On The Scene

Covering EMS and Trauma in Colorado

A Publication of the Colorado Emergency Medical and Trauma Services Section

Winter 2011

AIRLIFE Denver

Air Ambulance Program of the Year

Each year the Association of Air Medical Services recognizes an emergency medical program, nationally or internationally, that has demonstrated a superior level of patient care, management prowess, quality leadership through visionary and innovative approaches, customer service, safety consciousness, marketing ingenuity, community service and/or commitment of the medical transport community as a whole.

AIRLIFE Denver received this prestigious Program of the Year award from the Association of Air Medical Services in 2010. AIRLIFE Denver is one of 19 air ambulance services licensed in Colorado.

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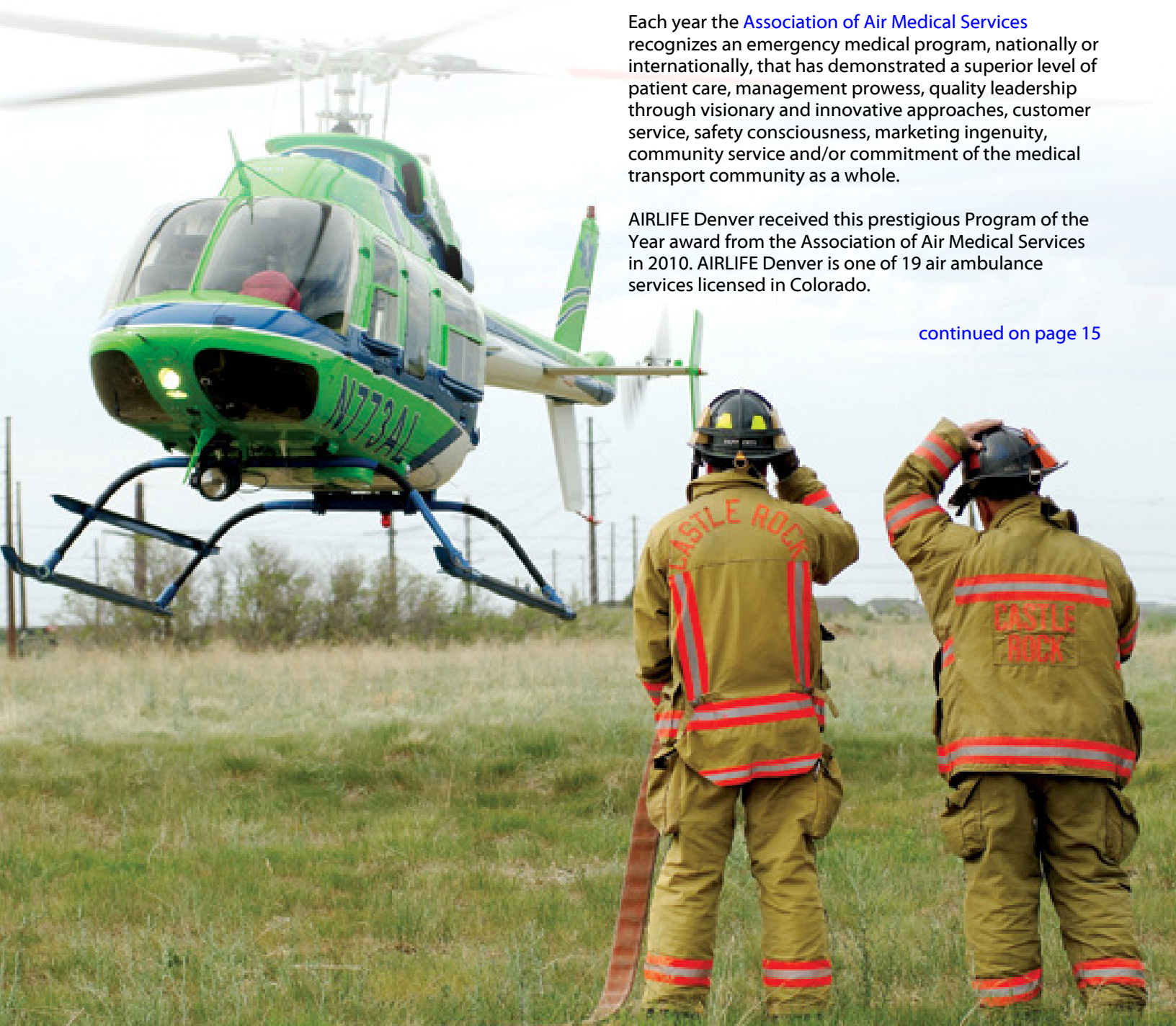

ON THE SCENE
AT A GLANCE

Winter 2011

Colorado Department of Public Health and Environment

ON THE SCENE is a quarterly publication of the Emergency Medical and Trauma Services Section of the Health Facilities and Emergency Medical Services Division at the Colorado Department of Public Health and Environment and serves the emergency medical services and trauma communities of Colorado.

