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| **PRQ Merge Document** | | |
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| ***ELEMENT*** | ***SECTION 1 - ASSESSMENT*** | ***RESPONSE*** |
| ***#1*** | ***Injury Epidemiology*** |  |
| **1.A** | Describe the epidemiology of injury in your region and unique features of:  a. Children  b. Adolescents  c. Elderly People  d. Other Special Populations | Several reports are regularly developed from the Emergency Department and Hospital Discharge (HDD) databases (a population-based database) as well as from the Arizona State Trauma Registry (ASTR) which describe the epidemiology of injury in Arizona ***(Attachment 1).***  In addition, the State Trauma Advisory Board (STAB) Annual Report includes details on injury/trauma in the pediatric and geriatric populations. In 2012, the Bureau of EMS and Trauma System (BEMSTS) prepared two factsheets on young drivers and elderly drivers for the Governor’s Office of Highway Safety and one factsheet ***(Attachment 1).***on child bicycle injuries and safety for the Arizona Department of Health Service’s (ADHS) Public Information Office (PIO). |
| **1.B** | Describe the databases that are used to formulate the injury epidemiology profile (for example, population-based and clinical). | The ASTR is a National Trauma Data Bank (NTDB) compliant registry with >180K records from 2005 – 2011. It contains records from all 26 designated trauma centers plus records submitted voluntarily by 2 additional non-trauma centers.  While not yet sufficiently robust to use for reporting purposes, the Arizona Prehospital Information and EMS Registry System (AZ-PIERS) should serve as a reliable source in the near future. It is a National EMS Information System (NEMSIS) 2.2.1 compliant registry with >55K records (partial 2010, and 2011 forward)  The HDD is considered a population-based registry that includes emergency department and hospital admission patient information from all Arizona licensed hospitals. It is used by BEMSTS for injury data comparison. |
| **1.C** | Have system epidemiology profile results (for example, mortality rates, distribution of mechanism, or intent) been compared with benchmark values? If so, please provide comparisons and origins of the benchmarks. | Several tools have been prepared and are included in the packet for your review. Among them are the Z-statistic Report (Major Trauma Outcome Study MTOS/SRR report) and other regular benchmark reports that are prepared for each trauma center. Additionally, the STAB Annual Report shows several comparisons with NTDB data as well as trend data from Arizona. |
| **1.D** | Describe how emerging injury control patterns (for example, from trend or surveillance data) were identified and acted on. | In comparison with the Office of Injury Prevention (OIP), BEMSTS has limited injury prevention initiatives. BEMSTS’s Data and Quality Assurance Section (DQA) staff used the ASTR data to generate Factsheets for the Governor’s Office of Highway Safety on Elderly and Young Drivers experience with Motor Vehicle related trauma (Attachment 1).  The BEMSTS Chief is a member of the State Injury Prevention Advisory Committee (IPAC) that is organized within the OIP. The IPAC is a coalition of Injury Prevention (IP) professionals from across the state (including the level I trauma centers).  The OIP works closely with the IPAC to identify and prioritize injury prevention initiatives. There is no mandatory coordination of injury prevention initiatives nor is there an ADHS-based analysis of injury prevention outcomes though many of the facilities do analyze their initiatives for effectiveness. |
| **1.E** | Describe how ongoing and routine injury surveillance is completed and how results are shared with constituent groups. | The IPAC meets quarterly at ADHS. On an annual basis they review injury statistics (generated from both the HDD and ASTR). Annually, many different injury reports are created by BEMSTS and OIP and subsequently published on the ADHS website. Additionally, the Director frequently uses his social media outlets to distribute messaging on trauma and injury prevention. |
|  | **Injury Epidemiology**  Before the site visit:   * No additional documentation required   On-site:   * A copy of the most recent State and Territorial Injury Prevention Directors Association assessment report ***(Attachment 1 & 2)*** * Copy of the injury epidemiology report or profile ***(Exhibit A)*** | [PRQ - 11-2012 ACS Visit\Supporting Docs to PRQ\1 - Injury Epidemiology](Supporting%20Docs%20to%20PRQ/1%20-%20Injury%20Epidemiology) |
| ***#2*** | ***INDICATORS AS A TOOL FOR SYSTEM ASSESSMENT*** |  |
| **2.A** | Has a multidisciplinary stakeholder group participated in the scoring and consensus process associated with the BIS tool? If not, are there plans to do so? | Yes, the BEMSTS contracted with an AZ entity to update its state trauma plan. The plan will be based upon the results of the BIS Assessment, Conducted in summer of 2012, and the remaining recommendations from the 2007 ACS state assessment. |
| **2.B** | If the process has been completed, how were the findings used? | See Above. |
| **2.C** | Is there a date (year/month) set for a reassessment using the BIS tool to mark progress toward agreed-on goals or benchmarks? | Not yet planned. |
|  | **Indicators as a Tool for System Assessment**  Before the site visit:   * No additional documentation required   On-site:   * Copies of recommendations or actions emanating from the BIS process ***(Attachment 1)*** * Notes or minutes from any multidisciplinary stakeholder group that applied the BIS ***(Attachment 2)*** | [Supporting Docs to PRQ\2 - Indicators as a Tool for System Ax - BIS](Supporting%20Docs%20to%20PRQ/2%20-%20Indicators%20as%20a%20Tool%20for%20System%20Ax%20-%20BIS) |
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|  | ***SECTION 2 - Policy Development*** |  |
| ***#3*** | ***Statutory Authority and Administrative Rules*** |  |
| **3.A** | Describe how the current statutes and regulations allow the state or region to:  a. Develop, plan, and implement the trauma system,  b. Monitor and enforce rules,  c. Designate the lead agency,  d. Collect and protect confidential data, and  protect confidentiality of the quality improvement process. | The Arizona Revised Statutes (ARS) and Arizona Administrative Code (AAC) identify the ADHS, via BEMSTS as the lead agency for the implementation of the Arizona trauma system. While participation in the system is voluntary, those hospitals that apply for and are successfully designated as trauma centers are fully regulated. This includes the ability to investigate and enforce all standards established in law. To date, no trauma center has been de-designated. BEMSTS is also charged with developing a trauma system, aided by the 24 member statutorily identified STAB. STAB is charged with providing recommendations to ADHS on trauma system development.  All trauma centers are required to submit data to the ASTR. Specific statutory and regulatory language provide for the privacy & HIPAA compliance of data collected and analyzed with for the purpose of performance improvement. |
| **3.B** | Describe the process by which trauma system policies and procedures are developed or updated to manage the system including:   1. The adoption of standards of care, 2. Designation or verification of trauma centers, 3. Direct patient flow on the basis of designation, 4. Data collection, and   System evaluation. | Three separate statutory committees STAB, the Medical Direction Commission (MDC) and the EMS Council are charged with providing recommendations to ADHS on the EMS and trauma system. In addition there are four regional EMS councils that are statutorily authorized, and receive 8% (2% per region) of BEMSTS’s EMS budget. They are charged with performing annual assessments of the needs of their region, providing funding to the membership for education or equipment needs, developing an EMS plan and adopting guidelines for care.  While BEMSTS is authorized to adopt mandatory standards of care, this has not been the modus operandi for the state of Arizona. Instead, BEMSTS, via the statutory committees identified above, has adopted clinical care guidelines. Each Region then adopts more refined guidelines that take into account the capability and resources of their particular region.  The State triage, treatment and transport guideline is adopted from the CDC guideline with no change.  While guidelines do not have the force of law, our experience is that agencies and facilities recognize that the adoption of a practice which differs from recognized guidelines is problematic. Evidence of the effectiveness of the non-mandatory, guideline approach is visible in our success in improving the survival from out-of-hospital cardiac arrest and excellent state-wide survival rates.  There is not authority within statute and rule to limit the number of trauma centers or to regulate where they may be located. |
