

care for trauma patients have access to the latest medical information. The section that follows describes the educational and outreach portions of the Trauma System.

Mission

- To provide relationships between the participants in the Trauma System.
- To provide educational opportunities for the participants in the Trauma System.

The Trauma System maintains three areas of education and outreach to achieve the mission. These are: 1) Feedback programs, 2) Conferences, 3) Injury Prevention.

1. FEEDBACK PROGRAMS:

a. Trauma System Hospitals

Each TSH will be responsible for feedback to personnel involved in prehospital care and inter-hospital transfers in their geographic area. This can be accomplished in a written form utilizing mail, E-mail, or fax services. It can be done verbally by telephone or with conferencing. Every effort should be made to get the information to the individuals involved in the specific incident. The information should include at least 1) review of prehospital assessment and treatment, 2) review of the communications involved, 3) the hospital diagnosis and therapy, 4) the outcome of the patient.

b. Regional Trauma Centers

Each trauma center will be responsible written feedback to TSH personnel on a patient by patient basis. When necessary or requested, verbal feedback will be provided. An annual summary should go to each TSH contact. Verbal feedback will involve at least a call back to the transferring physician from the trauma center and a visit once per year by trauma center hospital physicians to the system hospital to review patients. Annual summaries of feedback reports will be given to the TAC.

2. CONFERENCES:

a. Trauma Centers

Each RTC should provide a conference once a year for the local catchment area. The conference should include local problems and issues and general educational topics. The conferences should be open and applicable to all the participants in the trauma system in that area including prehospital, TSH, and RTC personnel. Alternatively, the RTCs may cooperate in annual statewide conferences coordinated through the Maine Committee on Trauma.

b. Trauma Technical Assistance Program

The Trauma Technical Assistance (TA) Program consists of three components:

- Institutional Self-Evaluation
- Technical Assistance Team Visit
- Decision Making Tool ("Guide to Trauma Care in the ED")

Maine EMS will coordinate this program and make it available to all eligible TSHs. The voluntary nature of the trauma team visits limit the availability of this resource to approximately four visits per year.

c. Professional Education

The Trauma Advisory Committee and the RTCs promote the availability of recognized trauma courses such as Advanced Trauma Life Support (ATLS), Pre-Hospital Trauma Life Support (PHTLS), Rural Trauma Team Development Course (RTTDC), or Trauma Nursing Core Course (TNCC). These courses should be held in all parts of the state on a regular basis.

3. Injury Prevention:

a. The TAC will encourage membership from the state's injury prevention and health education divisions and will strive to participate in at least one injury-related prevention campaign each year.

APPENDIX "A"

Hospitals Designated as Maine EMS Regional Trauma Centers and Their Contact Information

The phone numbers used to request trauma consult and transfer or to get patient feedback or administrative information are as follows.

- In contacting any of the three regional trauma centers, you should contact the numbers listed below to request the trauma service or other service as specified:
 - Central Maine Medical Center:
 - For consult or transfer call "CMMC Connect" at 1-877-366-7700 to be connected with a trauma surgeon.
 - For feedback or administrative issues call Trauma Director: 795-2695 (ask for Dr. James Reilly, <u>reillyj@cmhc.org</u>) or Trauma Coordinator: 795-2869 (ask for Tammy Lachance, RN, <u>lachanct@cmhc.org</u>)
 - Eastern Maine Medical Center:
 - For consult or transfer call "Transfer Center of Eastern Maine" at 973-9000 for routing as follows:
 - For <u>all trauma patients</u>, including those who are unstable; those with major or multiple injuries; those with significant co-morbidities; or surgical subspecialty needs (e.g., neurosurgery, OMFS, pediatrics, etc.), you should be referred to the trauma attending.
 - Key phrases: "I have an injured patient and need to speak with a trauma surgeon." "We [are/are not] users of the ED telemedicine System."
 - For feedback or administrative issues:
 - Trauma Coordinator: 973-7260 (Pret Bjorn <u>pbjorn@emhs.org</u>; Anna Moses <u>amoses@emhs.org</u>)
 - Trauma Director: 973-4949 (ask for Dr. David Burke <u>dburke@emhs.org</u>)
 - Transfer Center Medical Director: 973-8005 (Dr. Norm Dinerman ndinerman@emhs.org)