4300 Cherry Creek Dr. S.
Denver, Colo. 80246
Main (303) 692-2980
(800) 866-7389 x2980
Fax (303) 691-7720
www.coems.info

Howard Roitman, Division Director
D. Randy Kuykendall, Section Chief
Jeanne-Marie Bakehouse, Editor
Rio Chowdhury, Layout Designer

The Chief's Corner
Rules and Changes

D. Randy Kuykendall

Although it's a bit unbelievable, 2011 is here. We are approaching two years since the passage and implementation of Senate Bill 09-002 and House Bill 09-1275. House Bill 1275 moved the regulatory authority over EMS scope of practice and medical directors from the Colorado Medical Board to the Department of Public Health and Environment, and the work of maintaining a contemporary EMS and trauma system continues. To date, the Colorado EMTS community has successfully implemented a number of changes from fund distribution and grants program improvements to new approaches to trauma center designation. As we look forward to the new year, a number of significant efforts are underway to keep our EMTS system functioning in a way that ensures high quality patient care.

For more than six years, the national EMS community has been working to implement the EMS Agenda for the Future, a Systems Approach. Most significantly, the implementation of the Advanced Emergency Medical Technician (AEMT) scope of practice and the impact on Colorado's EMT-Intermediate level of practice has been of concern to many. Over the past two years, the State Emergency Medical and Trauma Services Advisory Council (SEMTAC) and the EMS Practice Task Force have been working with the department to draft a set of certification rules that will incorporate both the new AEMT level of practice as well as maintain appropriate pathways for providers to become EMT-Intermediates. These draft rules now are undergoing the formal promulgation process. In addition, because the EMS scope of practice authority has become part of the department's responsibilities, the Emergency Medical Practice Advisory Council (EMPAC) is in the process of developing the necessary scope of practice rules to compliment the new EMS personnel rules.

One of the most vexing questions with regard to Colorado's decision to maintain the EMT-Intermediate level of practice has been how we will eventually provide certification examinations for new personnel at this level once the National Registry of EMTs eliminates this process at the national certification level. In October 2010, the National Registry's executive director made a commitment to continue the provision of the initial examination to states that have chosen to maintain this level of practice so that the states can utilize this test for their state certification purposes. Understanding the National Registry will eliminate the national certification level of EMT-Intermediate sometime after 2013, their commitment to maintain the written examination tool after that is a significant relief for our state. Although there are details to be worked out over time, we hope to put everyone's mind to rest in terms of our commitment to maintain the EMT-Intermediate level of practice that supports so many of our rural and frontier services.

The implementation of the national scope of practice is well underway in our state. The rules to support both the certification and scope of practice for the four levels (EMT, AEMT, EMTI and Paramedic) in Colorado should be effective by July 2011. Colorado's EMS education centers are working to ensure that curricula requirements are consistent with the new standards and our education groups will continue to support field personnel in terms of assuring contemporary practice information is disseminated. Thanks to the forethought and planning of our agencies, medical directors and policy makers, the implementation of these standards is on schedule and will support our EMS and trauma system for many years to come.

In addition to the rule updates described above, rules regarding the prehospital trauma triage algorithm and trauma center fee adjustments will be revised during the coming year. The proposed changes to the prehospital trauma triage algorithm are being heard by the Colorado Board of Health in January, and we expect the rules governing trauma center designation fees to be brought before the Board of Health in May. Drafts of these proposed rule changes are available at www.coems.info. Questions regarding these efforts should be directed to the Emergency Medical and Trauma Services Section and we will gladly discuss these updates with all interested stakeholders.

It will be a busy year, and we look forward to continuing to support the many professionals that serve Colorado's health care community every day. ■

D. Randy Kuykendall, MLS, NREMT-P, is the chief of the Emergency Medical and Trauma Services Section and can be reached at randy.kuykendall@state.co.us.

A Team in Touch

Regional Medical Direction: What it is and what it can do

Art Kanowitz

Over the past year, there has been quite a bit of activity establishing the concept of regional medical direction. The concept has been vetted by Colorado's 11 Regional Emergency Medical and Trauma Advisory Councils (RETACs) in an effort to establish improved methods of supporting EMS medical directors at the local level through increased communication and coordination at the regional level. Initial funding to support the formalization of regional medical direction programs has been authorized by the department per the recommendation of the Statewide Emergency Medical and Trauma Services Advisory Council (SEMTAC), and I am pleased to report that significant progress is underway. The concept is a relatively new effort for Colorado, and regional medical direction consists of programs designed and implemented at the RETAC level to:

1. Facilitate communication and cooperation among EMS agency medical directors, allowing them to share ideas, discuss problems and communicate with their peer group. This will be encouraged for medical directors within a region, but also for all medical directors throughout Colorado.
2. Provide resources for EMS agency medical directors to enhance their ability to perform their job function as a medical director.
3. Facilitate improved efficiency in protocol development and delivery of education, so that each EMS medical director does not have to recreate the "protocol" wheel every time. For instance, protocols can be shared among agencies within a region to provide the basis for more standardized patient care across Colorado.
4. Provide a forum for the resolution of systems issues at local and regional levels. When a systems issue arises that involves multiple agencies, a conversation between medical directors and agency directors will more likely lead to appropriate resolution that best serves patient care.
5. Facilitate opportunities for continuous quality improvement (CQI) at agency and regional levels. Physicians who serve as EMS medical directors are required to ensure continuous quality improvement programs exist within the agencies they oversee. The region's medical direction program will increase each medical director's ability to perform his or her own agency CQI by providing benchmarks and best practices, and monitoring outcomes to guide the continued provision of quality care.