| **3.C** | Within the context of statutes and regulation, describe how injury prevention, EMS, public health, the needs of special populations, and emergency management are integrated or coordinated within the trauma system. | ARS §36-2225 states in part:  “A. The department shall develop and administer a statewide emergency medical services and trauma system to implement the Arizona emergency medical services and trauma system plan. The department shall adopt rules to establish standards for the following:  1. Injury prevention activities to decrease the incidence of trauma and decrease the societal cost of preventable mortality and morbidity.  2. Public access to prehospital emergency medical services.  ….”  Three Bureaus within ADHS are charged with these initiatives; Bureau of Public Health Emergency Preparedness (BPHEP), the Office of Injury Prevention (OIP) - (EMS for Children is a located within the OIP) and BEMSTS.  While only BEMSTS has significant regulatory authority, the other two Bureaus have established robust partnerships and initiatives across the State.  BPHEP has identified the county and tribal departments of health as their primary partners for achieving the goals and objectives associated with the CDC and Assistant Secretary for Preparedness & Response (ASPR) projects. Additionally, to enhance readiness across the state BPHEP has worked with all hospitals to ensure that they have an all-hazards plan in place.  Additionally, BPHEP has fostered a strong relationship with the Arizona Department of Emergency Management and together they partner on several exercises each year.  BPHEP has contributed to enhancing the state’s EMS and trauma system through the development and continuing support of the EMSystem website which monitors hospital status 24-hours a day, as well as the Have-a-Bed system which is used to poll all acute care facilities. Additionally, BPHEP provided the initial funds to purchase the electronic-patient care records (e-PCR) system which has been made available to all EMS agencies, hospitals and training programs across the state.  The OIP supports the IPAC, the EMS for Children Program and the Child Fatality Review Program.  The EMS for Children Program is supported by the Pediatric Advisory Council for Emergency Services (PACES) a standing committee of the EMS Council. The Chair of PACES sits on the EMS Council, though there is not a specific position.  PACES developed all of the pediatric protocols contained in the BEMSTS’s clinical care guidelines.  The BEMSTS Bureau Chief is a member of the Child Fatality Review team. |
|  | **Statutory Authority and Administrative Rules**  Before site visit:   * Trauma system statutes and regulations ***(Attachment 1 & Exhibit C)*** * EMS statutes and regulations ***(Attachment 1 & Exhibit C)***   On-site:   * Trauma system policies, procedures, standards, or other regulatory guidelines ***(Attachment 1 & Exhibit C)*** | [Supporting Docs to PRQ\3 - Statutory Authority and Administrative Rule](Supporting%20Docs%20to%20PRQ/3%20-%20Statutory%20Authority%20and%20Administrative%20Rule) |
| ***#4*** | ***System Leadership*** |  |
| **4.A** | How does the lead agency bring constituency groups together to review and monitor the trauma system throughout each phase of care? | ADHS involves all relevant stakeholders, including regional councils, and statutory committee members in all of its processes whether revising rules or updating existing guidelines or developing new protocols or policy.  The statutory committees meet 3 times per year as do the standing committees. All of these meetings are advertised and are open to the public. |
| **4.B** | Describe the composition, responsibilities, and activities of the multidisciplinary trauma system advisory committee(s) and the working relationship(s) with the trauma lead agency and the EMS lead agency, if they are different.   1. Identify pediatric representatives on the multidisciplinary trauma system advisory committee and any pediatric advisory groups that provide input into trauma system development. 2. Describe the process of involving experts in, and advocates for, special populations and how they help drive regional trauma system policy.   Describe how the multidisciplinary advisory committee is involved in trauma system performance evaluation (for example, review of system performance reports). | The STAB membership categories are established in A.R.S. §36-2222, and consists of 24 members:  **Statutory Committee Structure**   1. EMS Council 2. MDC 3. STAB   **Standing Committees (effectively the same as sub-committees)**   1. Protocols, Medications and Devices (PMD) 2. PACES 3. Education 4. Trauma and EMS Performance Improvement (TEPI)   Recently, in an effort to improve the flow of information and enhance coordination, the statutory committee structure was revised to establish liaison positions from each statutory committee (STAB, MDC and EMS Council) on each standing committee. Additionally, the scope of TEPI was broadened to encompass performance improvement for the emergency care system as a whole.  TEPI is charged with reviewing reports and providing recommendations for performance improvement reporting. |
| **4.C** | Provide examples of how the lead agency and trauma system leadership (for example, trauma centers, trauma medical director, nurse coordinator, trauma administrator, and other stakeholders) inform and educate policy makers, elected officials, community groups, and others about the trauma system, its strengths, and its improvement opportunities. | The Arizona Trauma and Acute Care Consortium (AZTrACC) was started by a group of surgeons in 2007 to improve the delivery of health care to injured patients throughout the state of Arizona to support collaborative research, education, and outreach activities of trauma centers in the state of Arizona. This organization has several committees including a public policy committee.  Recently, AZTrACC has submitted to the Director of ADHS letters detailing their concerns regarding the impact of additional trauma hospitals in urban/suburban Arizona. ***(See Attachment 7)*** |
| **4.D** | Describe the process to build or expand effective trauma leadership within the trauma system (for example, succession planning, leadership courses, and workshops), including the lead agency and trauma centers. | Over the past 2 years, BEMSTS has partnered with the University of Arizona Rural Health Center to conduct a level IV performance improvement workshop, webinar on Level III & Level IV designation, and a webinar on performance improvement documentation. (Attachment 1). |
| **4.E** | Describe the process by which lead agency staff would identify changes in system performance. | The DQA regularly develops trauma system and trauma center reports. The data is analyzed and trended- when possible. The Bureau Chief and Medical Director review any concerns identified during this process to make necessary changes in system performance.  Additionally, during the designation/re-designation process the site review staff regularly identifies opportunities for system enhancement. |
| **4.F** | Describe how the multidisciplinary advisory committee is involved in trauma system performance evaluation. | TEPI is charged with reviewing reports and providing recommendations for statewide reporting as well as center PI benchmarking.  DQA staff will identify potential performance and outcome measures and develop a draft report using those measures. They are presented to TEPI for their input before being adopted and reported. |
|  | **System Leadership**  Before site visit:   * A comprehensive organizational chart that identifies the lead agency staff (including contract employees) assigned to the trauma program (full or part-time) ***(Exhibit C – Organizational Charts)*** * A copy of the most recent trauma system aggregated performance improvement report generated by the lead agency ***(Attachments 4, 5, & 6 ) & (Exhibit D)*** * Organizational chart that illustrates the system oversight committee, its subcommittee, and its relationship to the lead agency ***(Exhibit C – Organizational Charts)***   On-site:   * Copies of curriculum vitae for the trauma system leadership: state EMS director, trauma system manager, state medical director, and state trauma director ***(Attachments 2 & 3)*** * A copy of minutes or meeting notes pertaining to the identification, discussion, and resolution of a trauma system (rather than a trauma center) issue ***(Exhibit K)*** | [Supporting Docs to PRQ\4 - System Leadership](Supporting%20Docs%20to%20PRQ/4%20-%20System%20Leadership) |
| ***#5*** | ***Coalition Building and Community Support*** |  |
| **5.A** | What is the status of the trauma system’s coalition (for example, What is the status of recruiting members and building a coalition? Is the coalition a strong and active coalition? Does the coalition need new energy? Who is not currently involved but should be a part of your coalition?)?   1. What is the role of the coalition members (constituents and stakeholders) in promoting trauma system development?   What is the method and frequency for communicating with coalition members? | There is no specific coalition charged with trauma system advancement. The closest example is the Arizona Trauma and Acute Care Consortium (AZTrACC) which was started by a group of surgeons in 2007 to improve the delivery of health care to injured patients throughout the state of Arizona by supporting collaborative research, education and outreach activities of trauma centers in the state of Arizona. This organization has several committees including a public policy committee. |
