



NEWSLETTER

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Fast Facts:

- 26,733 Trauma ED admissions in 2009 (4% increase from 2008)
- 147 complaint investigations in 2010 (8% increase from 2009)
- 634 STEMI patients reported during first half of 2010
- 18,424 EMT certifications in 2010 (3% increase from 2009)
- 15,115 EMS transports in 2009 (68% ALS & 32% BLS level)

THE PULSE

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WELCOME FROM THE BUREAU CHIEF & MEDICAL DIRECTOR



Dear Arizona EMS and Trauma Care Providers:

On behalf of the Bureau of EMS and Trauma System we would like to extend our best wishes for a Healthy and Happy New Year to you and your families.

In most years you can count on a period of time, usually in December or January, when things slow down a little bit. This pause gives us an opportunity to reflect on what has been accomplished the previous year and allows us to prioritize activities for the coming year. It doesn't feel like that is going to happen this year – and we guess that is reflected in this edition of PULSE where we begin with a couple of articles dealing with time-sensitive issues that will require dedicated time and energy right up until the December 31, 2012 deadlines. We also report on the growing importance of clinical and operational excellence in the healthcare and public health policy world and our role in providing you with technical assistance in doing your jobs. Finally, we share important information about our Bureau and the EMS and Trauma System to assist you in your operations and plans.

We hope that you enjoy this issue of Pulse and ask you to send ideas for future issues soon so we can incorporate them in future editions of PULSE.

Sincerely,

Terry Mullins, Chief

Ben Bobrow, Medical Director

THE NEW SCOPE OF PRACTICE & EDUCATION CURRICULA



By Terry Mullins

The National Registry of EMTs has published the dates that it will use to “flip the switch” on the new tests for the Emergency Medical Responder (formally First Responder), Emergency Medical Technician (formally the EMT-B), the Advanced EMT (a new classification resembling the EMT-I 85) and Paramedic (formally the EMT-P). Now it is up to us to develop guidelines and standards so training programs can begin to educate new students using the new standards and to develop transition or bridge courses for existing providers to the new standards.

We have hired a Training Program Manager to oversee this project. Doug Crunk (douglas.crunk@azdhs.gov or (602) 364-3189) will be responsible for all things associated with training programs and for pulling together experts from the training programs to provide us the with excellent guidance. During this transition process we will look to other states so that we can identify best practices and models that may be helpful as we move forward.

We will be working with our IT department to update the training program and education website to enable us to share resources and tools and provide you with a mechanism to provide feedback. Please check our website (www.azdhs.gov/bems) for updates and do not hesitate to give Doug a call with your questions.

UPDATE ON MANDATORY NARROWBANDING



By Edward Armijo

The Federal Communications Commission (FCC) has mandated that all licensees implement equipment designed to operate on channel bandwidths of 12.5 kHz or less or equipment that meets a *special efficiency standard*. The deadline for narrowbanding is January 1, 2013, but there are critical interim deadlines to be met before then.

The efficiency standard: Voice operations satisfy the standard if equipment transmits at least one voice channel per 12.5 kHz of bandwidth (equipment with a bandwidth up to 25 kHz are okay if two or more voice channels are supported). Data operations satisfy the standard if equipment supports a minimum data rate of 4800 bits per sec. per 6.25 kHz of channel bandwidth.

The first interim deadline: January 1, 2011. The FCC will not accept applications for 1) new VHF/UHF systems operating on channels exceeding a 12.5 kHz bandwidth or 2) modifications of VHF/UHF systems that increase a station's authorized interference contour and operate on channels exceeding 12.5 kHz. The efficiency standard exception applies in both instances. Also, no VHF/UHF transmitters operating with a maximum channel bandwidth greater than 12.5 kHz cannot be manufactured or imported into the US unless they satisfy the efficiency standard.

Another interim deadline: 12-months from FCC granting an application for a licensee to complete the narrowbanding migration consistent with the modified license authority. Also, a licensee must submit a *Notification of Construction* on FCC Form 601, Schedule K within 15 days of the expiration date of the licensee's 12-month construction period, otherwise, the construction authorization automatically terminates.

Narrowbanding is a challenge with opportunities. The challenges include time, costs, maintaining interoperability, and staying on task to meet all deadlines. The opportunities include improved communications, greater spectrum availability and interference protection, and enhanced interoperability.