The operative word for these potential functions is "can." None of these possibilities are mandatory. Agency medical directors and service directors will determine their own level of involvement based on their needs and interests. However, those EMS medical directors who want to participate to a broader extent will be provided the necessary resources and, with the guidance and support of the RETAC boards and coordinators, will likely bring a new level of communication and coordination to the medical care aspect of local EMS systems.

The development of this concept is not intended to overshadow the authority and responsibility of individual EMS service medical directors or service directors, but to augment and support the provision of contemporary medical oversight across Colorado. Local agencies will continue to determine their level of participation to ensure quality patient care at the local level. The regional programs will simply provide additional resources and opportunities for further development. Issus such as protocol implementation, operational oversight of field personnel and outcome measurements will continue to be the province of local EMS medical directors and their agencies.

How a regional medical director program is implemented in each RETAC will be different, and it is the prerogative of the RETAC to determine how best to provide support to each local agency. The San Luis Valley and Northwest RETACs have proposed single medical directors for their regions. The Southern and Southeastern Colorado RETACs have a single medical director to cover both regions. The Mile-High and Foothills RETACs are having the Denver Metro EMS Medical Directors group provide their medical direction. The Northeast Colorado RETAC has named the Northeast Physician Advisor Board, a group made up of both EMS agency medical directors and trauma facility medical directors, as its regional medical direction group. The Plains to Peaks RETAC will likely name two EMS medical directors to lead its regional medical direction program. The remainder of the RETACs are exploring if and how they will develop their regional medical direction initiatives. The RETACs will decide how involved they want their medical direction programs to be in terms of protocol development, CQI, regional education and other areas of significance. Looking to the future, the individual regional medical direction efforts will become a statewide coordinated resource that supports communication throughout the state and promotes positive practices to enhance and improve the quality of care provided by EMS throughout Colorado. ■

Dr. Arthur Kanowitz is the state EMTS medical director and can be reached at arthur.kanowitz@state.co.us.

Podcasting
Aims Community College

Patricia Rand

Podcasting at Aims Community College

Aims Community College, located in Greeley, has begun to incorporate podcasts into our paramedic curriculum. A podcast is an audio file that can be listened to from a standard computer or downloaded to a portable MP3 player. When used as educational material, podcasts exist in varied forms. Podcasts can be used to simply record and replay a lecture, to substitute a face-to-face lecture, or to provide supplemental material not otherwise covered in lecture or textbooks. (McGarr, 2009).

The podcasts used in the paramedic program at Aims College are primarily supplementary lecture material created by the program director. Recently, we have begun to create case studies of actual 911 calls with our physician advisor, Benji Kitagawa, DO. The podcasts have been received so enthusiastically by the students that we have decided to make them available (at no cost) to all EMS providers in Colorado for continuing medical education credit.

An Argument for Podcasting in EMS

So, why do we think podcasts are so great? First, we realize that many EMS providers live in rural areas and have limited access to continuing medical education. Podcasts are a simple and effective way of distributing education to the masses. The only requirement to listen to the podcast is a computer and a high-speed internet connection. Listeners do not need an MP3 device to access the material, although they certainly can download the material if that suits them.

Second, students really enjoy the ability to receive information in an audio format. The preponderance of literature seems to show that students' attitudes towards the use of podcasts in education are mostly favorable. In a pilot study of the use of podcasts in a Bachelor's level paramedic program, researchers created recordings of lectures and made them available in podcast format. While only one third of the students chose to listen to the optional recordings, 25 percent of those who did reported that the podcasted material helped them to understand material they did not previously understand. It is noteworthy that provision of the lectures in podcast format showed no negative impact on attendance in the program (Williams, 2008). Similar results were found in a study at the University of Michigan in which dental students were supplied with supplementary lecture material via podcast (Brittain, 2006). Another interesting outcome in this study was the participants' choice of supplementary material format. The students were presented with supplementary lecture material in video, audio and audio synced with PowerPoint slides. A survey revealed students overwhelmingly preferred the material in audio (podcast) format to the other choices. In a study of just under 200 college students taking an Information and Communication Technology course in the United Kingdom, Evans (2008) found that students believed podcasts to be a more effective revision tool than their textbooks. Additionally, the study found that students valued the flexibility provided by podcasts and reported listening to them while traveling to and from school.

Finally, we believe that providing material in an audio format enhances learning. McKinney, Dyck and Luber (2009) conducted a study at a college in which a cohort of psychology students was divided into two groups. One group (n=32) listened to a traditional lecture and was provided with copies of PowerPoint slides. The second group (n=34) did not attend the lecture but instead listened to a recording of the lecture via podcast. One week later, both groups were given a test over the material revealing that the podcast group scored significantly higher than the lecture only group. Further analysis showed that within the podcast group, students who took notes while listening to the podcast scored higher than students who did not take notes. McKinney (2009) studied the use of a podcast as supplementary lecture material for a cohort of nursing students taking a pathophysiology course. A survey of the participants showed that the students felt the availability of the material via podcast led to enhanced understanding of the material and attributed it to the ability to listen to the material multiple times.

