Dear Provider:

The staff of the Bureau of EMS & Trauma System would like to wish you a happy EMS Week and extend our thanks and appreciation for the work you do every day to make sure that all people in Arizona, citizens and visitors alike, receive the best emergency care possible.

When EMS and trauma systems were first established in the 1970’s they were based upon a model which was supported with significant Federal funds. At the time, this was a great improvement as few localities had a structured method for assisting citizens suffering from acute injury or illness. While these systems were an improvement, they emphasized an event-based approach to patient care, not a disease-based approach. Nor did the model envision a need for analysis of the clinical outcomes for the care provided. This legacy of event-centric and anecdotal treatment regimes has been difficult to overcome. When we read about individuals or agencies that are recognized leaders in the field of emergency care, or in any industry for that matter, we see a commitment to hard work, frequent, in-depth analysis of performance and use of the information gleaned from the analysis to implement improvements in performance. Here in Arizona we have made some significant steps to implement these characteristics that are associated with success. This edition of Pulse provides you with some information about our activities at the Bureau and our efforts to support you as you strive to become the best. We are committed to working with each of you to make our system of care for the ill or injured the best in the country.

EMS Week provides us with an opportunity to acknowledge the work we do; it is also a time to remember those who are no longer with us. We lost some important friends this past year, folks that were professional and passionate about their work. They left behind friends and family that struggle with their loss and our thoughts are with them.

In closing, thank you for all of your hard work, compassion and commitment to Arizona,

Terry Mullins, Chief
Ben Bobrow, Medical Director

Your Expertise/Knowledge Is Needed
ADHS is seeking health care professionals who are willing to volunteer in the event of a large-scale public health or medical emergency. To have an effective emergency response plan and system in Arizona, the region and nation must be able to quickly identify and contact volunteer health professionals who have specific skills and competencies that are needed to care for people who are injured or ill.

The Arizona Emergency System for the Advanced Registration of Volunteer Health Professionals (AZ-ESAR-VHP) is a secure, Web-based system used to register, qualify and credential Arizona health care professionals before a major public health or medical emergency. AZ-ESAR-VHP is administered by ADHS/Bureau of Public Health Emergency Preparedness (BPHEP) and provided through EMCredential.

Registration with AZ-ESAR-VHP is done online and takes less than 30 minutes. Step-by-step registration instructions are available. Registrants should have vaccination reports, contact and personal information, and records on licenses, certifications and competencies readily available. Information about liability protection is available on the Website.
Prehospital Data Collection, Analysis and Reporting: Three databases will enable the Arizona Department of Health Services to collect, analyze and report important emergency medical system information. This in turn, will provide Arizona’s emergency medical healthcare providers with critical data for system benchmarking and quality improvement...

- The Arizona State Trauma Registry (ASTR) collects data from all participating trauma centers.
- The Save Hearts in Arizona and Registry (SHARE) collects cardiac arrest data from EMS providers across the state.
- The Arizona EMS Information System (AEMSI S), which is currently in development, will collect electronic reports for acute stroke, trauma, cardiac arrest and acute ST-elevation myocardial infarction patients from participating EMS agencies.

Each of these databases is designed with the primary function of reporting blinded, aggregate system and treatment benchmark data back to the contributing providers. This will provide the impetus and goals for each participant to improve patient outcomes in their system.

Evidence-Based Changes in Treatment: Recent clinical studies have identified changes to historic treatment protocols that are more effective than traditional methods. These revised protocols have been, or will soon be introduced to emergency care providers across the state, and importantly, can be collected, analyzed and reported on from the databases described above. Some examples of this are:

- **Bystander CPR**: Patients suffering out-of-hospital cardiac arrest and receive bystander CPR have a three to four-fold increase in survival to hospital discharge. Arizona currently has the only statewide bystander CPR registry. Thousands of students and adults across the State of Arizona have been trained in Continuous Chest Compression-CPR as part of this bold public health initiative.

- **Hypothermia Post Cardiac Resuscitation**: Therapeutic Hypothermia (TH) is currently guideline therapy for post-arrest care after Out of Hospital Cardiac Arrest (OHCA). Arizona has begun regionalizing post-arrest care in an attempt to assure that the maximum number of OHCA victims receive standardized care in medical centers equipped to provide it. Since 2007, twenty-two hospitals have agreed to implement a hypothermia protocol for patients that are comatose following cardiac resuscitation and participate in a quality improvement program. In 2005, only 2% of OHCA victims in Arizona received TH, while in 2008, 33% of patients in the matrix of Cardiac Arrest Centers received this treatment.

- **Traumatic Brain Injury (TBI)**: By implementing changes in the way prehospital providers treat patients with severe traumatic head injury we can significantly reduce the impacts of the approximately 25,000 TBIs suffered annually by Arizonans.

