

Bureau of EMS and Trauma System

Progress on Achieving the American College of Surgeon's Recommendations - 18 months post review

Background: In June of 2007, a multi-disciplinary group of experts from the American College of Surgeons Trauma System Consultation (ACS) group conducted a three-day review of the Arizona trauma system. In addition to reviewing a comprehensive Pre-Review Questionnaire (PRQ), the group heard approximately 12 hours of testimony from the EMS and trauma system stakeholder community. Following the conclusion of the review, the ACS prepared a report on Arizona's trauma system which includes a list of recommendations for enhancing the system. This document reports on progress made to some of these recommendations. A copy of the ACS report is available on the following website: <http://www.azdhs.gov/bems/trauma.htm>.

Leadership

Recommendation 1: Establish and fund a trauma medical director position to work under the guidance of the Bureau Chief.

Progress: In October of 2008, then Governor Napolitano released an Executive Order directing BEMSTS to accomplish three activities:

1. Hire a Trauma Medical Director;
2. Increase the number of rural hospitals that formally participate in the State's trauma system;
3. Increase the number of hospitals that submit data to the Arizona State Trauma Registry.

While the Department was under a hiring freeze at the time, the Bureau moved forward and developed a position description for the trauma medical director. Due to the hiring freeze and budget deficit the trauma medical director position could not be filled. The current Bureau EMS medical director position, which was funded at 40%, has been increased to 75% effective March 1, 2009. Dr. Bobrow will continue to serve as the EMS Medical Director and serve as the trauma medical director performing trauma system development activities.

Recommendation 2: Reevaluate the disparity between EMS and trauma system staffing within BEMSTS.

Progress: It is evident that program funding increases in this fiscal environment are unlikely and that increasing the fte numbers established by the Legislature beyond the current 4 is unlikely. Therefore the Bureau performed a strategic evaluation of its current staffing and position descriptions to identify opportunities to spread trauma system development activities among the existing workforce or to consolidate duplicated activities into a more efficient structure.

- 4 additional BEMSTS staff has been trained to participate in Level IV trauma center site surveys.
- 1 additional fte (trauma program coordinator) is funded through the trauma appropriation. This position is currently vacant and will not be filled until the hiring freeze is lifted and the funds are available.
- All BEMSTS data collection and quality improvement activities have been consolidated into a single section – the Data and Quality Assurance Section. On paper, this appears to be an fte loss for the trauma program, but this does not take into account efficiency gained Bureau wide by consolidating these specialized activities into a single group. Additionally, this ensures that all DQA initiatives benefit from the confidentiality and HIPAA protections associated with the development of this section. Additionally, the trauma section is no longer burdened with the intensive data reporting

requirements that it was previously required to complete, freeing staff to concentrate on other initiatives.

System Development

Recommendation 3: Engage the STAB in the completion of the evaluation process of the Trauma System using the framework and tools contained in the HRSA Model Trauma System Planning and Evaluation document. Conduct a trauma system needs assessment and gap analysis using the Benchmark, Indicators and Scoring tool and process;

Progress: Essentially no progress has been made. While BEMSTS staff completed this activity internally two years ago, this activity will be effective only with broad stakeholder involvement. Optimally, this would be a facilitated event that requires participants to commit to a one and a half day meeting.

Recommendation 4: Conduct in person interviews with senior hospital administrative and medical staff to assess the interest in trauma center designation among non-participating and/or non-designated Arizona hospitals;

Progress: The Bureau has been innovated in its approach to increasing participation of hospitals in the trauma system. Our focus has been, and remains, on increasing the access of citizens living in rural and frontier Arizona to structured trauma care. We continue to work closely with the University of Arizona's Rural Health Office that is providing some seed money to Critical Access Hospitals. Additionally, BEMSTS staff has:

- Sent letters to 10 rural hospital CEOs offering to provide a trauma center designation technical assistance site visit.
- Developed an innovative cost/benefit analysis utilizing data from the hospital and emergency department discharge databases and the Arizona State Trauma Registry (ASTR). This tool provides realistic social and financial cost and revenue analysis that is specific to the facility.
- In addition, BEMSTS staff has performed several pre-review visits to interested hospitals. Importantly, as of April 1, 2009 the citizens of Arizona are now served by 8 Level I Trauma Centers and 4 Level IV Trauma Centers – an increase of over 50% from this date last year. As of this report, there are two more applications pending for designation as Level IV Trauma Centers.

