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Colorado Department  
of Public Health  
and Environment

## Emergency Medical and Trauma Services System Annual Legislative Report

Submitted to the Colorado Legislature  
By the Emergency Medical and Trauma Services Section  
Health Facilities and Emergency Medical Services Division  
Colorado Department of Public Health and Environment

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## **Executive Summary**

Colorado's emergency medical and trauma services system provides transportation and immediate care to the sick and injured 24 hours a day, 365 days a year, providing approximately 450,000 patients with care and transportation by ambulance, of whom approximately 23,500 are classified as trauma patients. Emergency medical and trauma care services are defined as the immediate health care services needed as a result of an injury or sudden illness, particularly when there is a threat to life or long-term functional abilities. In addition, this comprehensive system provides transportation in non-emergent settings and supports long-term patient care goals. Patient survival depends on several factors, including the availability of appropriately trained health care providers and properly equipped and positioned ambulances, rescue units, trauma centers, general hospitals and other specialized health care facilities. Colorado's coordinated emergency medical and trauma services system offers timely preventive, acute and rehabilitative health care services for the state's residents and visitors.

The number of injury deaths in Colorado was 3,100 in 2007, making trauma the leading cause of death for Coloradans ages 1-44. Studies indicate that 30 percent to 40 percent of all trauma deaths occur within one hour of injury, and that 30 percent to 40 percent of these deaths are preventable if timely, appropriate care is received. Based on trauma registry data and 2000 national cost figures, the department estimates the total annual cost of injury in Colorado to be \$6.85 billion (\$1.49 billion in medical costs and \$5.36 billion in productivity losses). National experience clearly demonstrates that a coordinated and well-developed emergency medical and trauma services system can result in a reduction of the number of preventable deaths and a reduction in disability resulting from injury.

The individual program components that make up Colorado's emergency medical and trauma services system include:

- Public Education and Information
- Injury Prevention
- Communications Systems
- Training and Certification of Emergency Medical Technicians
- Transportation Systems, including Air and Ground Ambulance Licensure Standards
- Trauma Center Designation for Acute Care Hospitals and Clinics
- Rehabilitative Care
- Disaster Medical Care
- Education and Research
- Trauma Registry and Prehospital Data Collection
- State and Regional Continuing Quality Improvement Systems
- Planning – State Emergency Medical and Trauma Services Advisory Council and Regional Emergency Medical and Trauma Advisory Councils



This report identifies the specific responsibilities of the department and provides a focused discussion of the utilization of state resources available for system development. The report concludes with a more detailed statement about future and ongoing challenges to system development.

## Funding

The Emergency Medical and Trauma Services Section continues to be funded almost exclusively from the Emergency Medical Services Account of the Highway Users Tax Fund, supplemented by the collection of trauma center designation fees, air ambulance licensure fees and a limited short-term federal grant to support emergency care for children. A \$1 fee included in each motor vehicle's annual registration funds the Emergency Medical Services Account. This fund was established in 1989 and has not changed since that time. There has been no significant adjustment to this funding process since initial implementation despite the continued increases in costs to provide services throughout Colorado. Accordingly, the ability of the department to expand support to services, particularly those in rural and frontier counties, has been greatly hindered.

## Challenges

Significant improvements in process and a sharpening of focus have been realized and continue to be closely monitored to ensure that the organizational responsibilities of the Emergency Medical and Trauma Services Section are met with the highest levels of quality and accuracy. In 2006, a reorganization of work unit responsibilities to more closely align with organizational goals was accomplished. The effectiveness of the Emergency Medical and Trauma Services Section has continued to improve as evidenced by better communication with community stakeholders and through processes that are predictable and inclusive. These actions support the section's commitment to protecting the safety and welfare of the public while also serving the needs of the stakeholders.

The section regularly conducts self-assessments to ensure continued progress. During the past year, funding has been identified to support two comprehensive system assessments by external experts. These assessments include a statewide assessment of Colorado's trauma system and a three-year project to perform comprehensive assessments of systems in each of Colorado's eleven Regional Emergency Medical and Trauma Advisory Councils (RETAC). Both of these assessment projects are supported by current statutory language and will result in a comprehensive review of the current status of EMS and trauma systems in the state and provide the basis for strategies to improve these systems.

An ongoing challenge is developing and sustaining rules and policies that are consistent with the changing needs of the emergency medical and trauma services community.

During the past year, new rules governing the requirements for Level I and Level II trauma centers were developed and promulgated by the Board of Health in October 2008. These rules will take effect in December 2008. The statewide task force that created these revised rules began its work in 2006 and worked cooperatively to ensure the development of

comprehensive requirements to support Colorado's most sophisticated trauma centers. These rules include updates and modifications of the national standards developed by the American College of Surgeons in 2006-2007, as well as issues specific to the provision of trauma care in Colorado.