- **Myocardial Infarction with ST-Segment Elevation**: Working with EMS providers to acquire and interpret 12-lead ECGs and provide prehospital notification to hospitals which have 24/7 cardiac catheterization capability with the goal of reducing time to reperfusion will significantly improve the outcomes for Arizonan’s suffering acute myocardial infarction.

The Save Hearts in Arizona Registry and Education (SHARE) Program—Maximizing Cardiac Arrest Survival in Arizona
On April 29, 2009, the SHARE Program co-sponsored a symposium addressing the spectrum of cardiac care in Arizona—including bystander CPR, 9-1-1 dispatchers’ pre-arrival instructions, EMS service implementation of Cardiocerebral Resuscitation and continued resuscitation efforts in Cardiac Arrest Centers. The event, co-sponsored by the University of Arizona College of Medicine Phoenix campus, featured nearly 20 presentations by many of the state’s EMS and hospital leaders. The symposium was attended by over 180 participants from various fields of medicine and regions of the state. Presenters described best practices dealing with: schools and fire department training of thousands of potential bystanders in continuous chest compression CPR (CCC-CPR); the Phoenix emergency dispatch center efforts to coach callers in CCC-CPR; the 20 hospitals of the Arizona Cardiac Arrest Center consortium that are using therapeutic hypothermia post cardiac arrest to increase the likelihood that the patient will survive the event neurologically sound. In addition, two cardiac arrest survivors spoke of their experiences and shared their gratitude for the help they received and for the ultimate outcome of their ordeal—being alive. There was not a dry eye in the house. A broadcast of the event will be available on the SHARE website. www.azshare.gov.
Increasing Access for Rural Arizonan’s to Trauma Care: The Trauma Section continues to focus its attention on increasing access to structured trauma care for citizens in rural and frontier Arizona and in improving the operation of the trauma system in Arizona.

Specifically, we have visited numerous rural hospitals to discuss their participation in the trauma system as a level III or IV trauma center – and our visits have paid off. This past year five additional hospitals have joined the systems as level IV trauma centers and we believe two more will join in the next couple of months.

Using Data to Inform and Improve the Arizona Trauma System: In combination with our co-workers in the Data and Quality Assurance Section, we have been working hard to utilize the wealth of data available through the Arizona State Trauma Registry, the Emergency Department and hospital discharge databases to analyze our systems performance and develop policies that enhance the care provided to injured Arizonans. Currently we have work groups established and working on:

- Trauma triage and transportation guidelines for the Regional EMS Councils which accommodate our new level IV and potential level III and II trauma centers.
- Ground/Air transport schema to assist the regional councils in developing protocols that take into account the geography and service capabilities of providers within their regions.
- Training and quality improvement tools for hospital and pre-hospital providers on the triage and transport guidelines.

Data & Quality Assurance Section

The Data & Quality Assurance (DQA) section is responsible for collecting, analyzing and reporting on data obtained from designated trauma centers and those EMS agencies participating in the Premier EMS Agency Program. The DQA section reports on data in order to enhance the EMS & trauma system in Arizona. Trauma data is collected from all hospitals designated as level I, II, III or IV trauma centers and is stored in the Arizona State Trauma Registry from which reports are generated for the State Trauma Advisory Board as well as the public. The DQA section also provides quarterly reports to the designated trauma centers in an effort to benchmark performance in certain aspects of care such as length of stay and injury severity. The DQA section also contributes to the Trauma Annual Report in terms of data analysis done by the Arizona State Trauma Registry Manager, Anita Ray-Ng and our Biostatistician, Vatsal Chikani.

The EMS Database, managed by David Harden, collects electronic patient care reports as part of the voluntary Premier EMS Agency Program. This effort is being accomplished with support from the four regional councils as well as many first responder agencies and CON holders. The data will be used to benchmark care given in the pre-hospital environment for those patients suffering from acute stroke, major trauma, ST-elevation myocardial infarction and Out of Hospital Cardiac Arrest.
**Ambulance Services**
The Ambulance Services section carried forward 41 applications from 2008, and has opened an additional 21 applications in 2009. All applications were completed within the timeframes required by A.A.C. R9-25-1201.

**Certification**
As of May 1, 2009, the Certification Section of the Bureau reports the following number of Arizona certified emergency medical technicians:
- EMT-Basic - 10,845
- EMT-Intermediate - 56
- EMT-Paramedic - 4,983
- Total - 15,884

**Investigations**
The Bureau attempts to resolve all investigations as quickly as possible. Some investigations require additional time depending upon the complexity and administrative processes requirements of the case. Currently there are 43 open investigations, 19 are carried forward from 2008.

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**CBS 5 Red Badge Emergency Program**

A new product is available to make patient medical history and health decision information more readily available to first responders. Agencies wishing to learn more about the “CBS 5 Red Badge Emergency Program” are encouraged to contact James Silha by calling (602) 650-5431 or E-mailing james.silha@kpho.com.

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**For information about important meetings held at the Arizona Department of Health Services visit our Website at:**
www.azdhs.gov/bems/schedule.htm