• Maine Medical Center:

- For consult or transfer call "MMC One Call" at 1-866-662-6632.
- For feedback or administrative issues call Trauma Medical Director: 774-2381 (ask for Dr. Kristen Sihler; sihlek@mmc.org) or Trauma Program Manager: 774-2381

Appendix "B"

Maine EMS Trauma System Hospital Resource Table

The following table lists the essential (E) or desirable (D) characteristics for Regional Trauma Centers and Trauma System Hospitals.

	Regional Trauma Center	Trauma System Hospital
A. HOSPITAL ORGANIZATION		
1. Trauma Service		
a. An obligation on the part of the institution and medical staff to care for trauma patients. Specified delineation of privileges for the trauma service by the medical staff credentialing committee may be desirable. The Trauma Medical Director will be a board certified general surgeon with specific commitment to trauma care.	E	
b. Trauma Program Manager (usually a full-time registered nurse, responsible for the organization of services and systems necessary for a multidisciplinary approach to providing care to injured patients)	E	
c. Trauma System Hospital Contact Person (responsible for communicating with Regional Trauma Coordinators and State Trauma System Manager, coordinating trauma transfer feedback, and assuring participation in RTC outreach and Maine EMS Technical Assistance Program activities)		E
2. Multidisciplinary Trauma Committee: Includes trauma service director, trauma nurse coordinator, and representation from anesthesiology, critical care, emergency medicine, general surgery, neurosurgery, orthopedic surgery, radiology.	E	

3. Hospital Departments/Divisions/Services/Sections		
Anesthesiology	Е	
Emergency Medicine	Е	Е
General Surgery	Е	D
Neurosurgery	Е	_
Orthopedic Surgery	Е	
Radiology	Е	D
4. Specialty Availability		
a. In-house 24 hours a day		
Anesthesiology (May be satisfied by senior resident, CRNA, or by Anesthesiologist able to arrive in OR within 15 minutes of notification)	Е	
Critical Care Physician (May be satisfied by senior resident or by ICU physician able to arrive within 30 minutes of notification, time of first call and ICU arrival to be routinely recorded)	Е	
Emergency Medicine Provider	E (Must be MD/DO)	E (May be fulfilled by NP/PA)
General Surgery (May be satisfied by senior surgical resident or by surgeon able to arrive in ED within 30 minutes of notification, time of first call and ED arrival to be routinely recorded)	Е	

Neurosurgery (May be satisfied by physician with special competence in neurotrauma, determined by local neurosurgeon who will be able to arrive in ED within 30 minutes of notification, time of first call and ED arrival to be routinely recorded)	E	_
b. On-call and available within 30 minutes		
Anesthesiology	Е	D (May be CRNA)
Cardiac Surgery	E (Level I) D (Level II)	
Cardiology	Е	
Critical Care	Е	
General Surgery	Е	D
Hand Surgery	E (Level I) D (Level II)	
Infectious Disease	E (Level I) D (Level II)	
Internal Medicine	Е	
Microvascular Surgery	E (Level I) D (Level II)	