In February 2006, the Emergency Medical and Trauma Services Section began licensing rotary- and fixed-wing ambulances that pick up patients at any point within Colorado. At the present time, all Colorado-based air ambulances and several services based outside of the state are licensed. Licensing has resulted in a requirement that air ambulance agencies must either be accredited by the Commission on Accreditation of Medical Transport Systems (CAMTS) or actively pursuing such accreditation as evidenced by the CAMTS organization.

As a result of legislation in 2007, a rule revision process was completed in March 2008 to update the air ambulance licensing rules and maintain consistency with current statutory language. In addition to clarifying the time frame during which an applicant must accomplish CAMTS accreditation, the new rules allow the department to authorize air ambulance transports by non-licensed services that meet specific exigent circumstances criteria. These rules were completed and promulgated by the Board of Health.

The development of a comprehensive patient care reporting system by ambulance services has been an ongoing project during the past ten years and has achieved significant success during the last two years. This effort focuses on a statewide database where information regarding individual patient care transports by ambulance services is collected and then analyzed. This information assists in determining the effectiveness of Colorado's emergency medical and trauma services system and in guiding future policy decisions at the local, regional and state levels. This system is authorized in statute, although resources to appropriately support this project have been somewhat limited. Significant progress has continued to be made during the past year in the collection of patient care reports with over 500,000 being submitted since January 1, 2006.

The development of meaningful reports for use at the local, regional and state levels has been accomplished and continues to evolve as more accurate information is becoming available. Although progress remains steady, limitations in resources to support this effort continue to be a significant challenge in terms of providing technical support to small ambulance services in rural and frontier communities. These small services tend to lack the expertise locally to address technical problems in both collecting and transmitting data. These barriers not only result in difficulties in submitting data, but also have a negative effect on their ability to bill for services, resulting in a loss of revenue to support these important services.

In May of this year, rules governing the submission of data by local services were completed and promulgated by the Board of Health. These rules were the result of two years of work by a comprehensive stakeholder group and identify the parameters of data submission as well as the deadlines by which this information must be submitted. These rules were supported by community stakeholders and have become the framework that will support this important system for the foreseeable future.

The challenge of continuing to review and update rules in data collection, certification, trauma center designation and grant funding remains a primary focus of the Emergency Medical and Trauma Services Section. Upcoming changes at the national level in terms of EMT scopes of practice and education requirements will necessitate significant rule changes over the next 18-24 months. This process has been initiated through the State Emergency Medical and Trauma Services Advisory Council (SEMTAC). A stakeholder task force has been established and recently completed recommendations for changes in Colorado's certification policies to enable the state's compliance with new national EMT education standards that will be implemented over the next three years. Colorado is one of the first states in the country to have completed this strategy development process.

The revenue generated from the Emergency Medical Services Account continues to be a significant concern. The various programs that depend on this funding are operating within a very narrow margin, and a small shift in expenses or revenue can easily create an unexpected shortfall. The department and the State Emergency Medical and Trauma Services Advisory Council monitor the situation and will be prepared to make adjustments as needed in the grants program, regional funding, certification, training and other program activities. Clearly, this situation dictates that no new programs or support to local services can be implemented in the foreseeable future.

Given the status of potential natural and/or man-made threats to our state and nation, the importance of ongoing coordination between state and local agencies in the development of multi-casualty plans is critical. The Emergency Medical and Trauma Services Section, in concert with the Regional Emergency Medical and Trauma Advisory Councils, will continue its work with emergency managers and the All Hazards regions to ensure that emergency medical and trauma services resources are appropriately incorporated into both state and local plans. In preparation for the Democratic National Convention in August 2008, the Emergency Medical and Trauma Services Section developed a comprehensive database from the various information sources it maintains. This system was designed to provide rapid access to the state's ambulance and rescue services. In cooperation with other divisions of the department, the section assisted in staffing the operations center during the convention. This effort has clearly resulted in an improved integration of the state's emergency medical services system and the emergency management system that supports Colorado's all-hazards response.

In 2006, the State Emergency Medical and Trauma Services Advisory Council made a major commitment to initiating the development of a five-year strategic plan for emergency medical and trauma services in Colorado. This effort has involved all council members, committees and stakeholders by focusing on the identification of priorities at the constituent level. These priorities were then passed upward through the organizational structure. The council has completed its initial process and defined appropriate goals and objectives. This process has resulted in a re-structuring of the council's committees. This new structure is designed to ensure that those stakeholders most affected by regional and state policies have the most significant voice in the process. The Emergency Medical and Trauma Services Section will support this effort by providing technical assistance and information as appropriate.

