



TRAUMA SYSTEM UPDATE

December 17, 2012

The Problem:

Injury is the number one killer of Arkansans between the ages of one and 44. Arkansas's injury fatality rate is 30% higher than the national average and 82% higher with respect to deaths from motor vehicle accidents. This problem is exacerbated by Arkansas' rural road system, the twelfth largest in the nation. In addition, in a study conducted by the American College of Emergency Physicians in December 2008, Arkansas was cited as having the worst system of emergency care in the nation. Prior to the passage of the Trauma System Act by the Arkansas Legislature in 2009 (see below), Arkansas was one of three states without a trauma system and the only state without a designated trauma center.

The Solution:

Arkansas's new trauma system was authorized by Act 393 (Trauma System Act) of 2009. Funding for the system commenced on July 1, 2009 (Act 1383). Having statewide designated trauma centers within a comprehensive system ensures that victims sustaining traumatic injuries will be transported to definitive care in the shortest possible time and that the treatment they receive is the best available. It is estimated that the new trauma system will save approximately 168 lives a year and \$193 million annually in our state. When combined with our primary seatbelt and graduated driver's license laws, also passed during the 2009 legislative session, the savings estimates go up to 206 lives and \$237 million annually.

Implementation:

The Arkansas Department of Health (ADH) is the agency responsible for implementation of the trauma system. There are numerous components of a successful system. The information below demonstrates the significant progress toward making a trauma system in Arkansas a reality.

Hospital Designation: The designation process is intensive for hospitals. A great deal of preparation is required. Seventy-five hospitals have submitted intent applications to become trauma centers (from Level I, the highest level of designation, to Level IV, the lowest level). To date, 58 hospitals have been designated at the following levels:

Level I (provides comprehensive clinical care and is a community resource; i.e., has education, research, and outreach components): 5

Level II (provides comprehensive clinical care; from a clinical standpoint, a Level II provides the same care as a Level I): 5

Level III (provides treatment for mild and moderate single system injuries; most traumatic injuries can be treated at a Level III facility): 19

Level IV (provides stabilization for severely injured patients; transfer to a higher level trauma center is usually required): 29

It is noted that certain out-of-state hospitals are included in the Arkansas trauma system due to the number of Arkansas trauma patients treated at these hospitals.

Funding for Hospitals:

- Level I trauma centers receive between \$1 million and \$1.5 million each year of designation
- Level II trauma centers receive between \$500,000 and \$750,000 each year of designation
- Level III trauma centers receive between \$125,000 and \$187,500 each year of designation
- Level IV trauma centers receive between \$25,000 and \$37,500 each year of designation

For FY 2013, hospitals at the various levels will receive the following amounts:

- Level I trauma centers: \$1,410,000
- Level II trauma centers: \$705,000
- Level III trauma centers: \$176,250
- Level IV trauma centers: \$35,250

The amount of money the hospitals receive for each year of designation is dependent on the amount of “carry forward” funding available in a given year. As the “carry forward” funds will diminish from FY 2012 to FY 2013, principally due to more hospitals being designated and being paid, less money over base funding is available to be distributed to participating hospitals. These funds are designed to support ongoing readiness costs for continued participation in the trauma system rather than payment for uncompensated care of trauma patients.

Funding for Emergency Medical Service (EMS) Providers: A total of 118 EMS providers across the state are participating in the trauma system. Like hospitals, participating EMS providers are eligible to receive trauma readiness funds. Each provider is funded based on the service area of the provider and the type of service (basic life support/advanced life support) afforded. Additional funds are available to providers in rural areas of the state. A total of \$3,107,031 will be distributed to EMS providers this year. Due to the reduction of “carry forward” funds, as noted above, overall funding for EMS providers for FY 2013 is down from the \$3,500,300 available in FY 2012.

Funding for EMS Training Sites: Twenty-three training sites are eligible to participate in the trauma system. These sites provide training for new emergency medical technicians (EMTs) and paramedics. A total of \$244,373 is available this year to increase our EMS workforce.

Funding for EMS Associations: The Arkansas Ambulance Association and the Arkansas Emergency Medical Technician Association are eligible to receive approximately \$69,820 each to provide advanced trauma related training to currently licensed EMTs and paramedics.