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Podcasting
Aims Community College

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Perhaps the most intriguing case study involving learning outcomes was one in which podcasts were not originally utilized. In 2004, Dr. Michael Barrett created an audio CD of cardiac heart tones. He supplied the audio recordings, as a supplementary aid, to medical students who were learning to diagnose cardiac murmurs. Previous cohorts of students were used as a control group. The control group received a traditional lecture accompanied by a brief opportunity to listen to heart sounds on a volunteer patient but did not receive the audio CD. Dr. Barrett found that students who listened to the audio CD repetitively scored nearly three times better on post-tests than the control group. As iPods® and MP3 players became more popular, later classes of students began to copy the audio heart sound files onto their mobile players. Dr. Barrett has subsequently run the study using a podcast format and has found similar results. This study illustrates the value of choosing the correct technology (in this case an audio file) to suit the specific educational objective. While the results of this study may suggest that delivery of supplemental lecture material via podcast results in greater learning outcomes, one must keep in mind that simply providing the content in an audio format produced the same results.

Conclusion

The use of podcasting in EMS education is an emerging trend and a promising technology. The paramedic curriculum is a rigorous course of study and mastery of the material is imperative for safe and effective paramedic practice. Podcasting not only provides an enhanced learning opportunity but a convenient method of obtaining information for the rural provider. As a training center, we are excited to offer this learning format to our students as well as to the EMS providers throughout Colorado. We intend to have podcasts available on our CME website in January 2011. The CME website can be found at www.aims.edu/academics/ems/continuingEd.php. ■

For further dialogue about podcasting in education please contact

Patricia Rand, MA, NREMT-P
Director, Paramedic Program
Aims Community College
(970) 339-6687 phone

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Upgrade of Colorado's EMS Data Collection System

Holly Hedegaard

In 2005, the Emergency Medical and Trauma Services Section, with input from Colorado's EMS and trauma community, embarked on the design, development and implementation of a cost-effective web-based statewide patient care reporting system for ambulance services. The result of this effort was the creation of the "EMS Ambulance Trip Reporting Information Exchange," otherwise known as the MATRIX. Because only minimal funding was available at the time of initial development, a decision was made to use internal department software programming expertise rather than purchase a commercial vendor software product. The MATRIX was designed to collect the minimum national elements subset of the National EMS Information System (NEMSIS) version 2.2.1.

Under current rules, both ground and air ambulance agencies are required to download the 67 variables in the national elements subset to the state data base, however, additional variables may be downloaded if the agency chooses to do so. Agencies can submit patient care data either directly through the web-based program or by downloading data collected using other commercial software applications.

Currently, about 75 percent of Colorado's licensed ambulance services regularly submit data to the state database. The MATRIX contains 1.3 million records (from 2007 forward) and is the single largest patient care database maintained by the department.

During the past five years, the needs of Colorado's EMTS community have outgrown the MATRIX's capabilities. Consequently, a need exists to update and expand the data collection system to increase the number of variables collected, provide more reporting at the local level, allow for integration with other data systems including the state trauma registry, and position the state for upgrade to NEMSIS version 3 in the near future.

In July 2010, a proposal was submitted to the Public Policy and Finance Committee of the State Emergency Medical and Trauma Services Advisory Council (SEMTAC) for funding to purchase a commercial off-the-shelf, web-based, hosted statewide pre-hospital data collection system that will serve as the repository for the state's EMS data. The council approved the proposal.

From August through October, staff in the EMS and Trauma Data Program gathered information for Colorado's Request for Proposals (RFP) by interviewing other state data managers, reviewing RFPs used by other states and conferring with the NEMSIS Technical Assistance Center. The Colorado RFP to solicit bids from software vendors interested in supporting Colorado's EMS data collection efforts was posted to the state BIDS system on Nov. 30, 2010. Interested vendors needed to submit their proposals by Jan. 4, 2011.

The MATRIX contains 1.3 million records (from 2007 forward) and is the single largest patient care database maintained by the department.

Proposals will be reviewed by a five-member panel with representation from both the department and the EMTS community. It is anticipated that the successful vendor will be chosen and a contract will be in place by mid-March 2011.

Implementation of the new system will include customization of the vendor's system, migration of the current data base to the vendor product, training of users who choose to utilize the on-line system, and interface validation to ensure that the system can both import NEMSIS-compliant data from other third-party systems and export NEMSIS data to external data warehouses or in different file formats.

The upgrade of Colorado's EMS data collection system provides a unique opportunity to increase our capacity for using patient care data for clinical decision-making. ■

Holly Hedegaard, MD, is the EMS and Trauma Data Program manager and can be reached at (303) 692-3005 or holly.hedegaard@state.co.us.