## **Colorado Department of Public Health and Environment Roles and Responsibilities**

The Colorado Department of Public Health and Environment shares regulatory responsibilities for the practice of emergency medical technicians (EMTs) and oversight of emergency medical services (EMS) medical directors with the Colorado Board of Medical Examiners. The responsibility for the licensing of ground ambulances is shared with the governing bodies of Colorado's counties. Additionally, the State Emergency Medical and Trauma Services Advisory Council provides recommendations on department rules, utilization of the funds in the EMS Account, implementation of program activities and assistance with the identification of system needs and priorities.

As set forth in the Colorado Revised Statutes and regulations promulgated pursuant thereto, the department's primary roles in the development of emergency medical and trauma services throughout the state are as follows:

- Certification of EMTs, including processing applications, issuing emergency medical technician certificates, investigating complaints and instituting disciplinary actions involving EMTs.
- Regulation of institutions providing emergency medical technician training, including developing curricula, approving course content, monitoring the quality of instruction and investigating complaints involving training centers.
- Administration and management of the Emergency Medical Services Provider Grants Program.
- Provision of community and regional technical support for the development and provision of emergency medical and trauma services across the state in coordination with the Regional Emergency Medical and Trauma Advisory Councils.
- Development and implementation of a comprehensive EMS data collection system.
- Designation of health care facilities as one of six possible levels of trauma centers.
- Analyses of the components' responses to injured patients using quality improvement models.
- Licensing of air ambulance services picking up patients in Colorado.
- Creation and maintenance of the Colorado Trauma Registry.
- Evaluation of the emergency medical and trauma services system.
- Ensuring the maintenance of standards that address emergency care of children.
- Targeted program activities based on available federal funding.

## Legislative Background

The 1978 *Emergency Medical Services Act*, as amended, gives the department, the Board of Medical Examiners and individual counties, with advice from the State Emergency Medical and Trauma Services Advisory Council, limited authority to develop a coordinated emergency medical services system. In the original legislation, the department was given the primary responsibilities of certifying EMTs and of approving course content and curriculum prior to an institution providing training programs for EMTs. Additionally, the legislation mandated that all EMTs be subject to medical direction by a licensed physician; thus, the Colorado Board of Medical Examiners was given supervisory authority over medical directors. The Colorado Board of Medical Examiners was also charged with adopting rules defining the authorized acts and medications for EMTs. Finally, counties were given the responsibility of inspecting and licensing ground ambulances based in their respective counties.

In 1989, a stable, minimum level of funding for the state's emergency medical services system was established by inclusion of a \$1 fee in each annual motor vehicle registration. This revenue is deposited into the Emergency Medical Services Account of the Highway Users Tax Fund. Until July 1, 2002, the annual appropriation was distributed in a fixed ratio with 60 percent designated for distribution as grants to improve and maintain local emergency medical services systems; 20 percent for county planning and coordination of emergency medical services; and 20 percent for the direct and indirect costs of the department for planning, developing, implementing and maintaining the statewide system.

The *Trauma System Act of 1995* gave authority to the department to assist in the development of a coordinated statewide trauma system. System development was the combined responsibility of the department, the Board of Health and all Colorado counties, with advice from the State Trauma Advisory Council. The Board of Health and the department established the trauma system's framework with the development of minimum system standards, including standards for hospitals and other health care facilities to become designated trauma centers. Area Trauma Advisory Councils were formed throughout the state in 1998 and were responsible for development of area plans for the coordinated delivery of care to trauma patients in their respective areas.

The *Colorado Emergency Medical and Trauma Services Act of 2000* created a merged state advisory council, the State Emergency Medical and Trauma Services Advisory Council (Appendix A). It also merged the regional efforts of the Area Trauma Advisory Councils and the voluntary efforts of the Emergency Medical Services Regional Councils to create the Regional Emergency Medical and Trauma Advisory Councils (Appendix B and Appendix C).

The Act also gave the new state council the responsibility of making recommendations for the utilization of the EMS Account funds beginning on July 1, 2002. The required 60/20/20 annual appropriation distribution, described above, was removed at that time, providing more appropriate flexibility in funding system development priorities. Finally, the legislation gave

the department authority to designate Level V Trauma Centers and to license air (fixed- and rotor-wing) ambulance services.

In 2001, the Board of Health was given the authority to adopt rules for the utilization of the results of criminal background checks in the certification of EMTs.

In 2002, a technical bill was passed that rectified some housekeeping matters and eliminated inconsistencies as well as clarified the role, responsibilities and funding of the Regional Emergency Medical and Trauma Advisory Councils.