For more detailed information, obtain the International Association of Fire Chiefs' FCC Narrowbanding Mandate Public Safety Guide posted on the International Municipal Signal Association website (www.IMSAafety.org).

CERTIFICATE OF NECESSITY GUIDANCE DOCUMENT UPDATE

Certificate
of
Necessity

By Terry Mullins

In response to numerous queries about the Certificate of Necessity (CON) System, we have collected the pertinent statutes, rules, and policies into a single guidance document (*GD-099-PHS-EMS*) that is now available on our website (http://www.azdhs.gov/diro/admin_rules/guidance_PHS.htm#Miscellaneous). This guidance document, along with an Introduction by ADHS Director Humble, provides an overview of the CON System, defines key terms, CON application instructions, the role of public necessity and how the director evaluates a CON application. Finally, the document describes how an interested party can request technical assistance.

UPDATE ON THE ARIZONA EMS DATA REGISTRY



By Dr. David Harden, JD, NREMTB

Arizona has made substantial advances in emergent medical data collection, exemplified by the Arizona State Trauma Registry, Out-of-Hospital Cardiac Arrest and STEMI data collection, and the AED registry. In October 2010, ADHS completed a request for proposal (RFP) process and selected a vendor to develop and implement a web-based EMS data collection system. The vendor was subsequently unable to obtain final compliance. ADHS reinstated the RFP after making refinements to the specifications. Prior to the Christmas Holiday, ADHS narrowed the proposal selection decision to two well-established vendors. A decision is expected this January.

The web-based EMS data collection system will comply with the National EMS Information System (NEMSIS) version 2.2.1 data elements (NEMSIS-TAC) and complete one of the key components of the Premier EMS Agency Program quality assurance initiative (PEAP), and thus facilitate the implementation of regional and statewide performance measures, outcome measures, and regionalization of emergency care throughout the prehospital to hospital discharge continuum of care.

ARIZONA EMS & TRAUMA SYSTEM LEGISLATION: A HISTORY OF PROGRESSIVE PUBLIC HEALTH POLICY



By Dr. David Harden, JD, NREMTB

Arizona's current Emergency Medical Services (EMS) and trauma system is the product of four decades of progressive public health policies. This article discusses past and contemporary public health policies of Arizona's commitment to delivering emergent medical care. The article will begin with the 1970s, when Arizona's population was 1,775,399 and conclude with the first decade of the Twenty-First Century, with Arizona's 2009 population of 6,595,778 (73% increase from 1970).

The 1970s was a banner decade in Arizona legislation for organizing emergency medical care. Arizona passed laws establishing immunity for persons serving on health care utilization committees; creating the State Emergency Council and Office of Emergency Services in the Governor's Office; establishing the Division of EMS in the Department of Public Safety (DPS) with authority to adopt standards for ground and air ambulances and certifying ambulance attendants; establishing paramedic training programs; establishing the EMS Council and medical control responsibilities for the EMS medical director; establishing liability protection from civil damages for health care providers giving emergency instructions to EMTs; establishing local EMS coordinating systems; and defining EMT Basic, Intermediate, Paramedic, and Emergency Receiving Facility.

The 1980s continued the momentum of system development by transferring the Division of EMS from DPS to the Arizona Department of Health Services (ADHS) with authority to regulate ambulance services and establishing the Certificate of Necessity requirement for ground ambulance service licensing; establishing the EMS Operating Fund; providing liability protection for communities, their personnel, and private fire and ambulance companies against civil damages from recipients of emergency medical aid.

The 1990s ushered in the Arizona State Trauma Development Act of 1993; designating the Division of EMS as the lead agency of trauma system development; establishing confidentiality of trauma registry records; creating the 1993 State Trauma System Study Committee (STSSC) to provide the ADHS director with recommendations on trauma system development; establishing the State Trauma Advisory Board (STAB) the following year to replace STSSC; refining civil liability protection laws to EMS and health care providers issuing pre-arrival instructions; establishing protection for private and public entities participating in an emergency telephone system; reserving "911" for exclusive use to access police, fire, and EMS; requiring the ADHS to establish quality assurance (QA) standards and confidentiality during QA review; granting the ADHS director authority to promulgate rules for regulating and licensing air ambulances; appropriating \$250,000 from the EMS Operating Fund for trauma system development and STAB operating expenses; and enacting the Automatic External Defibrillator (AED) statute with requirements for training and use, and providing civil liability protection, limited immunity and a Good Samaritan provision.