NephrologyENeurosurgeryEObstetrics/Gynecologic SurgeryEOphthalmic SurgeryEOral/Maxillofacial SurgeryEOrthopedic SurgeryEPediatricsEPediatric Surgery (May be satisfied by general surgeon credentialed by hospital to provide surgical trauma care to pediatric patients)EPulmonary MedicineERadiologyEDThoracic Surgery (May be satisfied by general surgeon credentialed by hospital to provide surgical trauma care to pediatric patients)EPulmonary MedicineERadiologyEDUrologic Surgery (May be satisfied by general surgeon credentialed by hospital to provide thoracic surgical trauma care)EDordERadiologyEDUrologic Surgery (May be satisfied by general surgeon credentialed by hospital to provide thoracic surgical trauma care)E			
Obstetrics/Gynecologic SurgeryEOphthalmic SurgeryEOral/Maxillofacial SurgeryEOrthopedic SurgeryEPediatricsEPediatric Surgery (May be satisfied by general surgeon credentialed by hospital to provide surgical trauma care to pediatric patients)EReconstructive/Plastic SurgeryEPulmonary MedicineERadiologyEDThoracic Surgery (May be satisfied by general surgeon credentialed by hospital to provide thoracic surgical trauma care)E	Nephrology	Е	
Ophthalmic SurgeryEOral/Maxillofacial SurgeryEOrthopedic SurgeryEPediatricsEPediatric Surgery (May be satisfied by general surgeon credentialed by hospital to provide surgical trauma care to pediatric patients)EReconstructive/Plastic SurgeryEPulmonary MedicineERadiologyEDThoracic Surgery (May be satisfied by general surgeon credentialed by hospital to provide thoracic surgical trauma care)E	Neurosurgery	Е	
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Pulmonary Medicine E Radiology E D Thoracic Surgery (May be satisfied by general surgeon credentialed by hospital to provide thoracic surgical trauma care) E		E	
Radiology E D Thoracic Surgery (May be satisfied by general surgeon credentialed by hospital to provide thoracic surgical trauma care) E	Reconstructive/Plastic Surgery	Е	
Thoracic Surgery (May be satisfied by general surgeon credentialed by hospital to provide thoracic surgical trauma care)	Pulmonary Medicine	Е	
provide thoracic surgical trauma care)	Radiology	Е	D
Urologic Surgery E		E	
	Urologic Surgery	Е	

Emer	gency Department (ED)		
a. Pe	ersonnel		
1.	Designated physician director	Е	Е
2.	Physician with special competence in care of the critically injured who is a designated member of the trauma team and physically present in the ED 24 hours a day	E	D
3.	Nurses with special capability in trauma care	E	D
b. Eq	quipment for resuscitation shall include but not be limited to:		
1.	Airway control and ventilation equipment including laryngoscopes and endotracheal tubes of all sizes, bag-mask resuscitator, pocket masks, oxygen, and mechanical ventilator	E	E
2.	Suction devices	Е	Е
3.	Electrocardiograph-oscilloscope-defibrillator	Е	Е
4.	Apparatus to establish central venous pressure monitoring	E	
5.	All standard intravenous fluids and administration devices, including intravenous catheters	E	E
б.	Sterile surgical sets for standard ED procedures		
	a. Cricothyroidotomy	E	Е
	b. Thoracotomy	Е	D

c. Vascular Access	Е	Е
d. Thoracostomy (chest decompression)	Е	Е
7. Gastric decompression equipment	Е	Е
8. Drugs and supplies necessary for emergency care	Е	Е
9. X-ray capability, 24 hour coverage by in-house technician	Е	
10. Two-way radio linked with vehicles of emergency transport system	Е	Е
11. Skeletal traction device for cervical spine injuries	Е	
12. Thermal control devices for:		
a. Patient (e.g. circulating water or air blanket, radiant heater)	Е	D
b. Blood and fluids (including rapid volume infuser)	Е	D
13. Pulse oximetry	Е	Е
14. End-tidal CO ₂ determination	Е	Е
15. Device for pelvic stabilization	Е	D
2. Intensive Care Units (ICUs) for trauma patients		
a. Designated physician director	Е	
 b. Critical Care physician on duty in ICU 24 hours a day or immediately available from in-house (May be satisfied by senior resident or by ICU physician able to arrive within 30 minutes of notification) 	Е	