In 2003, legislation was passed implementing recommendations of a 2002 Legislative Audit. The Board of Health was given the authority to promulgate rules that define the review and designation cycles for Colorado's trauma centers. Other legislation removed the option of conducting name-based criminal background checks for EMT certification, instead requiring fingerprint-based criminal history record checks only. It also gave the Board of Health the authority to adopt rules enabling the department to consider crimes of moral turpitude in the certification of EMTs.

In 2005, the legislature passed two important bills affecting the emergency medical and trauma services system. The first bill clarified the licensing requirements of air ambulances in Colorado by requiring accreditation by the Commission on Accreditation of Medical Transport Systems (CAMTS) for any air ambulance service transporting patients within or from the state of Colorado. The second bill increased and clarified the investigative powers of the department in the investigation of allegations of misconduct by certified EMTs as well as required the reporting of misconduct by emergency medical services medical directors, emergency medical service agencies and certified EMTs.

In 2007, amendments were made to the air ambulance licensing statute and to the EMT certification statute. The air ambulance statute was amended to clarify that the department may issue a conditional license to an air ambulance service that is actively working towards Commission on Accreditation of Medical Transport Systems (CAMTS) accreditation, but has not yet achieved it. The service has two years to achieve CAMTS accreditation, after which it will not be issued a license until accreditation is achieved. Additionally, the Board of Health was given authority to promulgate rules defining exigent circumstances that would allow an unlicensed service to pick up patients in Colorado for a particular transport. The EMT certification statute was amended to provide the department with the ability to accept a name-based criminal history report after an applicant for EMT certification has twice submitted to a fingerprint-based report and the FBI or CBI has been unable to classify the fingerprints.

## **Part I**

### **Emergency Medical and Trauma Services Section Funding**

#### **Emergency Medical Services Provider Grants Program**

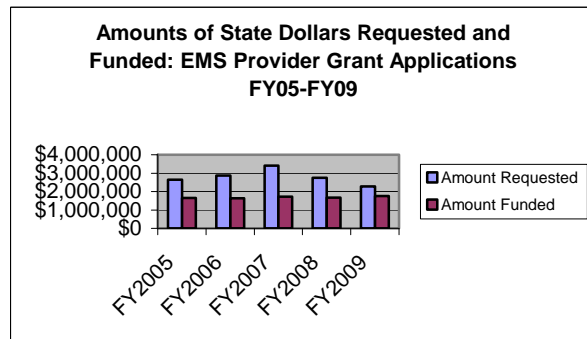
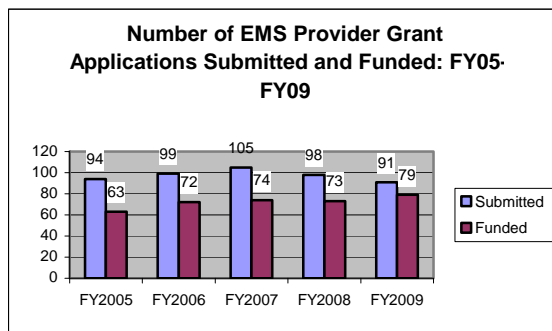
##### **Funding Distribution**

The FY09 budget from the Emergency Medical Services Account for the Provider Grants Program is \$2,078,793, which includes the allocation of a minimum \$150,000 for emergency medical personnel training and \$100,000 reserved for emergency grant awards. The emergency fund was established to provide immediate financial assistance to emergency medical services provider agencies experiencing unexpected problems that compromise their ability to provide emergency medical services.

A complete list of the specific grant awards for FY09 can be found in Appendix D. The table below provides a summary of awards.

<b>Emergency Medical Services Grant Funding 2008-2009</b>		
	<b>Awarded</b>	<b>Award %</b>
<b>Provider Grants</b>		
Emergency vehicles	\$1,009,572	
EMS training	316,674	
Equipment: defibrillation/cardiac monitor, extrication, communication and general EMS equipment	306,121	
Data collection	65,451	
Injury prevention, recruitment/retention and other	63,318	
Provider Grants Subtotal	\$1,761,136	85%
Emergency Fund	\$100,000	5%
Statewide Funding Projects		
Standardized Regional Needs Assessment	\$100,000	
San Luis Valley Consultative Review	25,000	
RETAC Quarterly Forum Project	20,000	
EMS Educator Conference	15,000	
Statewide EMS Data Conference	15,000	
Ambulance safety toolkit project	15,000	
EMS Management/Leadership Seminar	12,000	
Statewide Funding Projects Subtotal	\$202,000	10%
<b>Total</b>	<b>\$2,063,136</b>	<b>100%</b>