The first decade of the Twenty-First Century is a contemporary history of Arizona's EMS and trauma care public health policies focusing on best practices and regionalized care - including passage of Proposition 202 establishing the Trauma and Emergency Services Fund to distribute funds to Level I trauma centers; amending various sections of the Arizona Revised Statutes (A.R.S.) to require STAB's continued involvement in developing and implementing the EMS and trauma system and adding a tribal health organization representative; establishing ADHS's authority to develop and administer the EMS and trauma system; authorizing the use a national verification organization to conduct trauma center verifications and require trauma centers to submit data to the State trauma registry; certifying training on the nature of sudden infant death syndrome for use by firefighters and certified EMTs as part of continuing education requirements; clarifying the powers and functions of the Arizona poison control system; providing civil liability protection, immunity, and a Good Samaritan provision for specified physicians, CPR trainers, acquiring and using AEDs, and trained responders; clarifying medical control of the EMS medical director and EMS Council, confidentiality of records and data, and trauma centers and trauma registry data; restricting the use of stretcher vans and wheelchair vans when transporting persons; and continue the EMS Council after its sunset date of December 31, 2010.

Arizona's EMS and Trauma System continues to evolve by promulgating evidence-based public health policies, patient care best practices from data collection and analysis, changing statewide training concomitant with national trends in EMS provider certification categories, and preparing for local- to national-scope events. The following link provides a chronological list of this article's contents: [Arizona EMS & Trauma Legislative History](#)

GUIDANCE DOCUMENT ON HELICOPTER SCENE SAFETY



By Angie McNamara

The State Trauma Advisory Board (STAB) established a workgroup to review various resource documents, utilized by the air ambulance companies to train field providers, and draft a helicopter scene safety curriculum. The workgroup consists of EMS community, air ambulance companies, and others and created *Curriculum for Helicopter Scene Safety*. EMS agencies may voluntarily use the information in the curriculum for training. It was suggested by STAB that the curriculum be shared with security personnel at the hospitals since they are also involved in scene safety. The document can be retrieved from the Bureau's website at: http://www.azdhs.gov/diro/admin_rules/guidancedocs/gd-098-phs-ems.pdf

STATEWIDE TRAUMA INTER-RATER RELIABILITY/DATA VALIDATION



By Anita Ray Ng, BA, and Anne Vossbrink, MA

Arizona's completed a statewide trauma Inter-Rater Reliability (IRR)/Data Validation project in July 2010. A redacted trauma record was sent out to the 12 ASTR Full Data Set hospitals. Trauma registrars at each hospital abstracted the same patient record and submitted it to the ASTR. Results were reviewed for consistency between registrars and agreement with state data standards. The Trauma Registry Users Group (TRUG) met to review the results and reach a consensus on the correct data entry responses. National sources were used to confirm the AIS 2005 and ICD-9-CM coding. Each registrar received a copy of their individual results compared with the consensus state standard.

The most common omission was failing to enter CT scans into the procedures section. The second highest section of variability occurred in the diagnosis section. Future TRUG meetings will include discussion and educational efforts to improve the consistency of the coded data.

Feedback from the users group was positive. The IRR process will be repeated semi-annually to track the progress made towards state trauma data reliability and validation.

TRAUMA SYSTEM PROGRESS



By Noreen Adlin

Arizona's EMS and Trauma System continues developing and becoming increasingly integrated since the American College of Surgeons – Committee on Trauma completed a trauma system consultation in 2007. The Trauma Center Road Show, started in 2008, is an initiative where the Bureau of EMS and Trauma presents the costs and benefits of formal trauma center designation to interested hospital administrators and staff. The program has been effective in expanding the trauma system into the rural areas of the state, and resulted in the designation of nine Level IV trauma centers, including most recently the Chinle Comprehensive Health Care Center. There are currently 17 trauma centers in Arizona, including 8 Level I trauma centers and 9 Level IV trauma centers. The Navajo Nation completed a trauma system consultation by the American College of Surgeons - Committee on Trauma in October to expand the delivery of comprehensive emergency trauma care capability on the Navajo Nation.