Recommendation 5: Develop a working document to project the potential number and location of additional trauma centers by level. See response to Focus Question #1.

Progress: Although the Bureau has worked to recruit hospitals to become designated trauma centers, projecting the number and location of additional centers by level has not been done. Arizona's trauma system is a voluntary system. The Bureau has no authority to require participation but we continue to actively pursue new participants in rural Arizona.

Recommendation 6: Develop a new comprehensive inclusive, state Trauma System Plan that includes a minimum of:

- Goals, measurable objectives, and strategies;
- Timelines for implementing trauma system goals and objectives;
- Assign responsibilities to advisory committees and staff.

Progress: The existing plan needs to be updated. This will flow from the assessment described in recommendation # 3.

Recommendation 7: Revise regional contracts to include specific trauma program requirements which support the objectives outlined in the Arizona Trauma System Plan.

Progress: Contract deliverables allow for some leeway. Regions are very cooperative and continue to conduct needs assessments including basic trauma information. BEMSTS is working with Regions to provide brief, reliable needs assessment for statewide use.

Recommendation 8: Annually evaluate and report the status of EMS and trauma system development at regional and state levels.

Progress: BEMSTS staff regularly attends the regional meetings and routinely updates the groups on EMS and trauma system initiatives. An annual report is also developed for the Department Director that provides updates and accomplishments of trauma system status and activities. The annual report is available on the trauma website and also distributed to a number of individuals by the Director's Office staff.

Recommendation 9: Tie trauma system compliance by EMS agencies and providers to the issuance of operational licenses and funding eligibility.

Progress: We believe that this recommendation is not reflective of the progress that Arizona has made and intend to continue our use of a consensus driven approach to system improvement..

Recommendation 10: Through the acute care hospital and critical access hospital licensure process, require participation in the state trauma registry at appropriate levels.

Progress: Designation and the submission of trauma data are voluntary. Data submission is only mandatory if the facility is designated as a trauma center at any level. To require participation in the registry would require statutory change. The Bureau will continue to seek to increase the number of facilities that contribute data to the trauma registry

Legislation

Recommendation 11: Provide stable funding for all levels of trauma center designation and participation.

Progress: This is very unlikely for some time due to Arizona's significant budgetary issues.

Recommendation 12: Develop guidelines for system quality/performance improvement to ensure that they are conducted in a manner that maximizes protections afforded in existing statutes (A.R.S. §§ 36-2403 & 36-2404).

Progress: Ongoing. The Bureau has established a Data and Quality Assurance Section to handle all aspects of quality improvement, data collection, evaluation, and reporting (see progress note on recommendation 2).

Recommendation 15: Seek Legislative authority to coordinate all sources of trauma system funding through ADHS/BEMSTS.

Progress: This would require statutory change. Proposition 202 funding (gaming revenue) is administered by AHCCCS.

Finances

Recommendation 18: Through the trauma registry and hospital discharge databases, annually trend financial information in an effort to document Arizona trauma care costs. Use this information for support of expanded trauma system funding.

Progress: Additional financial information is now being collected via hospital databases and will be forthcoming in the form of hospital charges not costs. The ASTR is also collecting some information in relation to trauma charges.

Recommendation 19: Consider alternate methods of distribution of the Tobacco Tax to provide for trauma system support as intended.

Progress: Tobacco tax monies (Proposition 303) were subject to appropriation by the legislature. The legislature chose to apply these funds to expand AHCCCS eligibility.