| **5.B** | Describe how the trauma system leadership mobilizes community partners to improve the trauma system through effective communication and collaboration.   1. How has the community been approached to identify injury control concerns? 2. What key problems has the community identified? 3. How do stakeholders bring system challenges or deficiencies to the attention of the lead agency? | BEMSTS believes that it can best improve the trauma and EMS system in Arizona by providing high quality data to our stakeholder community so that they may make informed decisions.  Lack of a booster seat law has long been recognized as a problem. Annually, a coalition of injury prevention groups have worked with the state legislature and the governor’s office of highway safety. This past legislative session they were successful in passing a booster seat law. |
|  | **Coalition Building and Community Support**  Before site visit:   * A list of organizations represented for trauma system planning or injury control (for example, multidisciplinary state advisory committee, subcommittees, and other groups supporting trauma system development) (***Exhibit F)***   On-site:   * A list of all coalition members, and identify organizations representing special populations (for example, children and people who are elderly, need rehabilitation, or are disabled) (***Exhibit F)*** * Two or three different types of communication to constituencies or the trauma system coalition (for example, notice of planning meetings, newsletter, activity report, coalition updates, or media message) (***Exhibit G)*** | [Supporting Docs to PRQ\5 - Coalition Building & Community Support](Supporting%20Docs%20to%20PRQ/5%20-%20Coalition%20Building%20&%20Community%20Support) |
| ***#6*** | ***Lead Agency and Human Resources Within the Lead Agency*** |  |
| **6.A** | Describe the number, position titles, and percentage of full-time equivalency of all personnel within the lead agency or contract personnel who have roles or responsibilities to the trauma program. | There are 32 fte’ s in BEMSTS, of which 6.3 fte’ s are allocated to the trauma system as follows:   * 3 fte trauma staff   + Section Chief   + Designation Coordinator   + Administrative Assistant * 2.5fte DQA staff * 0.3 fte Trauma/EMS Medical Director * 0.5 fte Bureau Chief   Additional support from the Business Office, Investigations and other support functions are not included. |
| **6.B** | Identify other personnel resources that support the trauma program activities of the lead agency (for example, epidemiology support from other units within the health department, public health interns) | Business office, web and IT support, Investigations all support trauma. Currently 1 intern and one post-doc are working on trauma issues. |
| **6.C** | Describe the adequacy of personnel resources available to the lead agency to sustain trauma program assessment, policy development, and assurance activities.  Identify impediments or barriers that hinder system development. | The Trauma Section Chief position was vacant for approximately 20 months. During the interim, the Bureau Chief supported the work of the Designation Coordinator and DQA staff. That position was recently filled.  With 26 trauma hospitals on a three-year designation cycle there are times when the designation coordinator may be in jeopardy of not being able to meet statutory/regulatory time frames. An additional 1.0 fte staff member to assist with regulatory issues and technical assistance would be beneficial.  The Trauma Section is well served by a full-time registrar, a full-time statistician and a 0.5 fte MPH candidate. As additional hospitals have come on board it has become evident that an additional 0.5 fte registrar would be beneficial. |
|  | **Lead Agency and Human Resources Within the Lead Agency**  Before site visit:   * A comprehensive organizational chart that identifies the position of the lead agency within the broader governmental authority (for example, health department) (***Exhibit D)*** * A job description for the trauma program manager and the trauma medical director ***(Attachment 1) & (Attachment 2)***   On-site:   * No additional documentation required | [Supporting Docs to PRQ\6 - Lead Agency & Human Resources within Lead Agency](Supporting%20Docs%20to%20PRQ/6%20-%20Lead%20Agency%20&%20Human%20Resources%20within%20Lead%20Agency) |
| ***#7*** | ***Trauma System Plan*** |  |
| **7.A** | Describe the process for the development or revision of the trauma system plan.  Include the role of advisory and stakeholder groups in the process. | Updating the 2005 trauma plan is underway. This past summer the state performed an assessment using the MTSPE BIS tool. The plan is to use the results of the BIS survey and the remaining recommendations from the 2007 ACS Survey in the development of the new trauma plan. The process was put on hold when a decision was made to invite the ACS back for a follow-up assessment. We anticipate taking this project up again in the spring following the release of the ACS recommendations.  All members of STAB and most of EMS Council were invited to participate in the BIS assessment process. A workgroup of STAB has been identified to update the trauma plan. |
| **7.B** | 1. Is there ongoing assessment of trauma resources and asset allocation within the system? | There is not. |
| **7.C** | Describe the process used to determine trauma system standards and trauma system policies.   1. How are they reviewed and evaluated? 2. What standards and policies exist for special populations, including rural and frontier regions?   How are specialized needs addressed, including burns, spinal cord injury, traumatic brain injury, and re-implantation? | Typically, a member of the public or an individual representing a stakeholder organization will ask that a topic be considered at an upcoming statutory committee meeting. Once an item is on the agenda, it will then be approved, modified, denied, or sent to a standing committee for additional work. Once it is passed out of the standing committee it is brought back to the statutory committee for final consideration.  By way of example, the pediatric clinical care guidelines were developed by and passed up through the PACES Committee to the MDC. The MDC made some edits before recommending them for inclusion in the statewide triage, treatment and transport guidelines.  In another example, the Medical Director along with an EMS researcher from the University of Arizona identified a project and sought out federal funding to implement a new public health initiative pertaining to traumatic brain injury. |
|  | **Trauma System Plan**  Before site visit:   * Copy of the written trauma system plan ***(Attachment 1 & 2)***   On-site:   * No additional documentation required | [Supporting Docs to PRQ\7 - Trauma System Plan](Supporting%20Docs%20to%20PRQ/7%20-%20Trauma%20System%20Plan) |
| ***#8*** | ***System Integration*** |  |
| **8.A** | What is the trauma system’s collaboration and integration with EMS, public health, and emergency management and programs such as:   1. prevention programs, 2. mental health, 3. social services, 4. law enforcement, 5. child protective services, and   public safety (such as, fire, lifeguard, mountain rescue, and ski patrol)? | To begin, the membership of the three statutory committees along with the 4 standing committees represents most walks of the public health, public safety and healthcare fields. Additionally, each of the 4 regions has representative membership.  With the recent changes to the structure and function of the statutory committees to create formal liaisons between and among the committees, most of the specialties effectively collaborate with the trauma system.  If DIRECT collaboration through the extended memberships of the committees and regions is not in place then there is certainly indirect collaboration.  For example, BEMSTS is not a member of the Statewide Interoperable Radio Commission, but a member of STAB is a representative. In this role he has effectively represented the interest of the emergency care industry and carried important information back to the statutory committees for dissemination among the stakeholder community. |
|  | **System Integration**   * No additional documentation required |  |
| ***#9*** | ***Financing*** |  |
| **9.A** | How does the lead agency track and analyze internal trauma system finances?   1. How does the advisory committee participate in the financial review process? 2. How frequently are trauma system financial reports published?   c. Which financial data are reported (lead agency data, health facility data, or both)? | Trauma system finances are not tracked. Trauma center charges are collected and are reflected in BEMSTS reporting initiatives. |
| **9.B** | 1. What is the lead agency’s budget for the trauma system? | $400,000 in FY 12 |
| **9.C** | What is the source of funding available to support the development, operations, and management of the trauma system (for example, general funds, dedicated funds)? | BEMSTS is funded through an annual appropriation as the EMS operating fund and receives no general funding. In addition, the USDOT Section 408 ($250,000 - FY12) supports BEMSTS’s initiatives. |