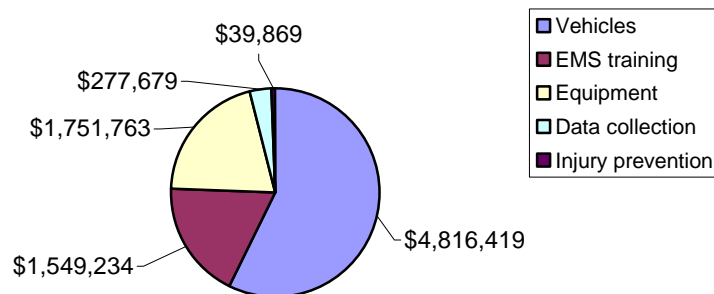
For the Provider Grants portion in FY09, the department received 91 grant applications requesting funding for projects totaling \$2,273,442 (amount requested as grant funding from the state). The department was able to fund 79 of these requests, continuing a five-year trend of not being able to fully fund the applications. The following two charts show the disparity across the five years between what is requested and what is funded.





Emergency vehicles, the most requested and most expensive equipment, again topped the list of funded items in FY09. Over the past five years, \$4,816,419 has gone into funding emergency vehicles, thus helping to ensure safe and reliable transport vehicles are available throughout Colorado. Additionally, \$1,549,234 has been awarded to further the education of Colorado's more than 15,000 emergency medical technicians.

**Funds Awarded: EMS Provider Grants Program  
FY05-FY09**



#### Statewide Funding Projects

The department, in consultation with the State Emergency Medical and Trauma Services Advisory Council, funds statewide projects that improve emergency medical and trauma services and impact all emergency medical service providers in Colorado. The following is a list of these projects slated for implementation in FY09:

- **Standardized (Regional) Needs Assessment Project - \$100,000:** This project supports the active implementation of a standardized assessment of Colorado's eleven RETACs in support of statutory requirements. The goal of this project is to develop and implement a methodology to conduct emergency medical and trauma services system needs assessments that provide accurate and timely information to counties, RETAC boards and the Department of Public Health and Environment. A task force of representatives from each RETAC, Colorado Rural Health and the County Commissioners of Colorado, Inc. has been formally appointed and is directing this effort. In October 2008, a provider to implement this project was selected following a rigorous bidding process. During the next fiscal year, a minimum of three RETACs will be assessed.
- **San Luis Valley RETAC Consultative System Review and Assessment - \$25,000:** During the past year, the Emergency Medical and Trauma Services Section, at the request of the San Luis Valley RETAC, has been working with the six counties that make up this region to provide technical support at the local level by addressing a number of system-wide issues and problems that appear to be hindering the efficient provision of care and transportation in that region. The goal of this project is to contract with 3-4 individuals from outside of the San Luis Valley, with specific expertise in EMS service design,

trauma system development, medical direction and EMS system operations. This consultative team will conduct a thorough review of each individual service agency, hospital and component of the emergency medical and trauma services system in the San Luis Valley RETAC. The review will describe the current system operations and identify opportunities for both short and long-term strategies that will increase the effectiveness and cohesiveness of the local patient care system(s). It is important to note that this type of system review differs from the Standardized (Regional) Needs Assessment Project as this consultative review project is aimed at identifying specific operational issues in the local/regional EMS system and identifying methods to improve the day-to-day performance of EMS services, their relationships with each other and relationships within the local medical community. The Standardized (Regional) Needs Assessment Project is a needs assessment process identified in statute, which will be conducted at a RETAC and statewide level only.

- RETAC Quarterly Forum Project, Statewide Meetings - \$20,000: For the past eight years, quarterly Regional Emergency Medical and Trauma Advisory Council meetings have been conducted in order to enhance the development of the regional councils and offer technical assistance. The department contracts with the regional council selected to host each forum to coordinate the meetings. Department staff, State Emergency Medical and Trauma Services Advisory Council members, regional council coordinators, regional council executive council members, county commissioners and members of the public routinely attend these meetings and provide collective input and direction to support the local implementation of emergency medical and trauma services system goals. This process has been extremely beneficial in terms of improving organizational communications between the Emergency Medical and Trauma Services Section, the Regional Emergency Medical and Trauma Advisory Councils and the State Emergency Medical and Trauma Services Advisory Council. In addition, it has become a medium for the development of strategic goals that will ultimately benefit all of Colorado's emergency medical and trauma services system.
- EMS Educator Conference - \$15,000: In 2007, the First Annual Educator Conference was held in conjunction with EMS Week activities and was attended by more than 100 instructors. The 2008 conference was held on May 16, 2008, and Health One EMS contracted with the department to offset lodging and meal costs for EMS educators to attend and receive targeted continuing education designed specifically to update training programs and teachers that provide both initial and continuing education to Colorado's EMS providers. Funding from the Emergency Medical and Trauma Services Section's personal services funds supported both the 2007 and 2008 conferences. However, these funds are no longer available to support this important effort. The value of this effort is evidenced by the outstanding support shown by Colorado EMS educators that have participated to date, and every effort should be made to ensure that important information regarding the education of EMTs at all levels continues. This is the only statewide continuing education offering targeted to address the needs of EMS educators.
- Statewide EMS Data Conference - \$15,000: Each transporting ambulance service is required by statute to submit patient care records to the department. In 1998,