Arkansas Trauma Communication Center (ATCC): The purpose of the ATCC is to ensure that traumatically injured patients are transported to the most appropriate hospital(s) to treat their specific injuries in the shortest time possible. Call center operators (trained paramedics and nurses) triage and advise on transport of major and moderate trauma patients to hospitals with the appropriate capability to provide optimum care.

Prior to the trauma system, EMS providers transported trauma patients to the nearest hospital regardless of that facility's ability to care for the injury. In many cases the patient needed a higher level of care. Through receiving guidance from the ATCC, ambulances are now able to bypass those lower level facilities and quickly deliver patients to definitive care. If for some reason a trauma patient in a lower level facility is determined to need a higher level of care, the ATCC can also assist with the hospital-to-hospital transfer. In these instances, the receiving hospital's emergency department would often spend several hours to arrange the acceptance of the traumatically injured patient at a higher level facility. Now, with the resources of the ATCC and cooperation of the state's hospitals and EMS providers, the average time of acceptance for all trauma patients (major, moderate, and minor) has been reduced to seven minutes and 22 seconds.

Three major changes in our medical delivery system were necessary for this to be possible:

- (1) Real time notice of hospital capability and capacity to care for trauma patients (room availability and medical specialty services) is monitored 24/7 through an internet based "Trauma Dashboard" that was developed for the Arkansas Trauma System. The ATCC is able to instantly see what hospital has what services available immediately upon notification of an injured patient.
- (2) State-wide capable communications infrastructure (trauma radios) have been provided to over 500 ambulances to enable our EMS providers to call the ATCC from the scene of an accident for assistance in selecting the most appropriate hospital for the injured patient. This has proven to be effective in allowing ambulances the ability to bypass the closest hospital by providing them with information needed to make the decision to transport to a hospital that can treat specific injuries. This now makes getting trauma patients to definitive care in the shortest possible time a reality in Arkansas.
- (3) Hospitals had to change long standing policies to allow medical staff in the emergency department the ability to accept patients rather than requiring an admitting specialist to be notified by pager and, after sometimes lengthy discussions, making the decision to either accept or reject the patient.

Since January 3, 2011, the hospital destination of 29,546 trauma patients has been coordinated through the ATCC (2,223 major, 8,685 moderate, and 17,548 minor). The ATCC has facilitated 10,221 hospital transfers (1,090 major, 2,654 moderate, and 6,477 minor) and 19,325 EMS calls from the scene of an accident (2,223 major, 6,031 moderate, and 11,071 minor). Increased volume and experience continues to indicate specific areas where further improvement opportunities exist. One specific example involves serious hand injuries, in particular amputations of fingers where reattachment may be possible. Several meetings with hand specialists have been held to specifically identify where the capability and capacity exist for

these patients both in-state and out-of-state. In addition, the ATCC will begin a new practice of confirming that a hospital to hospital transfer is urgent in order to make the most effective use of our limited EMS resources.

Trauma Image Repository: The creation of the Trauma Image Repository is yet another important development as a result of our trauma system. Sixty-seven hospitals across the state are now able to upload radiological images to a secure repository and forward those to the physician specialist who will provide care at the receiving facility (i.e., a higher level trauma center). Over 5,000 such images have been forwarded to date. This system will speed up treatment from the point of injury to definitive care and will decrease the amount of repeated radiological studies performed. This is especially important for our pediatric patients.

The following is a recent experience with TIR: “TIR saved a life! A young person struck by a car while on a bicycle had an epidural hematoma and was changing neurologically. TIR pushed the films from a Level III Trauma Center to a Level I Trauma Center. The images were downloaded (within 1 min.) and the receiving trauma center was able to have an entire operating crew with neurosurgeons available when she arrived. She spent 13 minutes in the trauma room and went up to the OR where she had her epidural evacuated safely and she is doing very well. A life was saved tonight!” Todd Maxson, MD; September 28, 2012.

Governor’s Trauma Advisory Council (TAC): The TAC and its six subcommittees (Finance, Hospital Designation, Quality Improvement/Trauma Regional Advisory Councils, Injury Prevention, EMS, and Rehabilitation) meet on a monthly basis and furnish valuable guidance to ADH on development of the trauma system. This statutorily mandated 26 member committee of experts is invaluable to the success of the system.

Trauma Regional Advisory Councils (TRACs): There are seven TRACs throughout Arkansas. All meet routinely to address local needs such as regional destination protocols for EMS providers and performance improvement indicators and plans. All participating hospitals, EMS providers and other local stakeholders are active on these councils.