| **9.D** | What financial incentives and disincentives exist to encourage trauma center participation in the trauma system?   1. Specifically include arrangements for uncompensated and undercompensated care. | A portion of the funds earned by the Indian gaming industry are set aside into the Trauma and Emergency Services Fund to reimburse hospitals for un-recovered trauma readiness costs. These funds are distributed almost entirely (90%) to the level I trauma centers ***(Attachment 1)*** |
|  | **Financing**  Before site visit:   * A copy of the lead agency’s budgets, identifying line items directly related to goals and objectives of the trauma plan ***(Attachment 1) & (Attachment 2)*** * A recent trauma system financial report ***(Attachment 2)***   On-site:   * Letters and/or legislation that document financial or in-kind commitment * Notice of awards and abstracts (active grants) (***Attachment 3)*** | [Supporting Docs to PRQ\9 - Financing](Supporting%20Docs%20to%20PRQ/9%20-%20Financing) |
|  | ***SECTION 3 - Assurance*** |  |
| ***#10*** | ***Prevention and Outreach*** |  |
| **10.A** | List organizations dedicated to injury prevention within the region and the issues they address (for example, MADD, SADD, SafeKids Worldwide, Injury Free Coalition for Kids, American Trauma Society, university-based injury control programs). | Waiting information from program. |
| **10.B** | Describe how the trauma lead agency has funded and coordinated system-wide injury prevention or outreach activities.   1. Which injuries (including pediatric injuries) have been identified and prioritized for intervention strategies? 2. Identify any dedicated lead agency or other agency staff member (full- or part-time) responsible for injury prevention outreach and coordination for the trauma system.   What is the source of funding? | The Office of Injury Prevention in located in the Bureau of Women’s and Children’s Health and comprises a staff of 4.  Programs in the Office include: Safe Kids Arizona, Child Fatality, Emergency Medical Services for Children, Pediatric Regionalization, Injury Prevention, Maternal Mortality, & Sudden Unexplained Death Case Registry.  The Arizona Injury Program is funded by CDC- Core Injury and Violence grant.  Arizona has 4 focus areas with this funding: ATV injuries for all Arizonans, Motor vehicle crash injuries age 5-9, Falls for older adults and Unintentional Poisoning (Prescription Drug Abuse) |
| **10.C** | Explain the evaluation process for injury prevention projects that are conducted by the lead agency, trauma facilities, or other community- based organizations.  Identify any gaps in injury prevention efforts for population groups in the state. | Arizona uses both process and outcome data.  Gaps in injury prevention efforts are related more to limited resources both human and fiscal. |
|  | **Prevention and Outreach**  Before site visit:   * A list of the number and nature of injury prevention activities conducted throughout the trauma system in the past year (for example, activities directed at which mechanism or type of injury or which patient population, such as children and elderly people) (***Exhibit B)***   On-site:   * A copy of the state injury control and prevention plan. ***(Exhibit A)*** * A representative sample of brochures, pamphlets, fliers, and curricula for educational programs on injury prevention ***(Attachment 1)*** | [Supporting Docs to PRQ\10 - Prevention & Outreach](Supporting%20Docs%20to%20PRQ/10%20-%20Prevention%20&%20Outreach) |
| ***#11*** | ***Emergency Medical Service*** |  |
| **11.A** | Provide information on the last assessment of EMS, including assessor and date.   1. Describe the EMS system, including the number and competencies (that is, ALS or BLS) of ground transporting agencies, non-transporting agencies, and air medical resources. 2. How are these resources allocated throughout the region to serve the population? 3. Describe the availability of enhanced 911 and wireless E-911 access in your region. 4. Identify any specialty pediatric transporting agencies and aeromedical resources.   Describe the availability of pediatric equipment on all ground transporting units. | The last EMS specific assessment was performed by the NHTSA Office of EMS in the 1990’s.  BEMSTS regulates the licensing of EMT’s, EMT training programs, ALS base hospitals and ambulance services. First response agencies are not regulated by BEMSTS. Air ambulance services are also licensed by BEMSTS.  Through the Certificate of Necessity process (ground ambulances only), ambulance services are assigned a specific geographic operating area with specified response time, clinical capability, and billing rate requirements. The CONs are not necessarily exclusive, in fact many areas of the state have overlapping CON’s. Each ambulance service is REQUIRED to bill for their service.  There is remarkable stability in the ground ambulance industry, over the past 6 ½ years two ambulance services in rural Arizona have turned over and none (beyond consolidation) have turned over in urban or suburban Arizona.  Arizona has approximately 70 rotor wing air ambulances owned/operated/leased primarily by the three national air ambulance corporations. While they actively compete for market share in Arizona we have seen a significant improvement in their willingness to participate in the regional EMS councils and statutory committees.  BEMSTS statutes and rules are prescriptive in regards to air ambulance equipment and clinical capabilities of staff involved in pediatric or maternal/child missions.  Of all wireline telephone services provided, **100%** include access to 9-1-1.  Of this, **96%** of all telephone services have Enhanced 9-1-1.  See the 9-1-1 status map which shows types of service.  Wireless Enhanced 9-1-1 Phase II is available in Cochise, Graham, Maricopa, Mohave, Pima, Pinal, Yavapai, Santa Cruz and Yuma Counties as well as the Page area of Coconino County.  In these areas, when a 9-1-1 call is placed from a wireless phone, the location of the caller is depicted on a map ***(Attachment 2- Maps)***  For ground ambulances, Rules are prescriptive for the equipment requirements. The National EMS for Children Pediatric Equipment List contains items that are NOT on the required equipment list for Arizona ambulances. See ***(Attachment 1)***. |
| **11.B** | Describe the procedures for online and off –line medical direction, including procedures for the pediatric population.  Describe how EMS and trauma medical direction and oversight are coordinated and integrated. | Every EMS provider must have continuous access to on-line medical direction. All providers offering ALS services must also have off-line medical direction.  Many Arizona EMS agencies use ALS base hospitals to provide both off and on-line medical direction. Other agencies will contract with individual physicians to perform these services.  ALS base hospital physicians must be board certified in emergency medicine or maintain current pediatric competency. |
| **11.C** | Describe the prehospital workforce competencies in trauma:   1. Initial training and certification/licensure requirements 2. Continuing education and recertification/re-licensure requirements   Pediatric trauma training requirements for recertification | Arizona’s regulated EMS training programs will likely have an additional alternative to the National Registry of EMTs sometime in 2013 or 2014.  BEMSTS does not verify continuing education hours and allows for three methods for recertification   * Take and pass a traditional refresher course, * Take and pass a recertification challenge test, * Attest to CE consistent with regulatory requirements.   Our Rules pertaining to refresher content are consistent with the NREMT requirements, including the pediatric component.  The EMS for Children program supports pediatric education attendance in each of the four EMS regions. Two conferences, one statewide, the other regional, are directly supported by the EMS-C program and offer pediatric specific content. |
|  | **Emergency Medical Services**  Before site visit:   * + Guidelines for patient care delivery decisions (primary or in-field triage and destination designation guidelines)***(Exhibit J)***   + Map identifying the location of aeromedical resources in the region ***(Attachment 2- Maps)***   On-site:   * + Protocols dictating level of EMS response (ALS or BLS), mode of transport, and disposition of the patient (***Attachment 3)***   + Requirements for medical oversight of all levels of EMS agencies, ALS and BLS, transporting and nontransporting ***(Exhibit J)***   + Prehospital care treatment protocols (ALS and BLS), including pediatric protocols and geriatric protocols if available ***(Exhibit J)*** | [Supporting Docs to PRQ\11 - Emergency Medical Services](Supporting%20Docs%20to%20PRQ/11%20-%20Emergency%20Medical%20Services) |
| ***#12*** | ***Definitive Care Facilities*** |  |