$6.7 Million Available
For EMS and Trauma Service Provider Organizations

Jeanne-Marie Bakehouse

Funds are available to organizations that have the provision of EMS and trauma services as their primary purpose. This includes EMS agencies, facilities, clinics, fire agencies, training centers, community colleges and other public and private providers of emergency medical and trauma services in Colorado. There are four types of funding, and an organization can apply for as many as needed.

1. Education grants are open year-round and provide funds for tuition, books, fees and travel. Apply through the Colorado Rural Health Center at www.coruralhealth.org/programs/create/index.htm. Please allow 45 days for review and approval, prior to the class start date. A 50 percent match is required, and there is a financial waiver process for organizations that cannot meet the match. Reviews occur every two weeks, and awards are issued within 45days.

2. Provider grant applications opened on Dec. 15, 2010 and are due Feb. 15, 2011 by 5 p.m. Application categories include communications, data collection, equipment, injury prevention, personnel and services, recruitment and retention, vehicles and other. Apply at www.coems.info/grants. A 50 percent match is required, and there is a financial waiver process for organizations that cannot meet the match. Financial waiver applications will be reviewed on Feb. 23, 2011, and grant applications will be reviewed March through May. Public notice will occur by June 30 and awards will be issued following July 1, 2011.

3. System improvement funding requests opened on Dec. 15, 2010 and are due Feb. 15, 2011 by 5 p.m. These requests are for projects that impact the state as a whole and can include conference support, meeting development, curricula development, consultative visit projects, data program development, system development, department-initiated/coordinated projects, and technical assistance to local governments or regions. Apply at www.coems.info/grants. There are no match requirements for system improvement funding. Applications will be reviewed on April 6, 2011 by the Public Policy and Finance Committee of the State Emergency Medical and Trauma Services Advisory Council. Public notice will occur by June 30 and awards will be issued following July 1, 2011.

4. Emergency grants are open year-round, and providers experiencing an unexpected emergency that seriously degrades the provision of EMS can apply. Apply at www.coems.info/grants. There are no match requirements for emergency grants. Applications are reviewed by the Colorado Department of Public Health and Environment, and notice of awards occurs within two weeks of review.

To learn more about these funding opportunities, visit www.coems.info/grants or call the Colorado Department of Public Health and Environment at (303) 692-2987.

An example of successful outcomes to an awarded provider grant is below.

SOUTHWEST TELLER COUNTY

EMERGENCY MEDICAL SERVICES

147 E. Bennett Ave. ♦ P.O. Box 826 ♦ Cripple Creek, CO 80813
(719) 689-0240 ♦ FAX (719) 689-0292

November 19, 2010

Jeanne-Marie Bakehouse
EMTS Provider Grant Program Manager
Health Facilities and Emergency Medical Services Division
Colorado Department of Public Health and Environment

Jeanne-Marie,

I just wanted to let you know that our mill levy increase passed by a fairly significant margin (57% for: 43% against). We had an excellent turnout with 48% of eligible voters voting which shows very strong support for the service we provide. We are very relieved that we will have a consistent funding source to cover the deficit between patient receivables and the expenses required to operate the ambulance service.

We also want to thank the EMS Grant program for assisting with funding the personnel this year. Without the funding from the State EMS Grant program we would have had to cut our staff and would only have been able to operate one ambulance in southern Teller County. This interim funding has truly saved this service until we could go to the vote of the people in our district.

I know that there was concern about funding personnel but for us and I believe several other services across our state, this is a very important and appropriate use of the grant funds. Until the reimbursement rates improve, many are struggling to remain viable even though they have good equipment – they just need to be able to fund the people to operate it.

Thanks again for your support of EMS in Colorado.

Candy Shoemaker, BS, NREMT-P
EMS Director, Southwest Teller County Hospital District

ATV Injuries in Colorado

Sallie Thoreson

All-terrain vehicles (ATVs) are one type of off-road vehicle used in Colorado for both work (ranching, farming) and recreation. Nationally, the use of ATVs has increased from an estimated 3.6 million in 1999 to 9.5 million in 2007. Deaths and injuries resulting from use of these vehicles have also increased. In the United States in 2007, an estimated 816 deaths were associated with use of an ATV, while an estimated 150,900 injuries were treated in an emergency department. Children and youth under age 16 accounted for 18 percent of the deaths and 28 percent of the injuries.[1]

Pediatric hospitalizations for ATV injuries increased 150 percent from 1997 to 2006, with the most pronounced increases among 15- to 17-year-olds. Thirty percent of the hospitalized children less than 18 years old had a diagnosis of a traumatic brain injury. The American Academy of Pediatrics and the American College of Surgeons advocate limiting ATV operation for youth under age 16.[2]

The impact of ATV injuries in Colorado also is significant. In 2008 and 2009, 751 individuals were hospitalized for injuries resulting from use of an ATV (an average of 375 hospitalizations per year). Of these, 71 percent were males and 21 percent were children under age 16. The RETACs with the highest ratio of ATV-related hospitalizations in proportion to their population are Western, Central Mountains and San Luis Valley (see table).