Performance/Quality Improvement: In addition to the current initiative to contract with a Quality Improvement Organization (see upcoming FY 2013 initiatives below), efforts have already begun to engage in performance/quality improvement at both the TRAC and TAC levels. Should situations arise in which there is a question about the performance of various components of the trauma system (e.g., hospitals, EMS providers, ATCC, etc.), these are initially referred to the performance/quality improvement subcommittees of the individual TRACs. Relevant facts are gathered and discussed among appropriate parties in an effort to determine what occurred and to improve future performance. If it is determined that the situation either cannot be resolved at the TRAC level or is a statewide “system” issue, it will be referred to the performance/quality improvement subcommittee of the TAC for resolution.

Trauma Education: A contract in the amount of \$934,000 was recently signed with the Arkansas Trauma Education and Research Foundation (ATERF). The Foundation will provide 13 trauma-related courses to a wide variety of physicians, nurses, and emergency medical services

personnel. This was identified by the TAC as being a much needed service in our state and the availability of these courses is expected to dramatically improve trauma care. A significant change has been made in the way these courses have traditionally been delivered. Prior to this contract, most courses were offered in Little Rock. Since it began providing instruction on February 16, 2012, ATERF has conducted 52 courses in 26 Arkansas counties. Over 700 health care professionals, representing 63 of our 75 counties, have attended the training sessions.

Trauma Registry: The Trauma Registry is operational statewide and is in the early stages of recording and tracking individual cases of traumatic injury from their inception through all phases of treatment, including rehabilitation. Reports are being run to identify performance improvement issues and trends in trauma treatment statewide. As of October 1, 2012, 74 hospitals are participating in the statewide trauma registry and have submitted 29,832 records.

Website Development: ADH's website at www.healthy.arkansas.gov hosts a wide range of documents concerning hospital designation and the grant process for hospitals, EMS providers, and EMS training sites. In addition, ADH completed a three-hour training video for hospitals seeking trauma center designation and two videos dealing with the ATCC. These are all located on the website under "Most Requested" on the right-hand side of the ADH home page.

Injury Prevention: A grant in the amount of \$578,000 was provided to the Injury Prevention Center (IPC) at Arkansas Children's Hospital. The IPC implements the Statewide Injury Prevention Plan designed to reduce the burden of injury mortality and morbidity. The IPC works closely with ADH's Hometown Health Improvement initiative and TRACs to engage local stakeholders. The Injury Prevention Subcommittee oversees the implementation of the Statewide Injury Prevention Plan designed to reduce the burden of injury mortality and morbidity. The committee reviews injury trend data over time to identify priorities for prevention activities and to monitor progress in injury prevention.

Rehabilitation: Beginning January 1, 2011, the Arkansas Spinal Cord Commission (ASCC) began a statewide needs assessment for rehabilitation. Rehabilitation is a critically important component of a successful trauma system. The "Trauma Rehabilitation Strategic Plan 2012-2015" presented to the TAC includes four major goals: to ensure Arkansans who sustain traumatic disabling injuries have access to high quality, comprehensive rehabilitation in our state, to create a systematic approach to capture acute, rehabilitation, and community data metrics to determine areas of improvement in trauma patient outcomes, to build the capacities of healthcare providers to deliver quality rehabilitative care, and to increase individuals' options to integrate successfully into the community. The MOA with the Spinal Cord Commission provides \$500,000 to the ASCC for this purpose for fiscal year 2013.

Burns: Grants for burn treatment readiness in the amounts of \$250,000 were made for both fiscal years 2011 and 2012 to the Burn Center at Arkansas Children's Hospital. These grants allow the Burn Center to increase education to Trauma Centers across the state on the treatment of burns and to purchase needed equipment.

Upcoming Initiatives for FY 2013:

- Contract with a qualified entity to provide quality improvement expertise to hospitals and other relevant components of the trauma system
- Continue to conduct site surveys for purposes of hospital trauma center designation
- Provide on-going funding for hospitals, EMS providers, and EMS training sites
- Ensure the continued development of the seven TRACs to provide meaningful, beneficial impact on the trauma system
- Work with the Governor's TAC to develop strategies for continued trauma system development and improvement
- Monitor grants to ensure proper utilization of funds and accountability
- Update Trauma Rules and Regulations to meet current American College of Surgeons' standards