development of a prehospital care data collection system began. Due to legislative budget constraints, full implementation of this program on a statewide basis has been difficult to accomplish. Since 2005, this project has been reorganized and has made significant progress by establishing a robust statewide database that presently holds more than 500,000 records with additional ambulance services coming into the system on a regular basis. In 2007, the first statewide data conference was held in Longmont, Colorado, with approximately 100 participants and the 2008 data conference was held on May 22-23, 2008. The first two conferences were supported by the Emergency Medical and Trauma Services Section through personal services funds. These funds will no longer be available due to full staffing and other operational requirements by the section. Specifically, this project will be supported by contracting through an appropriate vendor to produce the overall conference with these funds dedicated to offset lodging and meal costs in an effort to support local EMS agency attendance. The data conference is designed to provide a venue for EMS agencies throughout Colorado to improve their collection and analysis of EMS system performance information. Sessions are designed to provide agency level personnel with improved understanding and skills with regard to the appropriate use of patient care data in developing improved response systems, patient safety and general policy development at the local, regional and state levels.

- Ambulance Safety Toolkit Project - \$15,000: Approximately 50 EMTs are killed and over 3,000 are injured each year in the U.S. as the result of motor vehicle crashes involving ambulances and other emergency response vehicles. Under the guidance and advice of the State Emergency Medical and Trauma Services Advisory Council, its transportation committee is developing public service announcements, model service policies and model training curricula designed to provide information to Colorado's 190 ambulance services regarding methods to improve safety as it relates to the operation of emergency vehicles on Colorado roadways. The products developed by this group are being made available to all emergency medical service and emergency response organizations throughout the state in hopes of ensuring the enhanced safety of EMTs, patients and the general public. To date, a public information announcement and a PowerPoint presentation have been developed and are being distributed. These funds will be focused on further development of a comprehensive program to improve the driver training requirements for EMS personnel operating emergency vehicles.
- EMS Management/Leadership Seminar - \$12,000: Through a contract with the Emergency Medical Services Association of Colorado, this project provides reduced tuition for a management training course for emergency medical services administrators and managers. This project has been well received in prior years and continues to benefit emergency medical services agencies throughout the state. This year's offering will be conducted in multiple locations in Colorado, enhancing attendance by local EMS providers and will be conducted by nationally recognized experts with a focus on the development of leadership and management skills to enhance individual service effectiveness at the local level.

## **Regional Emergency Medical and Trauma Advisory Council Development**

### **Summary of Legislation**

The *Colorado Emergency Medical and Trauma Services Act of 2000* created Regional Emergency Medical and Trauma Advisory Councils. There are eleven Regional Emergency Medical and Trauma Advisory Councils. Each regional council consists of a minimum of five counties (Appendices B and C) with the board members being appointed by the counties that make up the region.

Regional councils have the responsibility for creating, supporting and implementing a regional plan for improving the delivery of emergency medical and trauma care at the local/county level. These efforts will be further refined over the coming year, and appropriate adjustments will be made as data become available. At a minimum, each regional council must:

- Provide a biennial plan that details the regional emergency medical services plan.
- Provide an annual financial report that details the expenditures of money received.

The State Emergency Medical and Trauma Services Advisory Council reviews the plan and financial reports.

### **Current Funding Distribution**

Based on the *Colorado Emergency Medical and Trauma Services Act*, since July 1, 2002, each regional council has received annually \$75,000 plus \$15,000 for each county within the region. These funds are for administrative costs, planning and, to the extent possible, the coordination of services in and between counties. Total FY09 funding for the Regional Emergency Medical and Trauma Advisory Council is \$1,785,000.

## **Trauma Center Designation**

### **Summary of Legislation**

In 1995, trauma system legislation created a Trauma System Cash Fund and authorized the Board of Health to establish a schedule of fees based on the direct and indirect costs incurred in the designation of trauma centers. The fee schedule was adopted in January 1998, with the collection of fees beginning in April 1998; the fee structure has not been changed since that time. Unfortunately the fee basis did not include many of the costs associated with system development including: rule development/modification; processing of appeals or waiver requests; attorney fees; provision of training and technical assistance; development of the state trauma registry or system quality improvement. Such activities are included in the jobs of current employees but occur at a much slower pace than they would if they were adequately funded.