Members of the Colorado Rural Traffic Safety Alliance are considering possible injury prevention strategies for ATV safety. The main strategies are:

- Rider education
- Protective gear
- Rider Rules of the Road
- Restrictions of use of ATV by children
- Don't drink and drive
- ATV helmet and safety laws

The Rural Traffic Safety Alliance is especially interested in identifying youth education programs that have been evaluated and found to bring about behavior change. If you are interested in joining the Rural Traffic Safety Alliance to discuss ATV safety or other topics, please contact Sallie, Thoreson, Colorado Department of Public Health and Environment at (970) 248-7161 or sallie.thoreson@state.co.us. ■

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ATV-related hospitalizations based on county of occurrence
Data from the Colorado Trauma Registry and the Colorado Hospital Association
Hospitalizations in 2008 and 2009

RETAC of occurrence	Ratio based on RETAC population (hospitalizations per 100,000)	Number of hospitalizations in 2008 and 2009	Percent of hospitalizations involving non-RETAC residents
Western	36.8	75	64.0%
Central Mountains	31.9	91	64.8%
San Luis Valley	22.9	22	59.1%
Northwest	17.2	85	37.7%
Southwest	14.7	27	40.7%
Southern	13.0	61	34.4%
Southeast	11.0	11	9.1%
Northeast	7.0	84	35.7%
Plains to Peaks	5.6	72	37.5%
Foothills	4.5	78	59.0%
Mile High	2.0	80	27.5%
Out of state	-	59	-
Unknown	-	6	-
Total	-	751	-

Snow Sports Safety

Sallie Thoreson

A La Nina snow year is upon us. Skiers and snowboarders of all ages are heading for the Colorado ski resorts. Snow sports enthusiasts are not necessarily thinking about the risk of injuries, but injuries still occur each winter season.

According to data from the Colorado Hospital Association, each year an average of 780 individuals are hospitalized for injuries resulting from a fall while skiing or snowboarding. More than half of these hospitalizations (55 percent) involve non-Colorado residents.

The Consumer Product Safety Commission suggests that helmet use could potentially prevent 44 percent of head injuries in skiers and snowboarders and 53 percent of head injuries in those younger than 15 years.* Many Colorado ski resorts, local prevention partners and hospitals promote the use of helmets for snow sports through various education and helmet distribution programs. One challenge is to design and implement programs that reach both local as well as out-of-state skiers and snowboarders who use the Colorado slopes.

The ThinkFirst chapter in Eagle County has developed a broad coalition whose mission is to educate area elementary and middle school students on skier safety as well as the importance of wearing helmets. Their ultimate goal is to decrease the number and severity of snow sports injuries that occur. In the 2009-2010 ski season, the ThinkFirst chapter provided education to nearly 3,000 students and distributed 150 helmets. The Central Mountains Regional Emergency Medical and Trauma Advisory Council is assisting the program this year through an EMTS provider grant. For more information on the program, contact Kim Greene, ThinkFirst Chapter Director, Vail Valley Medical Center, (970) 477-5166 or greene@vvmc.com.

Similar activities are happening in Garfield County. Valley View Hospital, EMS agencies and the Sunlight Mountain Resort are planning an event in January 2011 to increase helmet use and promote skier and snowboarder safety.

Through the Child Injury Policy Subgroup, the Injury, Suicide and Violence Prevention Unit at the department works with health and EMS agencies to promote policy strategies for childhood safety. One area of interest is use of helmets in snow sports. The group meets monthly to explore policy issues. If you are interested in joining the group, please contact Lindsey Myers at (303) 692-2589 or lindsey.myers@state.co.us.

If you know of an injury prevention program that should be featured in this newsletter, please contact Sallie Thoreson, Colorado Department of Public Health and Environment at (970) 248-7161 or sallie.thoreson@state.co.us .

* Consumer Product Safety Commission. (1999). 2008 CPSC urges skiers, snowboarders to wear helmet to prevent head injuries. Retrieved Nov. 11, 2010 from www.cpsc.gov/CPSCPUB/PREREL/PRHTML99/99046.html

Hospitalizations for falls due to skiing or snowboarding
Colorado occurrences, 2007-2009 total, by age group

	0-17 yrs	18-35 yrs	36-55 yrs	56+ yrs	Total
Number of hospitalizations	233	749	815	551	2,348
% with traumatic brain injury (TBI)	19.3%	16.2%	5.8%	12.9%	12.1%

EMS and Congenital Adrenal Hyperplasia in Colorado

Marshall Cook

On April 15, 2008 our first grandchild was born at Prowers Medical Center in Lamar, Colorado. Caden Joseph Moore appeared to be completely healthy and happy. Eight days later we learned that he had a disease called Congenital Adrenal Hyperplasia (CAH). After having blood work drawn, we learned that he was within hours of dying from hyperkalemia. The standardized newborn screening conducted on Caden detected an abnormality that prompted his doctor to direct us to the lab.

Caden Joseph Moore

After 24 years with the Lamar Ambulance Service, I never had heard of this disease. Now it was thrust into our world and jeopardizing the life of our grandson. We believe there are numerous pre-hospital care providers throughout Colorado who never have heard of CAH. It is our goal to change that.