The Arizona State Trauma Registry (ASTR) received 26,733 trauma records in 2009 (a 4% increase from 2008), with 95% submitted by Level I trauma centers. The average monthly number of trauma records received from Level I trauma centers in 2009 was 2,911. The trauma records totals for 2010 were being finalized at the time of publication. The first ASTR standard public report in 2005 included 22,620 trauma records. The report in 2006 and 2007 included 23,727 and 24,022 records, respectively. These values reflect a 4.3% average annual increase in trauma record submission to the ASTR since 2005. The five-year annual average trauma records submission to the ASTR is 24,567. The 2008 and 2009 trauma record submissions have exceeded the five-year submission average by 4.8% and 8.8%, respectively.

UPDATE ON STATUTORY COMMITTEES



By Angie McNamara

The EMS Council, first established in 1978, had a sunset date of December 31, 2010. HB 2337 (passed in April 2010) reauthorized the EMS Council. The Governor's Office of Boards and Commissions continues to work on nominating members and BEMSTS will keep the EMS and trauma system community informed as this progresses.

This past year BEMSTS has worked to make some important changes in our statutory committees with the goals of reducing the travel requirements of participants, improving attendance, reducing or consolidating the standing committees and reducing the workload on staff.

To that end we have changed the schedule so that the statutory committees meet on the same day so participants can attend all the meetings if they wish, switched to a more advanced telephone and web-based meeting system so members can participate from their desks, reduced the number of standing committees from five to four. We have also begun to update the bylaws (long overdue) and will be making audio-recordings of the meetings available electronically. Additionally, we will now ensure that each of the standing committees has a representative from the EMS Council, Medical Direction Commission and State Trauma Advisory Board to ensure that important information is shared across the spectrum of the EMS and Trauma community.

These meetings are all open to the public and we encourage you to attend and take part in the discussion. The 2011 committee meeting schedules and location can be obtained at : [2011 Meeting Schedule](#).

NEW AMERICAN HEART ASSOCIATION GUIDELINES



By Dr. Ben Bobrow, MD

Arizona EMS can be proud of the role it has played in helping shape the 2010 AHA Guidelines for CPR and Emergency Cardiovascular Care. Released in October, the new guidelines emphasize the importance of minimizing interruptions to high-quality chest compressions, increasing bystander CPR, and continuously measuring outcomes - reinforcing what Arizona has been doing for the past 6 years.

The 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science can be downloaded at http://circ.ahajournals.org/content/vol122/18_suppl_3/

S.H.A.R.E. UPDATE



By Dr. Ben Bobrow, MD

Our state's efforts to teach its citizens Hands-Only CPR was highlighted in the JAMA article "Chest Compression-Only CPR by Lay Rescuers and Survival from Out-of-Hospital Cardiac Arrest" published in October 2010. Thanks to all the fire departments, ambulance companies, and hospitals throughout the state providing chest-compressions-only CPR training. It's making a huge difference in survival! As reported in JAMA, patients who received compression-only CPR were significantly more likely to survive to hospital discharge than patients who received conventional CPR or no CPR. (JAMA. 2010;304[13]:1447-1454.) For a hard copy of the article and further information on SHARE and Hands-Only CPR, contact Paula Brazil on at brazilp@azdhs.gov or (602) 364-0580. See also an article from Time.com "[Taking the Resuscitation Out of CPR.](#)"

PREMIER EMS AGENCY PROGRAM (PEAP) UPDATE



By Dr. David Harden, JD, NREMTB

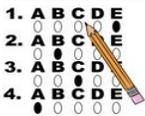
The Premier EMS Agency Program (PEAP) is a quality assurance (QA) initiative focusing on trauma, ST-segment Elevation Myocardial Infarction (STEMI), acute stroke, and cardiac arrest - four public health emergencies impacted by an integrated EMS and trauma system with regionalized medical services. PEAP's structure enables EMS agencies to collect data to establish new or enhance existing QA program, and submit data to ADHS once the statewide EMS Data Collection System is online (targeted for summer 2011).