Recommendation 20: Develop limits commensurate with trauma center level for readiness cost and uncompensated care to maximize trauma funding.

Progress: AHCCCS is the agency mandated to administer the Trauma and Emergency Services Fund.

Human Resources (Workforce Resources)

Recommendation 29: Ensure that trauma center staff and other trauma system providers are represented in forums/councils for statewide resource and work force issues.

Progress: Trauma stakeholders are invited and do participate in many EMS and trauma-related activities. Additionally, each region conducts an annual assessment, including workforce issues.

Recommendation 34: Monitor current staffing pattern in the BEMSTS trauma program and anticipate increased needs.

Progress: See progress note on recommendation 2.

Education

Recommendation 36: Expand web-based and teleconferencing capabilities to deliver trauma education to all trauma care providers.

Progress: The Arizona Trauma and Acute Care Consortium provides quarterly trauma grand rounds before the business meeting. All presentations are available free at www.aztracc.org and continuing medical education credit is awarded after taking a post-test.

Prehospital Care (Emergency Medical Services Management Agency)

Recommendation 40: Increase the FTE allocation for the state EMS medical director and secure a position for the state trauma medical director.

Progress: ADHS has increased the EMS medical director's hours to provide coverage for trauma.

Ambulance and Non-Transporting Medical Unit Guidelines

Recommendation 47: Establish regulatory oversight of non-transporting units.

Progress: This would require statutory change as the Bureau does not regulate fire departments and fire districts unless they are transporting agencies. The Bureau actively participates in meetings with municipal and district first responder agencies.

Recommendation 50: Develop a “one call does it all” approach for trauma transfers.

Progress: Most of the Level I’s have instituted changes internally to their systems, which should alleviate some of the issues with getting authorization to transfer a patient. The Bureau is developing a methodology for hospital personnel to anonymously report both positive and negative scenarios related to trauma transfers.

Definitive Care Facilities (Trauma Care Facilities)

Recommendation 58: All acute care hospitals should be designated as trauma centers or participating hospitals as part of a statewide inclusive trauma care system.

- Mechanisms to encourage verification and designation of Level II, Level III and Level IV trauma centers should be established.
- Use ORHP FLEX grant monies as incentive for Critical Access Hospitals to become Level IV trauma centers.

Progress: The Bureau has been innovative in its approach to increasing participation of hospitals in the trauma system. Our focus has been, and remains, on increasing the access of citizens living in rural and frontier Arizona to structured trauma care. We continue to work closely with the University of Arizona’s Rural Health Office that is providing some seed money to Critical Access Hospitals. Additionally, BEMSTS staff has:

- Sent letters to 10 rural hospital CEOs offering to provide a trauma center designation technical assistance site visit.
- Developed an innovative cost/benefit analysis utilizing data from the hospital and emergency department discharge databases and the Arizona State Trauma Registry (ASTR). This tool provides realistic social and financial cost and revenue analysis that is specific to the facility.
- In addition, BEMSTS staff has performed several pre-review visits to interested hospitals.

Importantly, as of April 1, 2009 the citizens of Arizona are now served by 8 Level I Trauma Centers and 4 Level IV Trauma Centers – an increase of over 50% from this date last year. As of this report, there are two more applications pending for designation as Level IV Trauma Centers.

Recommendation 59: A needs assessment, based on patient volume and geography, should be performed to determine optimal or adequate number and locations of Level I-IV trauma centers.

Progress: BEMSTS, through the Data and Quality Assurance Section, is beginning to look at injury incidence by zip code, patient volume and I.S.S, the trauma system is a voluntary system. BEMSTS staff will use this information as we identify and target our outreach efforts to recruit additional trauma centers.

Recommendation 60: The lead agency should review and revise standards for Level I-IV trauma centers based on the most recent ACS Optimal Resources document. (Resources for Optimal Care of the Injured Patient 2006)

Progress: When STAB was approached about revisions to mirror ACS after the new “green book” was distributed, it suggested that we not make changes to the state designation criteria. If we pursue the changes, it will require rulemaking.