Congenital Adrenal Hyperplasia (CAH) is a family of inherited disorders affecting the adrenal glands. The most common form is 21-hydroxylase deficiency (21-OHD), which is inherited in severe (classical) or mild (non-classical) forms. Classical CAH (divided into salt-wasting and simple-virilizing) is usually detected in the newborn period or in early childhood. Caden was diagnosed with salt-wasting CAH, which is the most severe form. Caden stood a 25 percent chance of having CAH because, as we later learned, both of his parents were "carriers" of the autosomal recessive genetic disorder. It is estimated there are nearly 3,000 Colorado residents currently living with CAH ("What is Congenital Adrenal Hyperplasia (CAH)," n.d.).

The most immediate life threat to CAH patients is their lack of cortisol production. Cortisol is a steroid produced by the adrenal glands that our bodies need to: (1) deal with physical and emotional stress, and (2) maintain adequate energy supply and blood sugar levels. During periods of insult normally healthy individuals produce cortisol at up to 10 times the normal level. CAH patients do not produce cortisol normally, thus making any trauma or illness a true life threatening emergency. All individuals affected by Classical CAH require glucocorticoid (hydrocortisone, prednisone, dexamethasone) replacement therapy. Those with a salt-wasting component to their insufficiency also require mineralocorticoid replacement (fludrocortisones) and sodium. The drug of choice for CAH patients in acute adrenal crisis is hydrocortisone sodium succinate. Administration of hydrocortisone has almost immediate positive effects on CAH patients in acute adrenal crisis.

We believe there are numerous pre-hospital care providers throughout Colorado who never have heard of CAH. It is our goal to change that.

Although the Rule 500 Formulary currently authorizes the administration of methylprednisolone, it is not the drug of choice when treating acute adrenal crisis in CAH patients. Injectable hydrocortisone sodium succinate administration is the standard of care during an adrenal crisis for patients affected by CAH (and other adrenal insufficiencies) because, unlike methylprednisolone, hydrocortisone sodium succinate provides both glucocorticoid and mineralocorticoid coverage and has an onset of action of minutes (Pharamcia UpJohn). Additionally, it costs less than $7 per 100mg/2ml vial and will not harm an unaffected individual if administered in error.

Currently the Formulary in Rule 500 does not allow for administration of hydrocortisone sodium succinate by ambulance personnel. In Rhode Island, Massachusetts, parts of New York, and Texas pre-hospital care protocols for the treatment of adrenal insufficiency are in place. New Hampshire and Vermont have approved protocol adoption with implementation expected in early 2011.

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EMS and Congenital Adrenal Hyperplasia in Colorado

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Regional adoption of protocols is underway in Tennessee and Maine as well as training in adrenal insufficiency treatment and training therein is complete in Nevada and Maryland. EMS leadership in nine other states are working toward emergency treatment of adrenal insufficiency. An EMT continuing education credit course "Adrenal Crisis and EMS" is available nationwide through the University of New Mexico's EMS online education program.

The Lamar Ambulance Service has been approved by the state's Medical Direction Committee (now the Emergency Medical Practice Advisory Council) to carry and administer hydrocortisone sodium succinate to known adrenal insufficiency patients suffering from acute adrenal crisis as the result of trauma or illness. It is our goal to encourage as many waiver applications throughout Colorado as possible leading to statewide adoption of pre-hospital care protocols for adrenal insufficiency. With CAH patients living in our communities and traveling our highways, practically any ambulance service may encounter these patients.

The staff of the Lamar Ambulance Service is excited to be a part of this effort and we will gladly provide copies of our waiver application and protocols to any ambulance service that would like to provide this simple and inexpensive, yet life-saving treatment. Please feel free to contact us at (719) 336-4321.

You can find a wealth of information about CAH and hydrocortisone administration at the Congenital Adrenal Hyperplasia Research and Education (CARES Foundation) website at www.caresfoundation.org. The fine people at the CARES Foundation have been a tremendous asset to us in our efforts here in Colorado. ■

Marshall Cook is fire chief of the Lamar Fire and Ambulance Services and can be reached at marshall.cook@ci.lamar.co.us.

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Annual EMS Safety Summit a Success

Sean Caffrey

A successful 3rd Annual EMS Safety Summit was held October 13-15, 2010 in Loveland that brought together more than 100 EMS leaders throughout Colorado to focus on current safety issues in the EMS community. This Safety Summit represents the third year of an ongoing partnership between the Mile-High RETAC, the State Emergency Medical and Trauma Services Advisory Council (SEMTAC) and the Colorado Department of Public Health and Environment that began as a collaborative effort to reduce accidents for EMS providers and the public.

Participants at the vendor show

This year's event was notable in that it offered multiple preconference sessions and brought to Colorado a number of leading national and international experts in the EMS safety arena. Preconference sessions included a pilot of the new EMS Safety continuing education program developed by the National Association of EMTs (NAEMT) with more than 20 attendees. Once finalized, this course is expected to be available as a regular continuing education offering nationally. Also offered was a user group training by Road Safety International and a traffic control for emergency responders course offered by the American Traffic Safety Services Association. A great deal was learned from each of these sessions that will lead to continued improvement of the educational offerings at the Safety Summit in future years.