The PEAP is a systematic and standardized approach to integrate emergency medical services and trauma care delivery, protocols, and treatment guidelines through formal commitments by EMS agencies and health care institutions to establish 1) a standardized data collection and submission process, 2) a QA process, and 3) on-going training to improve patient care and outcome. The integrated QA process with agency- and statewide-level benchmarks and performance measures will benefit Arizona residents and visitors, EMS agencies, hospitals, and other public safety agencies.

The objectives are to 1) facilitate ongoing statewide measurable improvements in emergent patient outcomes using evidence-based, standardized patient care; and 2) ensure patients throughout the state receive state-of-the-art prehospital care and transport to a facility especially equipped and staffed to render definitive intervention for their specific emergency.

Achieving the objectives depends upon individual and collective participation by EMS agencies and health facilities. Several EMS agencies have committed to participate by submitting a PEAP Application. For further information on PEAP or to obtain an application visit: [PEAP Summary](#); [PEAP Handbook & Application](#)

NREMT TESTING UPDATE

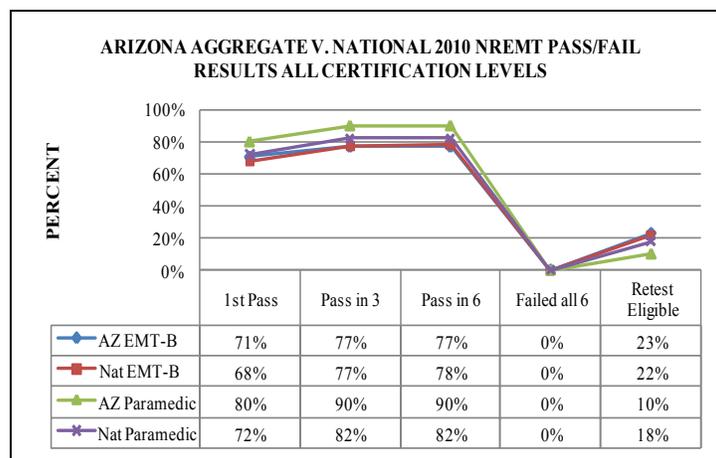


By Edward Armijo

The 2010 NREMT test results for Arizona EMT-Basics and Paramedics demonstrate first time pass rates above the national aggregate. Arizona EMT-Basic and Paramedic respective pass on first attempt was 3% points and 8% points above the national aggregate. Comparing Arizona's aggregate EMT-Basic with Paramedic pass on first attempt results, Paramedic pass on first attempt was 9% points higher.

Arizona EMT-Basic pass on first attempt results by EMS Regions are: Central 67% (4% points below AZ aggregate), Northern 77% (6% points above AZ aggregate), Southeastern 77% (6% points above AZ aggregate), and Western 64% (7% points below AZ aggregate). Arizona Paramedic pass on first attempt results by EMS Regions are: Central 81% (1% point above AZ aggregate), Northern 70% (10% points below AZ aggregate), Southeastern and Western were both 81% (1% point above AZ aggregate).

Graph 1 shows the Arizona aggregate v. national NREMT pass/fail results. A complete set of graphs of pass/fail results by different variables can be obtained from: [2010 Arizona NREMT Pass/Fail Results](#).



Graph 1

BEST PRACTICES IN EMS AND TRAUMA CARE QUALITY ASSURANCE



Dr. David Harden, JD, NREMTB

Best Practices, Outcome Measures, Evidence-Based Care, and Performance Indicators are inter-dependent in an integrated EMS and trauma system, and share a common denominator – Data. This article discusses these concepts as they apply to Out-of-Hospital Cardiac Arrest (OHCA), ST-segment Myocardial Infarction (STEMI), Stroke, and Trauma. For purposes of this article, the following definitions apply:

Best Practices: “A set of proven and repeatable methods used to achieve desired outcomes.”

Outcome Measure: “A measure of the quality of medical intervention that are assessed against intended outcomes.”

Evidence-Based Care: “The process of using data and the scientific method to confirm that medical interventions have a high probability of producing desirable therapeutic outcomes.”

Quality Assurance: “A process for systematically monitoring and evaluating various aspects of a program or system to ensure established quality standards are met.”

Performance Indicator: “A quantitative measure of the degree of conformance to a predefined expectation, with three classifications: Structure (people, places, items), Process (actions in a system), and Outcome (end results of structure and process activities).