| **12.A** | Describe the extent to which all acute care facilities participate in the trauma system.  Describe the availability and roles of specialty centers within the system (pediatric, burn, TBI, SCI) | Among the variety of capabilities and offerings of Arizona’s trauma centers are the following. This is not meant to be an inclusive list.  **Pediatric Trauma Care**  Phoenix Children’s Hospital is an ACS verified pediatric level I trauma center. Maricopa Medical center is an ACS verified pediatric Level II.  All trauma centers must be able to resuscitate and stabilize pediatric trauma patients.  The EMS for Children program is in the middle of a statewide effort to classify emergency departments based upon their pediatric capability.  **Burn Care**  The Maricopa Medical Center is an ABA verified level I burn center. St. Luke’s Hospital in Phoenix is a non-verified burn center and the University of Arizona Medical Center has a burn surgeon.  **TBI, SCI**  The Barrow Neurologic Institute is neurologic and spinal injury program within St. Joe’s hospital, a level I trauma center in Phoenix. |
| **12.B** | Describe the roles of the non-designated acute care facilities in the trauma system.  a. Address their representation on the regional trauma committee.  b. Do they submit registry and/or financial data?   1. c. What is their degree of engagement in the system-wide performance improvement process? | Non trauma centers are represented on the State Trauma Advisory Board. Any facility that accepts EMS patients is eligible to participate in any of the four EMS regional councils. In reality, participation is greatest from those facilities that are ALS Base Hospitals and/or trauma centers.  All hospitals contribute data to the HDD. BEMSTS uses HDD in its normal PI reporting activities.  Non trauma centers are not required to submit trauma registry data although two do so voluntarily.  The membership of TEPI does not include a non-trauma hospital, although participation is not limited to members. ALS base hospitals are represented on TEPI. |
| **12.C** | Describe the process for verification and designation. Briefly outline the extent of authority granted to the lead agency to receive applications and to verify, designate, and de-designate regional trauma centers. | BEMSTS has full authority excluding the ability to limit or remove designation based on geographic factors. |
| **12.D** | Describe your standards for trauma center verification (including pediatric standards) and the extent to which they are aligned with national standards.   1. Describe any waivers or program flexibility granted for centers not meeting verification requirements. 2. Describe the process and frequency of use for de-designation of trauma centers. | For level I, II or III trauma centers each facility may choose to be ACS Designated (ACS Criteria) or State Designated (AZ Criteria). In general, the difference between the AZ and ACS criteria relate to research and residency programs.  As BEMSTS became more experienced with the designation of level IV trauma centers over the past three years, we have been much more demanding in the level of preparation required of the facilities before the designation site visit. This has allowed the site visit team to offer some very specific and targeted recommendations.  Over the past several years BEMSTS has received between 3 and 5 comments suggesting that one or another of the trauma centers was failing or had failed to meet designation/verification criteria. BEMSTS has looked into each of these events and any that actually existed were quickly resolved.  Two waivers have been granted; one dealing with a requirement for a residency program and a second one dealing with a requirement for transfer agreements. Note: One waiver has been resolved and the other is on track with their corrective action plan.  No trauma center has been de-designated. |
| **12.E** | Outline how the geographic distribution and number of designated acute care facilities is aligned with patient care needs.   1. Describe the process by which additional trauma centers are brought into the system. 2. Describe the system response to the voluntary withdrawal of designation by acute care facilities. 3. Describe the mechanism for tracking and monitoring patient volume and flow between centers and how this influences the overall configuration of designated facilities. | BEMSTS does not have the authority to limit the number of trauma centers based upon need or geography.  Since the ACS site visit and recommendations in 2007, BEMSTS has worked very hard to recruit rural and frontier hospitals into the trauma system. Our partnership with the University of Arizona’s Center for Rural Health was pivotal to the recruitment process.  Two facilities on the Navajo Nation have become AZ designated Level IV Trauma Centers. One has communicated its interest to ACS in becoming a Level III.  One level IV trauma center voluntarily elected to withdraw from the system. BEMSTS communicated with the CEO of the institution in an effort to identify the cause and to seek a remedy. We do not believe that there has been a significant impact to the system with the loss of that institution.  BEMSTS has not undertaken a specific assessment of transfer and catchment patterns to analyze system configuration. |
| **12.F** | Describe your system for assessing the adequacy of the workforce resources available within participating centers.   1. Address nursing and subspecialty needs (trauma or general surgery, intensivists, neurosurgeons, orthopedic surgeons, anesthetists, pediatric surgeons, and others, as required). 2. What human resource deficiencies have been identified, and what corrective actions have been taken? | BEMSTS has not undertaken this initiative. |
| **12.G** | Describe the educational standards and credentialing for emergency physicians and nursing staff, general surgeons, specialty surgeons, and critical care nurses caring for trauma patients in designated facilities.  What regional educational multidisciplinary conferences are provided to care providers? Who is responsible for organizing these events? | Arizona Administrative Code Exhibit I. Arizona Trauma Center Standards requires the following:  In a Level I or II trauma center, a non-board-certified physician may be included in the trauma service if the physician:   1. If a surgeon, is in the examination process by the American Board of Surgery: 2. If the trauma medical director, is a Fellow of ACS: 3. Unless the trauma medical director, complies with the following:    1. Has a letter written by the trauma medical director demonstrating that the health care institution’s trauma program has a critical need for the physician because of the physician’s individual experience or the limited physician resources available in the physician’s specialty;    2. Has successfully completed an accredited residency training program in the physician’s specialty, as certified by a letter from the director of the residency training program;    3. Has current ATLS certification as a provider or instructor, as established by documentation;    4. Has completed 48 hours of trauma CME within the past three years, as established by documentation;    5. Has attended at least 50% of the trauma quality assurance and educational meetings, as established by documentation;    6. Has been a member or attended local, regional, and national trauma organization meetings within the past three years, as established by documentation;    7. Has a list of patients treated over the past year with accompanying ISS and outcome for each;    8. Has a quality assurance assessment by the trauma medical director showing that the morbidity and mortality results for the physician’s patients compare favorably with the morbidity and mortality results for comparable patients treated by other members of the trauma service; and    9. Has full and unrestricted privileges in the physician’s specialty and in the department with which the physician is affiliated; or 4. Complies with the following:    1. Has provided exceptional care of trauma patients, as established by documentation such as a quality assurance assessment by the trauma medical director;    2. Has numerous publications, including publication of excellent research;    3. Has made numerous presentations; and    4. Has provided excellent teaching, as established by documentation.   In a Level III trauma center, only the trauma medical director is required to be board-certified.  16 hours CME/year is required for Level I and II centers  This criterion applies only to the trauma medical director, the emergency medicine liaison, the neurosurgical trauma liaison, and the orthopedic trauma liaison. This criterion is satisfied by an average of 16 hours annually, or 48 hours over three years, of verifiable external trauma-related CME. External CME includes programs given by visiting professors or invited speakers and teaching an ATLS course.  ATLS certification requirement for all trauma centers are as follows:  Among the trauma surgeons, only the trauma medical director is required to have current ATLS certification. The other trauma surgeons are required to have held ATLS certification at one time. Among the emergency medicine physicians, only non-board-certified physicians are required to have current ATLS certification. The other emergency medicine physicians are required to have held ATLS certification at one time.  There are no state educational or credentialing requirements for nursing and mid-level providers.   1. Arizona Trauma & Acute Care Consortium (AZtrACC) – Annual - Southwest Trauma and Acute Care Symposium (STACS)   The University of Arizona Medical Center in conjunction with The University of Arizona College of Medicine – Annual - Southwest Regional Trauma Conference  AzCEP & ITLS on the River – Phoenix-based chapter of International Trauma Life Support (ITLS) – Annual  Trauma in the White Mountains – Northern Arizona Emergency Medical Service Council (NAEMS) – University of Arizona – Annual  Rural Trauma Team Development Course (rttdc) – Banner Good Samaritan Medical – The Office of Rural Health Flex Grant Program - available upon request at least annually  Phoenix Trauma Symposium – St. Joseph’s Hospital and Medical Center – Annual  Pediatric Traumatic Brain Injury – Phoenix Childrens Hospital  Trauma Update 2011- Portal Rescue, Inc.,  Level III and Level IV Trauma Center PI Webinar – Arizona State Department of Health, Bureau of EMS and Trauma System –University of Arizona office of Rural Health Flex Grant Program |