The conference featured multiple expert speakers on safety culture, emergency vehicle visibility, safe and effective treatment of cardiac arrest, safe transport of children, the future of EMS driving safety, improved ambulance design and effective air ambulance utilization.

Emergency vehicle visibility expert John Killeen of Canberra, Australia gave a very popular talk on current issues in high-visibility vehicle markings and warning equipment. A download of that presentation is available at John's website at www.ambulancevisibility.com. John's presentation and travel expenses were sponsored by American Medical Response.

In addition to the educational sessions, the recent Summit also had the largest group of exhibitors of any Safety Summit to date including multiple equipment, vehicle and service vendors. The small size of the event allowed for ample opportunity for participants to spend time with speakers and exhibitors.

Most of the educational sessions received excellent reviews and the planning committee is excited to begin programming for the 2011 Summit. The planning committee hopes to continue the focus on finding leading experts in their fields as topics are developed for the conference. EMS community input is welcome regarding future topics and can be directed to Sean Caffrey at sean.caffrey@state.co.us.

Dr. David Ross and Kim Schallenberger

For 2011, discussion may include topics on patient safety, evolving ambulance design standards and continued emphasis on safe operations in roadways. The SEMTAC continues to look for opportunities to engage the Safety Summit audience in a conversation about how EMS safety issues should be advanced within the state. The Safety Summit planning team is meeting monthly and the 4th Annual EMS Safety Summit is tentatively scheduled for Sept. 7-9, 2011.

Sean Caffrey is the system development coordinator at the Emergency Medical and Trauma Services Section and can be reached at sean.caffrey@state.co.us.

Nick Boukas

Joins the Emergency Medical and Trauma Services Section

We are extremely pleased to announce the appointment of Nick Boukas to the position of Emergency Medical Practice Advisory Council (EMPAC) coordinator within the Emergency Medical and Trauma Services Section.

Nick comes to the department with many years experience in the EMS and trauma industry, most recently as EMS Chief for the Evergreen Fire Department. His background includes experience with the New York City Fire Department's EMS division and the regional EMS office covering the five boroughs of New York City. Since moving to Colorado, Nick has been an active participant in the local and statewide EMTS system, including working with the Denver Metro EMS Physicians Group on editing the Denver Metro Prehospital Protocols and teaching all levels of EMS education.

He holds a master's degree in public administration and is a nationally-registered and Colorado-certified paramedic. His duties will include coordinating the activities of the newly-formed Emergency Medical Practice Advisory Council and supporting the department's responsibilities regarding EMS provider scope of practice, waivers to the scope of practice and the duties and qualifications for EMS medical directors.

In his spare time, Nick enjoys reading, music and sports. He and his wife enjoy spending time with their two dogs and three cats. Please join us in welcoming Nick to the section.

AIRLIFE Denver
Air Ambulance Program of the Year

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AIRLIFE made its maiden flight on May 9, 1983 to Durango in a Bell 206 Long Ranger helicopter. In its first year of service, AIRLIFE completed 207 missions. The following year, 1984, was also a significant year for AIRLIFE as a second helicopter and a plane were added to the service. The high risk OB team was started and the AIRLIFE communications center began operations. In 1985, AIRLIFE flew its first international mission to Mexico.

By 1986, AIRLIFE had completed 2,000 missions. In 1989, the Intra-Aortic Balloon Pump team was established. The neonatal team was added in 1991 and pediatric transport services were enhanced in 1992. In 1997, AIRLIFE put two new Bell 407 helicopters into service. By 2008, AIRLIFE had completed more than 40,000 missions and reached 25 years of medical transport service to the Rocky Mountains and surrounding regions. AIRLIFE recently added a third Bell 407 helicopter and a second ambulance to its fleet.

The program operates with 123 staff members spanning five bases in the front range area of the state. AIRLIFE services an eight-state region that includes Colorado, Wyoming, Montana, Nebraska, Kansas, New Mexico, Utah and South Dakota. For greater distances, AIRLIFE utilizes two Lear Jet 31s, provided by International Jet Aviation and based at Centennial Airport.

After AIRLIFE's loss of an aircraft and crew in 1997, the program began to extend an already extensive safety culture, not only within the organization, but also in the community. One of the program's many community initiatives is its "safety is not proprietary" outlook. The program took best practices in safety and began sharing them with the EMS and trauma community and other air ambulance programs. This safety sharing includes orientation for representatives of out-of-state agencies who visit Colorado. AIRLIFE also memorializes the loss of 1997 by holding a Safety Stand Down Day every December. In the Safety Stand Down Day, they showcase the best of safety practices learned from AIRLIFE and other programs in the country. This program also offers a Safety Inservice for any agency who wishes to receive one.

Please join us in congratulating the deserving staff of AIRLIFE in the noteworthy achievement of receiving this award. ■

For details about this program, please visit www.airlifedenver.com