Recommendation 61: Reduce or eliminate entirely, diversion in accordance with the recommendations contained in the IOM’s report on the Future of Emergency Care in the U.S. Healthcare System. (Hospital-Based Emergency Care: At the Breaking Point, pp. 5-6, IOM, 2006).

Progress: Diversion and ambulance off-load delays have decreased significantly in Arizona. This is likely related to lighter than normal influenza loads and also to increased analysis of data, improved communication and the development of standards for diversion. More work needs to be done.

Interfacility Transfer

Recommendation 62: Develop a model transfer agreement and disseminate to all trauma centers, other acute care facilities, pediatric hospitals, spinal cord injury centers, and rehabilitation hospitals. Sample agreements placed on web-site for other facilities to use.

Progress: Hospitals, particularly the trauma centers, have transfer agreements in place as developed by the hospital attorneys. BEMSTS has placed three sample transfer agreements on the trauma web page.

Recommendation 63: Encourage implementation of transfer agreements between appropriate hospital pairs.

Progress: Many of the hospitals have established referral patterns for a higher level of care and therefore have transfer agreements in place with those hospitals.

Medical Rehabilitation

Recommendation 66: Integrate outcome data from each rehabilitation center with State Trauma Registry to benchmark functional outcomes with the acute phase of care.

Progress: Rehabilitation centers do not submit data to the trauma registry.

Recommendation 67: Transfer agreements between trauma centers and rehabilitation facilities should be developed and implemented to ensure appropriate and timely transfer of the trauma patient (to optimize the potential for return to prior level of function).

Progress: Designated trauma centers are required to have transfer agreements with rehabilitation facilities if they don't provide rehab in-house.

Information Systems

Recommendation 68: The Arizona State Trauma Registry should expand its reach to include all acute care hospitals in the state.

Progress: Non-designated hospitals may voluntarily submit data to the registry. There is no requirement for all acute care hospitals to submit data. A statutory change would be needed to require all hospitals to report.

Recommendation 69: Acquire a commercial software package at the BEMSTS to convert hospital discharge data (HDD) ICD-9-CM codes to AIS scores and a commercial probabilistic linkage software package.

Progress: This has been accomplished.

Recommendation 70: Establish a procedure for the generation of specific state prehospital and trauma registry audit filters that are reported to regional EMS councils quarterly with a process to request further data analysis based upon questions resulting from the audit filters.

Progress: Currently, the AZTQ is the quality assurance group for the trauma registry audit process, Plans are in place to develop an EMS audit group in the near future. Only blinded data may be shared with the regional EMS Councils.

Recommendation 71: Investigate methods allowing state prehospital and trauma registry data to be made available via a password protected Web site for designated EMS agencies and hospitals to dynamically evaluate their data, benchmarked to state-level data (e.g., OLAP Cube technology).

Progress: This is a goal of the Bureau.

Recommendation 72: Begin the planning and procurement process for additional FTE and resource support to sustain additional system administration and data analysis needs that will be required to link and maintain the multiple new databases that are soon to become available.

Progress: Bureau reorganized to add a new Data and QA Section with staff. Please see the response to recommendation # 2

Evaluation

Recommendation 73: Maximize the protections afforded in existing statutes pertaining to the STAB and, more specifically, the AZTQ subcommittee of the STAB to ensure that they are sufficient to protect discussions and findings from discoverability and to create a safe atmosphere for system QI activities.

Progress: Current statutes are sufficient.

Recommendation 74: Use existing data sets, within their functional limits, to help frame and answer system questions.

Progress: Ongoing.

Recommendation 75: Support the continued evolution of the AZTQ in establishing processes and standards for system evaluation and quality improvement so that when confidentiality assurance is achieved, formal system-wide evaluation and QI can begin.

Progress: Ongoing. See progress note for recommendation 2.