The three types of performance indicators are inter-dependent – changing one impacts the others. Changes in structure (placing interventional cardiac cath labs closer together) results in process changes (sending prehospital STEMI alerts to participating hospitals), which results in outcome changes (less myocardial damage due to reduced ischemia time).

Arizona has several initiatives to improve EMS and trauma patient care through collecting treatment and outcome data and analyzing data to introduce evidence-based best practices. “We need to continuously collect process and patient data in a manner that allows analysis of the effects of treatments on patient outcomes.”(Ben Bobrow, BEMSTS Medical Director)

EXAMPLES OF PERFORMANCE INDICATORS BY DOMAIN AND DISEASE EVENT			
EVENT	STRUCTURE	PROCESS	OUTCOME
OHCA	% of EMT units with AED capability	% of EMT units with standing orders for defibrillation of pulseless VF/FT patients	% of witnessed pulseless VF/FT patients ROSC treated by EMS personnel
STEMI	% of paramedic units with 12-lead ECG capabilities	% of patients with 12-lead ECG cardiac ischemia transported to hospital with interventional cardiac cath lab	% of patients with 12-lead ECG STEMI with a D2B time ≤ 90 minutes
STROKE	% of communities with a regionalized primary stroke center (PSC) system	% of local EMS systems with a PSC transport protocol	% of patients with a positive prehospital stroke assessment transported to a PSC for thrombolysis ≤ 3 hours of Sx onset.
TRAUMA	% of patients with an ISS >15 injured in rural area without a trauma care facility	% of rural patients with an ISS >15 not transported to a Level I trauma center	% of patients with an ISS >15 transferred from an urgent care facility to a Level I trauma center

A quality assurance process should include activities that address clinical and system issues from three perspectives: Prospective (mitigation before issues occur), Concurrent (evaluating issues as they occur), and Retrospective (data review to identify areas of improvement). Collecting reliable, standardized and timely data is integral to all three perspectives and enables development of objective, attainable, and measurable performance indicators. Continuous clinical and system review enables development of evidence-based best practices and improved patient outcomes.

RESOURCES FOR QA AND BEST PRACTICES

[American College of Surgeon \(ACS\)](#)

[Arizona Mission Lifeline](#)

[ASPIRE Program](#)

[AZSHARE for EMS Providers](#)

[EMS Performance Improvement Center \(EMSPIC\)](#)

[National Association of State EMS Officials \(NASEMSO\)](#)

THE BUREAU OF EMS AND TRAUMA SYSTEM OFFICES

BEMSTS WEBSITE: <http://www.azdhs.gov/bems/index.htm>



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FOUR YOUR INFORMATION

SEASONAL DATA FACTSHEETS:

- [Christmas-New Years](#)
- [Thanksgiving Week](#)

THE PULSE NEWSLETTER:

The PULSE Newsletter is published by the Data and Quality Assurance (DQA) Section of the Bureau of EMS and Trauma System. To be added to or stay on the PULSE Newsletter mailing list send your email address to David Harden hardend@azdhs.gov.

Suggestions on article topics are welcome and can be submitted to David Harden at: hardend@azdhs.gov.

RESOURCES

RELATED WEBSITES:

[Arizona Ambulance Association \(AzAA\)](#)
[American Ambulance Association \(AAA\)](#)
[American College of Surgeon \(ACS\)](#)
[Arizona Department of Health Services](#)
[Arizona Public Health Association \(AZPHA\)](#)
[Emergency Medical Services for Children \(EMS-C\)](#)
[Federal Emergency Management Agency \(FEMA\)](#)
[National Association of State EMS Officials \(NASEMSO\)](#)
[National Highway Traffic Safety Administration \(NHTSA\)](#)
[National Registry of Emergency Medical Technicians \(NREMT\)](#)
[National SAFE KIDS Campaign](#)
[Save Hearts in Arizona Registry and Education \(SHARE\)](#)

EMS REGIONAL COUNCILS:

[Arizona Emergency Medical Systems \(AEMS\)](#)
[Northern Arizona Emergency Medical \(Systems NAEMS\)](#)
[Southeastern Arizona EMS Council \(SAEMS\)](#)
[Western Arizona Council of EMS \(WACEMS\)](#)

USEFUL TOOLS:

[AZ Guidelines for Field Triage Pocket-Card](#)