|  | **Definitive Care Facilities**  Before site visit:   * + Copy of the document outlining the process for designation, re-designation, and de-designation (if necessary) of trauma centers ***(Attachment 1)***   + Copy of the standards (if other than ACS) used for trauma center verification ***(Attachment 1)***   + A list of acute care facilities with the following data for each: * Level of designation/verification ***(Attachment 2)*** * A geographic map showing the location, catchment areas, and designation for all acute care facilities ***(Attachment 3)***   + Patient volume (total and with Injury Severity Score [ISS] >15, if available) ***(Attachment 4)***     - Emergency department (ED) visits     - Admissions   + A list of trauma facilities with their level of designation and trauma patient volume (total and with ISS >15) ***(Attachment 5)***   On-site:   * + A copy of the sample contract or memorandum of understanding between the lead agency and a trauma center if such exists ***(Attachment 6)*** * Flyer for the most recent multidisciplinary educational trauma conference ***(Exhibit K)*** | [Supporting Docs to PRQ\12 - Definitive Care Facilities](Supporting%20Docs%20to%20PRQ/12%20-%20Definitive%20Care%20Facilities) |
| ***#13*** | ***System Coordination and Patient Flow*** |  |
| **13.A** | Describe the source of prehospital trauma triage protocols, and specify whether they are consistent with national guidelines.  Describe how children and patients with severe TBI and SCI are triaged from the field to appropriate facilities. | The STAB adopted the CDC Field Triage schema. Each region also adopted the schema with some minor variations. Ultimately, the final decision is made at the physician/EMT interface where some variation exists.  Each trauma center is expected to evaluate, stabilize and transport (if necessary) any trauma patient. Each region has specific pediatric field triage, treatment and transport guidelines. Most agencies partner with an ALS Base Hospital whose duties include PI to review, develop PI reports and educate on specific audit filters with their EMS agencies. |
| **13.B** | Within the system, what criteria are used to guide the decision to transfer patients to an appropriate resource facility and are these criteria uniform across all centers? | The CDC Field Triage schema does shed some light on which types of patients need to be referred to the highest level of trauma care. To assist in that decision process, the State Trauma Advisory Board and the EMS Council approved ***(Attachment 1& 2)*** which has been distributed to all regions, EMS agencies, and hospitals and has been placed on BEMSTS’s website. |
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| **13.C** | Specify whether there are inter-facility transfer agreements to address the needs of each of the following:   1. Transfer to an appropriate resource facility 2. TBI 3. SCI 4. Re-implantation 5. Burns 6. Children 7. Repatriation | Transfer to an appropriate resource facility  TBI – Not required  SCI – Not required  Re-implantation – Not required  Burns – Required for trauma center levels  Children – Not required  Repatriation – Not required  Inter-facility transfer agreements not listed above are required for all trauma center levels that do not provide the following services   1. Acute Hemodialysis 2. Regional acute spinal cord injury rehabilitation center 3. Rehabilitation facility |
| **13.D** | 1. Describe the system-wide policies addressing the mode of transport and the type and qualifications of transport personnel used for inter-facility transfers. | ***(Attachment 1)*** provides some general guidance on the mode of transport. The Bureau has not developed specific recommendations on ground transport personnel requirements though it has done so in rule for flight personnel. |
| **13.E** | 1. Specify whether there is a central communications system to coordinate inter-facility transfers. Describe how this system has access to information regarding resource availability within the region. | There is no centralized communications center to coordinate inter-facility transports. The concept has been discussed and explored but has not achieved sufficient support to get off the ground. Some of the hospital systems have put significant resources into such a system for its facilities.  BPHEP has contributed to enhancing the state’s EMS and trauma system through the development and continuing support of the EMSystem website which monitors hospital status 24-hours a day, as well as the Have-a-Bed system which is used to poll all acute care facilities. |
|  | **System Coordination and Patient Flow**  Before site visit:   * EMS triage criteria for trauma team activation ***(Attachment 1)*** * Interfacility transfer criteria ***(Attachment 3)***   On-site:   * Sample copy of an interfacility transfer agreement ***(Attachment 4)*** * Policy addressing the mode of transport and type and qualifications of transport personnel used for field transport and interfacility transfers * Minutes of any meeting documenting ongoing quality improvement of transfer criteria ***(Exhibit K)*** * Any policies or procedures related to repatriation | [Supporting Docs to PRQ\13 - System Coordination & Patient Flow](Supporting%20Docs%20to%20PRQ/13%20-%20System%20Coordination%20&%20Patient%20Flow) |
| ***#14*** | ***Rehabilitation*** |  |
| **14.A** | Provide data about the number of rehabilitation beds and specialty rehabilitation services (SCI, TBI, and pediatric) available within the trauma system’s geographic region. On average, how long do patients need to wait for these rehabilitation beds? Does the average wait vary by type of rehabilitation needed? | In general, Arizona has average access to qualified rehabilitation care but, patients with poor or no health insurance coverage are less likely to receive state of the art rehabilitation care. Hospitals across the State struggle with re-patriation issues for Mexican or Central American nationals. Like other states, access to long-term rehab facilities for ventilator dependent patients is difficult. |
| **14.B** | 1. Describe how existing trauma system policies and procedures appropriately address treatment guidelines for rehabilitation in acute and rehabilitation facilities. | These topics have not been included in our regulatory language and have not been developed within policy. |
| **14.C** | Identify the minimum requirements and qualifications that rehabilitation centers have established for the physician leaders (for example, medical director of SCI program, medical director of TBI program, and medical director of rehabilitation program). | None have been developed as they pertain to trauma care. |
| **14.D** | 1. Describe how rehabilitation specialists are integrated into trauma system planning and advisory groups. | A rehabilitation expert is included as a specific position on the STAB. |
|  | **Rehabilitation**  Before site visit:   * A report that specifies the proportion of patients with SCI, TBI (Abbreviated Injury Score for the head ≥3) major trauma (ISS >15) and pediatric patients (age ≤12 years, ISS >15) with a discharge disposition listed as an inpatient rehabilitation center ***(Attachment 1)*** * A list of the rehabilitation centers and their CARF accreditation status ***(Attachment 2 &3)***   On-site:   * A list of rehabilitation specialists participating in trauma system planning * Data pertaining to the number of inpatient beds designated for rehabilitation and staff-to-patient ratio ***(Attachment 2)*** * A list of the rehabilitation data elements that are transferred to the trauma management information system * A list of the number of new major trauma, pediatric, SCI, and TBI admissions to rehabilitations centers in the region | [Supporting Docs to PRQ\14 - Rehabilitation](Supporting%20Docs%20to%20PRQ/14%20-%20Rehabilitation) |
| ***#15*** | ***Disaster Preparedness*** |  |
| **15.A** | When was the last assessment of trauma system preparedness resources conducted, and what were the significant findings of the assessment as they relate to emergency preparedness? | This is ongoing by the facility. Hazard Vulnerability Assessment (HVA) is being done this year as part of a grant requirement for preparedness. |