c. Immediate access to clinical laboratory services (including Hb/Hct, ABG, CXR within 30 minutes. of request)	E	
d. Equipment:		
1. Airway control and ventilation devices	Е	
2. Oxygen source with concentration controls	Е	
3. Cardiopulmonary resuscitation cart	Е	
4. Temporary transvenous pacemaker	Е	
5. Electrocardiograph-oscilloscope-defibrillator	Е	
6. Cardiac output monitoring	Е	
7. Electronic pressure monitoring	Е	
8. Mechanical ventilator-respirators	Е	
9. Patient weighing devices	Е	
10. Pulmonary function measuring devices	Е	
11. Thermal control devices for:		
a. Patient (e.g., circulating water or air blanket, radiant heater)	Е	
b. Blood and fluids (including rapid volume infuser)	Е	
12. Inotropic drugs, fluids, supplies	Е	
13. Intracranial pressure monitoring devices	Е	

14. Pulse oximetry	Е	
15. Skeletal traction devices	Е	
16. Peritoneal lavage equipment	Е	
3. Postanesthetic Recovery Room (ICU is acceptable)		
a. Registered nurses and other essential personnel 24 hours a day	Е	
b. Equipment for continuous monitoring of hemodynamics	Е	
c. Intracranial pressure monitoring devices	Е	
d. Pulse oximetry	Е	
e. End-tidal CO ₂ determination	Е	
f. Thermal control devices for:		
1. Patient (e.g., circulating water or air blanket, radiant heater)	Е	
2. Blood and fluids (including rapid volume infuser)	Е	
4. Acute Hemodialysis Capability	Е	
5. Organized Burn Care		
Physician-directed burn center staffed by nursing personnel trained in burn care and equipped properly for care of the extensively burned patient	Е	Е
OR Maine EMS "Guide for Trauma Care in the ED" tailored to the hospital and specifying where and how burn care resources will be sought.		

6. Acute Spinal Cord / Head Injury Management Capability		
a. In circumstances where a designated spinal cord injury rehabilitation center exists in the region, early transfer should be considered; transfer agreements should be in effect	Е	E
b. In circumstances where a head injury center exists in the region, transfer should be considered in selected patients; transfer agreements should be in effect	Е	E
7. Radiological Special Capabilities		
a. In-house radiology technician 24 hours a day	Е	
b. Angiography of all types	Е	
c. Sonography	Е	
d. Nuclear scanning	D	
e. In-house computed tomography (CT) with scanner backup	Е	
f. In-house CT technician 24 hours a day (May be satisfied by technician able to respond within 30 minutes of notification, time of first call and arrival to be recorded routinely in Level II centers)	E (Level I) D (Level II)	
g. MRI available 24 hours a day (MRI Tech may respond from home)	E (Level I) D (Level II)	
h. Neuroradiology	D	

8. Rehabilitation Medicine		
Physician-directed rehabilitation service staffed by nursing personnel trained in rehabilitation care and equipped properly for care of the critically injured patient OR	Е	Е
Transfer agreement with a rehabilitation service		
9. Operating Suite Special Requirements		
a. Personnel - Operating room adequately staffed and immediately available 24 hours a day before patient arrives	Е	
b. Equipment shall include, but not be limited to:		
1. Cardiopulmonary bypass capability	E (Level I) D (Level II)	
2. Operating microscope	E (Level I) D (Level II)	
3. Thermal control devices for:		
a. Patient (e.g. circulating water or air blanket, radiant heater)	Е	D
b. Blood and fluids (including rapid volume infuser)	Е	Е
4. X-ray capability (including C-arm image intensifier)	Е	
5. Endoscopy (bronchoscopy, esophagoscopy)	Е	
6. Craniotomy instruments	Е	