## Current Funding Distribution

The FY09 spending authority for trauma designation-related costs is \$383,996 and includes site review teams; administrative costs, including the cost of providing a state observer; rule development; system development and assessment; and the indirect cost assessment.

During the past year, the staff successfully wrote a grant to fund a trauma system consultation. The Caring For Colorado Foundation is providing sufficient funding for the American College of Surgeons to bring a review team to Colorado to assist in planning for the next stages in trauma system development. Funding is always an area of focus, and staff and constituents are eager to hear recommendations after the visit.

Trauma program staff has worked with the EMS and trauma data program manager to select data points that will provide information to facilities and the system through automated quarterly reporting. Identifying additional funding for trauma registry data analysis remains a program priority.

## **Part II**

### **Evaluation of the Emergency Medical and Trauma Services System**

Following is the status of each of the components of Colorado's emergency medical and trauma services system. Each section includes the contributions made toward system development by the department's Emergency Medical and Trauma Services Section, working in coordination with the State Emergency Medical and Trauma Services Advisory Council and the Regional Emergency Medical and Trauma Advisory Councils. The components are:

- Public Education and Information
- Injury Prevention
- Communications Systems
- Training and Certification of Emergency Medical Technicians
- Transportation Systems, Including Air and Ground Ambulance Licensure Standards
- Trauma Center Designation for Acute Care Hospitals and Clinics
- Rehabilitative Care
- Disaster Medical Care
- Education and Research
- Trauma Registry and EMS Data Collection
- State and Regional Continuing Quality Improvement Systems
- Planning by the State Emergency Medical and Trauma Services Advisory Council and Regional Emergency Medical and Trauma Advisory Councils

## Public Education and Information

Since the July 2005 inaugural edition of its newsletter *On the Scene: Covering EMS in Colorado*, the Emergency Medical and Trauma Services Section has incorporated regular articles from the Regional Emergency Medical and Trauma Advisory Council coordinators, the section chief and the state medical director. In addition, the publication includes guest columns; agency highlights; injury prevention and recruitment/retention spotlights; data collection highlights and trends; upcoming events; and other timely, pertinent emergency medical service-related information. The newsletter serves as a direct communication between the department and emergency medical service providers and has been well received by the communities of interest throughout Colorado. The Emergency Medical and Trauma Services Section also keeps its website current and issues press releases for news and events that the public and press might find useful.

### Current Activities:

- The section continues to distribution press releases as appropriate based on current news and events.
- The section's website, located at [www.coems.info](http://www.coems.info), continues to grow and expand. Recent uploads to the site include the redesigned CEMSIS web portal, the most recent version of the EMT Certification Application and the new EMS grants progress reports. Section staff ensure that the site contains timely and useful information.
- The section's quarterly newsletter, *On the Scene*, is distributed quarterly through e-mail and is posted to the Internet at [www.coems.info](http://www.coems.info). The newsletter contains feature articles on emergency medical and trauma services issues statewide, as well as regular announcements and program updates. A reader survey of the newsletter, conducted in August 2008, indicated areas of readers' interests. The fall edition of the newsletter was expanded to include reader suggestions and topics, and a follow-up survey will be completed in two years.
- Section staff continue to schedule and attend annual "town hall" style meetings in different regions throughout the year. These meetings provide a venue for staff and stakeholders to meet on a regular basis to discuss issues of interest at the local level.

### Opportunities:

- Staff continue to raise community-based awareness about the complexities of the emergency medical and trauma services system as well as identify and maintain ongoing support for these activities.

## Injury Prevention

Injury prevention activities are coordinated with the activities of the Injury and Violence Prevention Program at the department. This program has made state and local injury data and technical assistance available to constituents. The information allows the Emergency Medical and Trauma Services Section to assist members of the emergency medical and trauma communities in planning injury prevention projects tailored to local needs. In

addition, a number of the facilities reviewed by the trauma program in the past year are now using their trauma registry data to assist in selecting priorities for new prevention programs.

The Colorado Emergency Medical Services for Children program, funded by a federal Maternal and Child Health Bureau grant, has collaborated with the injury and violence prevention program to provide limited and targeted resources and information to communities regarding pediatric emergencies. In addition, the staff has worked with the injury and violence prevention program to improve data collection efforts on injuries to children.

#### Current Activities:

- The department recently submitted a semi-annual performance review report to the National Resource Center for the Emergency Medical Services for Children Program. The report outlines the progress toward putting additional emphasis on programs for children and pediatric emergency care in Colorado.
- As part of its strategic plan, the pediatric emergency care committee, within the State Emergency Medical and Trauma Services Advisory Council, is pursuing continuing education requirements for EMTs and paramedics that would specifically call for pediatric-related courses. The Emergency Medical Services for Children program contracted with The Children's Hospital to conduct a Pediatric Education for Prehospital Professionals (PEPP) course in two rural communities, Craig and Durango, in June 2007.
- Injury prevention activities are receiving greater attention from some designated trauma centers as trauma nurses are increasing collaborative efforts with organizations in their communities.