| **15.B** | What actions were taken to remediate or mitigate the gaps identified through tabletop or simulated responses in disaster drills among the acute care facilities participating in the system? | After Action Reports (AAR)/Improvement Plans (IP) for every exercise are conducted. Changes are made and then re-exercised to re-evaluate. All of our After Action Reports (AAR’s) are on Lessons Learned Information Sharing (LLIS) and copies are kept in the BPHEP. Latest series of table top exercises was on alternate care sites. |
| **15.C** | What is the trauma system plan to accommodate a need for a surge in personnel, equipment, and supplies? | BPHEP maintain a cache of Alternate Care Site (ACS) supplies in our warehouse. Personnel are obtained either through the medical reserve corp (with no emergency declaration) or Emergency Service and Registration-Volunteer Health Professional ESAR-VHP if there is a declaration.  With BPHEP support, BEMSTS developed the **Alternate** Triage, Treatment, and Transport Guidelines for use during a state-wide mass care event. |
| **15.D** | How is the trauma system integrated into the state’s incident command system and the communications center? | Each facility operates utilizing HICS which ties them to the county health department which in turn is tied to the state health department. |
| **15.E** | What strategies and mechanisms are in place to ensure adequate inter-hospital communication during an MCI? | Memorandums of Understanding (MOU’s) are in place to share information and resources. The information can be coordinated at the county or state level with the ability to disseminate information to everyone. |
|  | **Disaster Preparedness**  Before site visit:   * An organizational chart identifying the relationships among key emergency management agencies (trauma system, EMS, public health, emergency management) ***(Attachment 1)***   On-site:   * A sample of minutes from joint agency emergency management planning meetings from the past year ***(Attachment 2)*** * After-action report of jointly conducted (multiple emergency management agencies) simulated or tabletop drills that include the trauma system’s capability to respond to MCIs ***(Attachment 3)*** | [Supporting Docs to PRQ\15 - Disaster Preparedness](Supporting%20Docs%20to%20PRQ/15%20-%20Disaster%20Preparedness) |
| ***#16*** | ***System-wide Evaluation and Quality Assurance*** |  |
| **16.A** | What is the membership of the committee charged with ongoing monitoring and evaluating of the trauma system?   1. To whom does it report its findings? 2. How does it decide what parameters to monitor?   What action is it empowered to take to improve trauma care? | The TEPI is formed to assist the Statutory Councils and BEMSTS in carrying out the duties described in statute and rule relating to quality improvement of the State’s EMS and trauma system. This is accomplished by aiding BEMSTS in the development of guidelines, reports, and recommendations to the Statutory Councils. Importantly, TEPI’s review of provider level data is limited to routine system performance indicator analysis and cannot be used for regulatory purposes.  Specifically, TEPI shall:  • Provide recommendations to BEMSTS for the development of system performance indicators relating to the emergency care system inclusive of dispatch, first response, transport, emergency department, in-patient and rehabilitative care.  • Review and suggest changes to BEMSTS developed reports based upon system performance indicators  • Recommend to the Statutory Councils specific system performance enhancements to the State’s emergency care system.  • Review and consider evidence-based research dealing with emergency care system and make recommendations to the Statutory Councils for possible changes in system practice.  • Periodic review and recommendations for changes in the data-sets pertaining to emergency care system registries. |
| **16.B** | Describe the trauma system performance improvement efforts as they pertain to the system for the following groups of providers in the context of system integration:   1. Dispatch centers 2. Prehospital provider agencies 3. Trauma centers 4. Other acute care and specialty facilities   Rehabilitation centers | Over the course of the next year TEPI is expected to finalize a recommended set of PI tools that EMS agencies can adopt. Additionally, TEPI is set to review, edit, and approve a PI tool kit for level IV trauma centers at its next meeting.  BEMSTS (in collaboration with the Bureau of Tobacco and Chronic Disease) recently initiated a PSAP PI system designed to reduce the time from discovery of cardiac arrest to initiation of CPR.  No specific PI efforts targeting rehabilitation centers are planned. |
| **16.C** | List the process and patient outcome measures that are tracked at the trauma system level, including measures for special populations. | BEMSTS is statutorily required to provide reports from ASTR to all facilities that submit data. To that end, BEMSTS develops reports that analyze performance of the facility and benchmarks that performance against a blinded, aggregate of the other trauma centers. The content of the report varies. Please see attachments. |
| **16.D** | As part of your system-wide performance improvement, specify whether each of the following is assessed on a regular basis:   1. Time from arrival to a center and ultimate discharge to a facility capable of providing definitive care. If yes, specify the mean time to transfer. 2. Proportion of patients with injury more severe than a predefined injury severity threshold (for example, ISS >15, or other criteria) who receive definitive care at a facility other than a Level I or II trauma center (under-triage)   Proportion of patients with injury less severe than a predefined injury severity threshold (for example, ISS <9) who are transferred from any facility to a Level I or II trauma center (over-triage) | Please see ***(Attachment 1)***   1. Yes 2. Periodically 3. Not yet evaluated |
| **163.E** | Describe how your system addresses problems related to significant over-triage or under-triage, both primary and secondary. | BEMSTS has produced an over-under triage report ***(Attachment 2)***. Like other reports BEMSTS has produced, it lead to a series of discussions and recommendations for fine-tuning of the analysis. |
|  | **System-wide Evaluation and Quality Assurance**  Before site visit:   * List of the agencies represented on the committee responsible for trauma system quality assurance ***(Attachment 3)***   On-site:   * Trauma system annual reports and fact sheets for the past 2 years ***(Attachments 4 & 5)*** * A copy of minutes or meeting notes pertaining to the identification, discussion and resolution of a trauma system (rather than a trauma center) issue ***(Exhibit K)*** | [Supporting Docs to PRQ\16 - System-Wide Evaluation & Quality Assurance](Supporting%20Docs%20to%20PRQ/16%20-%20System-Wide%20Evaluation%20&%20Quality%20Assurance) |
| ***#17*** | ***Trauma Management Information Systems*** |  |
| **17.A** | Which agency has oversight of the trauma MIS?   1. Describe the role and responsibilities of the lead agency in collecting and maintaining the data.   How are the completeness, timeliness, and quality of the data monitored? | The DQA Section of BEMSTS oversees the collection, monitoring, validation, and release of trauma data pursuant to ARS §*§* 36-2220 and 36-2221, and AAC R9-25-1401, et seq.  ADHS maintains the ASTR and oversees the mandatory quarterly data submission process. Reduced Data Set Level IV hospitals enter data directly into the state database and the Full Data Set using Trauma One® software via a remote access VPN process. Full Data Set hospitals enter data into the Trauma One® software at their hospitals and then import into the ASTR. Quarterly submissions are tracked in a continuously updated submission log and hospitals are contacted by the State Trauma Registry Manager when they do not submit per statutory deadlines. If compliance becomes an issue, the DQA Section Chief and Trauma Program Section Chief are notified. ASTR staff worked with the software vendor to create an AZ Validation Tool that can be run at the hospital and at the state level that identifies required fields that were left blank, data points that fail the NTDS validation checks, and data points that fail the additional state-only checks. Hospitals are expected to run validation before quarterly submission, but it is also run at the state level to confirm corrections have been made. The state validation results are sent to hospitals and corrections are re-submitted until the data are acceptable. A few items not included in the state validation tool (e.g., comparing E-codes to the Position in Vehicle field) are run manually by the State Trauma Registry Manager and submitted to hospitals for review/correction. A final run is done at the end of each reporting year, before closing out the data for the annual trauma report.  Three years ago, BEMSTS instituted an Inter-Rater Reliability data validation process that has been used with registrars from the level I and level IV trauma centers. |