7. Fixation equipment for long bone and pelvic fractures	Е	
10. Clinical Laboratory Services available 24 hours a day		
a. Standard analyses of blood, urine, and other body fluids	Е	D
b. Blood antigen matching	Е	
c. Coagulation studies	Е	
d. Comprehensive blood bank or access to a community central blood bank and adequate hospital storage facilities	Е	
e. Blood gases and pH determinations	Е	D
f. Microbiology	Е	
g. Serum alcohol determination	Е	D
h. Drug screening	Е	
11. Organ Transplantation/Donation Procedures should be in place through which brain death can be declared, a family approached regarding organ donation, a potential donor supported, and organ procurement coordinated with the regional organ procurement center.	Е	Е
C. QUALITY IMPROVEMENT		
1. Organized Quality Improvement Program	Е	Е
2. Special audit for all trauma deaths	Е	Е

3. Morbidity and mortality review	E	D
4. Hospitals are encouraged to provide specified data on trauma deaths in the facility to be included in statewide trauma data.	E	E
5. Multidisciplinary trauma conference (Regular and periodic conferences that include all members of the trauma team. This conference will be for the purpose of quality assurance through critiques of individual cases)	E	D
6. Medical nursing audit, utilization review, tissue review	Е	D
7. Hospital-based trauma registry		
a. Trauma registry review (Documentation of severity of injury and outcome by trauma score, age, injury severity score, survival, length of stay, ICU length of stay with monthly review of statistics)	Е	D
b. Trauma Registrar (responsible for data entry, report generation, and maintenance of hospital-based trauma registry)	E	
8. Participation in State TAC sponsored focused reviews and technical assistance team processes	Е	E
9. Hospitals are strongly urged to review all trauma cases that are admitted. This review should include an assessment that the patient's medical and surgical needs corresponded to the hospital's stated capabilities.	Е	D
10. Hospitals are strongly encouraged to review their total hospital time for patients who are transferred to another facility as a part of a regular review of their prehospital and regional systems of trauma care	Е	D
11. Published on-call schedule for general surgeons, neurosurgeons, orthopedic surgeons, thoracic surgeons	E	D

12. Reasons for trauma-related hospital destination decision documented and reviewed by quality improvement program	E	Е
D. OUTREACH PROGRAM		
1. Telephone and on-site consultations with physicians of the community and outlying areas	Е	D
2. Regional Trauma Centers must engage in active QI with feedback to system hospitals regarding transfers as a part of a standardized, statewide process. Particular attention should be given to education of the referring physician when the primary resuscitation could have been improved. This education should be educational and collaborative - it might be fulfilled by case conferences or a case review at the referring hospital.	Е	
E. PUBLIC EDUCATION: Sponsorship of Injury prevention programs addressing the home and industry, the highways, and athletic fields; standard first-aid; problems confronting public, medical profession, and hospitals regarding optimal care for the injured	E	
F. TRAUMA RESEARCH PROGRAM	E (Level I) D (Level II)	
G. TRAINING PROGRAM - Formal program of continuing education in trauma provided by hospital for:		
1. Staff physicians	Е	D
2. Nurses	Е	D
3. Allied health personnel	Е	D
4. Community physicians	Е	D

5. Prehospital personnel	Е	D
H. INTERFACILITY TRANSFERS - Will accept the transfer of all patients who:		
a. Have activated the trauma system by field triage protocols or as directed by Medical Control	E	
b. Have had their transfers requested appropriately through established inter-hospital transfer procedures	E	
I. GENERAL DESIGNATION REQUIREMENTS: All hospitals must define their capabilities and resources. This resource or capability verification must be made available to the TAC.	ACS Verification as Level I or II	Maine EMS TAC Trauma Technical Assistance Program completion and maintenance of "Guide for Trauma Care in the ED" within past 5 years

Appendix "C"

Trauma Quality Improvement Program

The quality improvement program is designed to measure and improve the quality of trauma care in Maine. Using a Total Quality approach, the QI program is designed to stimulate continual improvements in trauma care throughout the system.

Responsibilities of RTCs and TSHs

Regional Trauma Centers will meet the requirements of the performance improvement process outlined by ACS for their particular verification level.

Trauma Systems Hospitals should use the performance improvement process prescribed by ACS for Level IV centers. Maine EMS can provide the ACS Level IV PI process documents for the TSH's who need them.