Recommendation 76: Move toward the expansion of the existing trauma registry to include all acute care facilities and the establishment of a statewide electronic prehospital data system, consistent with the recommendations contained in the Information Systems section of this report.

Progress: The Bureau continues to actively recruit additional participants in the trauma registry. In addition, we utilize hospital discharge data and emergency department data to help describe the nature and impact of trauma on the citizens of Arizona. The Premier EMS Agency program, a disease based EMS registry will play a key role once established.

Research

Recommendation 78: Develop a statewide trauma research consortium, linked to the activities and functions of the STAB and AZTQ, for purposes of promoting research throughout the continuum of trauma care.

Progress: The Arizona Trauma and Acute Care Consortium (AZTrACC) exists for this purpose as well as educating interested individuals in trauma care through grand rounds and continuing medical education opportunities.

Recommendation 79: Integrate injury research into regional EMS council activities, encouraging them to structure formal investigations, where possible, with an eye towards expansion into publishable research.

Progress: Interested individuals/hospitals moving forward with research opportunities using ADHS data. Bureau staff participate in the Injury Prevention Coalition and help shape priority areas.

Recommendation 81: Revisit confidentiality policies associated with the release of state trauma registry data and bring those policies into alignment with other state health-related datasets.

Progress: Statutory changes made in 2008 allow the use of confidential trauma registry data for research purposes. The statutory language was written using similar language from other registries in the Department of Health Services.

Arizona Focused Questions

1. Please identify ideas (financial and non-financial) for recruiting hospitals into the trauma system Level II through Level IV.

Financial:

Fund rural trauma centers (CAH) through the Office of Rural Health, Rural Hospital Flexibility Grant Program (FLEX).

Progress: The Office of Rural Health has provided small grants to rural hospitals for Level IV trauma center designation.

Non-financial:

Require CAH, as part of their licensing, to be verified at the appropriate level as designated trauma centers and contribute to the trauma registry database.

Progress: This would require statutory change. BEMSTS believes that by working with the Arizona Rural Health Office we can achieve significant progress without statutory change..

The Office of Rural Health and the BEMSTS should collaborate on providing technical assistance to rural facilities to assist them in attaining the highest achievable and sustainable level of trauma center designation possible.

Progress: This is being done with very positive results. Thus far, 4 Level IV designations have been made with two applications pending.

Tie acute care hospital licensing to participation in the trauma system commensurate with hospital resources. At a minimum, this includes contributions to the trauma registry data system.

Progress: This would require statutory change.

Seek FLEX funding to promote grassroots public education campaign to encourage the development of trauma centers in rural and remote areas of Arizona.

Progress: The Office of Rural Health has provided small grants to rural hospitals for Level IV trauma center designation. This was very successful.

2. Please identify priorities for supporting the rural prehospital provider and the rural health care institution.

No progress to date.

3. Does the Trauma System Planning and Evaluation Committee Consultation Team believe that Arizona's current trauma system adequately addresses trauma care for the pediatric and geriatric population? Please provide specific recommendations for improving the trauma system care for these patients.

Children:

Revise the state standards for designation of trauma centers for children using the pediatric trauma center requirements in the Optimal Resources for the Care of the Injured Patient 2006.

Progress: Current statutes and rules do not provide for a separate state pediatric trauma center designation. Pediatric requirements are included in the state criteria for those hospitals that accept pediatric trauma patients. The Arizona EMS for Children Program is actively pursuing a voluntary pediatric emergency department designation process with very broad support from the community. BEMSTS now performs an inventory of pediatric EMS equipment of every ambulance in the state on an annual basis.

Designate pediatric trauma centers.

Progress: Developing methodology and criteria.

Formalize the appointment of a pediatric surgery representative on STAB.

Progress: The Bureau was successful in acquiring additional specialty categories for the State Trauma Advisory Board. New laws 2008 included the appointment of a pediatric surgical representative to the Board. The ADHS Director appointed the Trauma Medical Director for Phoenix Children's Hospital - Dr. David Notrica.

Geriatric:

No progress to date.