| **17.B** | Specify which of the following data sources are linked to the information system. Describe the method of linkage (for example, probabilistic or deterministic).   1. Motor-vehicle crash or incident data 2. Law enforcement records 3. EMS or other transporting agency records 4. ED records 5. Hospital records (hospital trauma registries) 6. Hospital administrative discharge data 7. Rehabilitation data 8. Coroner and medical examiner records 9. Financial or payer data   Dispatch | None of these data sources are currently linked.  The DQA Section is collaborating with the Governor’s Office of Highway Safety and the Arizona Department of Transportation to establish a linkage process with crash data and the AZ-PIERS and ASTR, facilitated by the use of NHTSA Section 408 Grant Funds.  ASTR-required prehospital data captured by AZ-PIERS will be linked with the ASTR to populate prehospital data elements of ASTR.  ED data in the Hospital Discharge Database (HDD) are routinely extracted by DQA Section staff to augment ASTR data and trauma-related research.  The DQA Section has reached out to the Agency for Healthcare Research and Quality (ARHQ) within the Health and Human Services Department on linking ASTR, HDD, and AZ-PIERS data. We’re waiting to hear back from an AHRQ representative in September 2012. |
| **17.C** | 1. What are the regional trauma registry inclusion criteria? | The TEPI standing committee revised the ASTR inclusion criteria for records with ED/Hospital Arrival Dates of 1/1/2012 forward. The only change was 1B of the criteria:  1. A. A patient with injury or suspected injury who is triaged from a scene to a trauma center or ED based upon the responding EMS provider’s trauma triage protocol; OR  B. \*\*Level III and Level IV Trauma Centers must report all patients with injury that are transported via EMS to another acute care hospital or trauma center;OR  2. A patient with injury or suspected injury for whom a trauma team activation occurs; OR  3. A patient with injury who:   * 1. Is admitted as a result of the injury OR who dies as a result of the injury AND   2. Has an ICD-9-CM N-code\* within categories 800 through 959 AND   3. Does not ONLY have:  1. Late effects of injury or another external cause:   ICD-9-CM N-code within categories 905 through 909   1. A superficial injury or contusion:     ICD-9-CM N-code within categories 910 through 924   1. Effects of a foreign body entering through an orifice:   ICD-9-CM N-code within categories 930 through 939   1. An isolated femoral neck fracture from a same-level fall:   ICD-9-CM N-code within category 820 AND    ICD-9-CM E-code within category E885 or E886   1. An isolated distal extremity fracture from a same-level fall:   ICD-9-CM N-code within categories 813 through 817 or 823 through 826 AND  ICD-9-CM E-code within category E885 or E886   1. An isolated burn:   ICD-9-CM N-code within categories 940 through 949 |
| **17.D** | Which stakeholders had a role in selecting the data elements for inclusion into the regional registry?   1. From what source(s) were the data field definitions derived?   What pediatric data elements are captured? | STAB stakeholders played a key role when the ASTR data fields were identified. They essentially mirror the NTDB data element list. |
| **17.E** | 1. What local or system-wide reports are routinely generated and at what frequency? | The STAB Annual Report is published and presented to the ADHS Director by October 1 each year. The DQA Section generates quarterly reports to the participating trauma centers, with topics that vary by subject matter. In addition, a number of ad-hoc reports are generated each year. |
| **17.F** | Are data contributed to the National Trauma Data Bank (NTDB) or other outside agencies? If so, please specify which agencies. | The ADHS does not contribute data to the NTDB, however, all Level I trauma centers do participate on their own. |
|  | **Trauma Management Information Systems**  Before site visit:   * Policies and procedures related to release of data ***(Exhibit H)***   On-site:   * Data dictionary for the trauma registry ***(Exhibit I)*** * A typical regional registry report, redacted to maintain confidentiality ***(Attachment 1)*** | [Supporting Docs to PRQ\17 - Trauma Management Information Systems](Supporting%20Docs%20to%20PRQ/17%20-%20Trauma%20Management%20Information%20Systems) |
| ***#18*** | ***Research*** |  |
| **18.A** | Describe the current procedures and processes investigators must follow to request access to the trauma system registry. | Please see the DQA Guide ***(Exhibit H)*** that includes all information and forms needed for researchers and trauma care investigators pertaining to requesting, safeguarding, using, and destroying ASTR data. |
| **18.B** | 1. What are the mechanisms used to ensure patient confidentiality when regional trauma registry data are used by investigators? | The DQA Chief ensures that all data requests and their query results comply with ARS, ACC, and HIPAA standards for data privacy and security before data requests are processed and the results released to the requesting party. All requesting parties are required to sign confidentiality and data use agreements as part of the data request process. Data emailed to requesting parties are emailed via “Secure Messenger” or on a password-protected disk. |
| **18.C** | Provide examples of where research was conducted for the purpose of providing evidence that the processes of care and outcome of injured patients in the system’s region are within acceptable standards | The DQA Section is working closely with the University of Arizona in providing trauma data related to the TBI Study being performed under the EPIC Project, which is a 5-year NIH-funded study. ***(Attachment 3)***  Z-statistics and Survival Risk Ratio Analysis are conducted periodically to compare injury outcomes. The Z-statistic, as described in the Major Trauma Outcome Study (MTOS), measures performance by comparing expected mortality to actual mortality. SRR compares total number of trauma cases to discharged (surviving) cases. |
| **18.D** | 1. How has research been used to modify policy or practice within the system? | Following an assessment of the mode of transport of trauma patients, STAB developed the policy guideline.  After assessments of the impact of level IV designations on the system were inconclusive, stakeholders ,including the University of Arizona Center for Rural Health, developed th Performance Improvement tool kit ***(Attachment 2)*** to address ED dwell time and late transfers to a level I trauma center.. |
| **18.E** | What resources (for example, personnel and fiscal) are available to the lead agency to assist in conducting system research? | The DQA collaborates with trauma center medical directors and related staff to participate in data research and publication of abstracts. The DQA staff is made available to these individuals and institutions to provide expert assistance in data extraction and analysis. |
|  | **Research**  Before site visit:   * No additional documentation required   On-site:   * Policies and procedures pertaining to data access for research purposes ***(Exhibit H)*** * A bibliography of research publications published by investigators in the system (***Attachment 1)*** * A list of data requests for the regional trauma registry for the past year | [Supporting Docs to PRQ\18 - Research](Supporting%20Docs%20to%20PRQ/18%20-%20Research) |

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| **Acronym List** | |
| AAC | Arizona Administrative Code |
| AAR/IP | After Action Report/Improvement Plan |
| ADHS | Arizona Department of Health Services |
| AEMS | Arizona Emergency Medical Systems Council |
| ARS | Arizona Revised Statutes |
| ASPR | Assistant Secretary for Preparedness & Response |
| ASTR | Arizona State Trauma Registry |
| ATLS | Advanced Trauma Life Support |
| AZ-PIERS | Arizona Prehospital Information and EMS Registry System |
| AZTrACC | Arizona Trauma & Acute Care Consortium |
| BEMSTS | Bureau of Emergency Medical Services & Trauma System |
| BIS | Benchmarks, Indicators, & Scoring |
| BPHEP | Bureau of Public Health Emergency Preparedness |
| CDC | Centers of Disease Control |
| DQA | Data and Quality Assurance Section |
| e-PCR | Electronic Patient Care Record |
| HDD | ED and Hospital Discharge Database |
| HVA | Hazard Vulnerability Assessment |
| IPAC | Injury Prevention Advisory Council |
| LLIS | Lessons Learned Information Sharing |
| MDC | Medical Direction Commission |
| MOU | Memorandum of Understanding |
| MTOS/SRR | Major Trauma Outcome Study/Survival Rick Ratio |
| MTSPE | Model Trauma System Planning & Evaluation |
| NAEMS | Northern Arizona EMS Council |
| NEMSIS | National EMS Information System |
| NHTSA | National Highway Traffic Safety Administration |
| NTDB | National Trauma Data Base |
| OIP | Office of Injury Prevention |
| PACES | Pediatric Advisory Council on Emergency Services |
| PI | Performance Improvement |
| PMD | Protocols, Medications and Devices Standing Committee |
| RTTDC | Rural Trauma Team Development Course |
| SAEMS | Southern Arizona EMS Council |
| SCI | Spinal Cord Injury |
| STAB | State Trauma Advisory Board |
| TBI | Traumatic Brain Injury |
| TEPI | Trauma and EMS Performance Improvement Standing Committee |
| USDOT | U.S. Department of Transportation |
| WACEMS | Western Arizona Council of EMS |