#### Opportunities:

- Funding sources (both state and federal) are restricted to very specific types of injury prevention; for example, increasing booster seat use. Few, if any, resources are available for communities to implement strategies designed to address the priority needs as identified through local data, such as falls in the elderly population or adult seat belt use.
- Volunteers or staff with little injury prevention expertise often carry out injury prevention projects. There are more opportunities for the Emergency Medical and Trauma Services Section to provide additional technical assistance to these efforts than can be addressed with current resources.

### Communication Systems

Public access in the emergency medical services setting is defined as the ability of an individual to secure prompt and appropriate emergency medical care. For nearly 30 years, 911 has been designated as the national emergency telephone number. The single most important piece of information provided during an emergency call is the location of the person(s) requiring help. At 911 communication centers, the caller's telephone number and



location are provided automatically. Such systems are called enhanced 911 or E911. Initially, E911 was available to telephone line phones.

In 1996, the Federal Communications Commission acted to improve the E911 service available to cellular telephone users. Wireless E911 is being implemented in two phases. Phase 1 provides a call back number and the location of the cellular tower that received the call to a Public Safety Answering Point. Phase 2 requires that callers' latitude and longitude information be provided to the Public Safety Answering Point and, depending upon the technology used, the location accuracy is within 50 meters to 300 meters of the cellular phone location.

All counties in the state have E911 telephone line services. As of February 2008, 18 counties were E911 wireless Phase 1 compliant, and 42 were E911 wireless Phase 2 compliant.

In addition to regular telephone lines and cellular phones, a third technology has begun being used to place telephone calls. This technology, known as Voice over Internet Protocol, uses a broadband Internet connection to transport telephone calls. A May 2005, Federal Communications Commission order directs interconnected Voice over Internet Protocol providers to supply E911 services to their customers.

A reliable communications system is an essential component of the overall emergency medical and trauma services system in a catastrophic event. Recent experiences, such as the World Trade Center and the London attacks, highlight the fact that regular telephone lines and cellular phone services are vulnerable to traffic overload. These public access systems may not be available for emergency medical services use during an emergency. A radio based communications system that has reliable access and provides interoperability between responding agencies is a necessity for a robust emergency medical services communications system.

The existing Colorado Digital Trunked Radio system provides statewide, two-way communications to state government, local government and a limited number of federal government agencies over a shared communications platform. The Digital Trunked Radio system is based on Association of Public-Safety Communications Officials Project 25 standards. A standards-based system is ranked as the optimum level on the Homeland Security Interoperability Continuum. Standards basing has resulted in multiple manufacturers being able to build equipment for use on the Digital Trunked Radio system and other Association of Public-Safety Communications Officials 25 systems.

The Digital Trunked Radio system consists of over 164 tower sites throughout the state that are spread across three zones. The zones are networked to form the system. Radio traffic is able to pass between the zones. This allows a radio user to communicate to another user across Colorado. Appendix G, Digital Trunked Radio Project, outlines predicted radio coverage throughout the state.

A 2005 Department of Local Affairs Wireless Interoperability Network grant made approximately \$30 million available to continue the Digital Trunked Radio system

infrastructure build out. Additional funding will be provided in 2008 by the Public Safety Interoperable Communications (PSIC) grant program. There are 14 additional Digital Trunked Radio tower sites currently scheduled to be built. The majority of the tower sites will be constructed in the western and southwestern areas of the state. Future plans include adding a fourth zone controller, and perhaps a fifth zone controller, to increase the system's capacity.

The EMS Provider Grants Program has helped to improve and expand EMS communications throughout the state. Funding has provided equipment to agencies so that they can utilize the DTR system and keep many existing legacy systems operational. The department, the State Emergency Medical and Trauma Services Advisory Council and the liaison from the Governor's Office of Information Technology, continue to provide technical assistance and financial resources to local communities in improving radio communications.

#### Current Activities:

- The Digital Trunked Radio system has zone controllers located in the Denver metropolitan area, north central and western Colorado. The feasibility of adding zone controllers 4 and 5 is being evaluated.
- A Wireless Interoperability Network grant is underway and is expected to continue into 2009. Funding will be provided in 2008 by the Public Safety Interoperable Communications (PSIC) grant program for Digital Trunked Radio System infrastructure expansion.
- The Emergency Medical and Trauma Services Section, through its liaison representative from the Governor's Office of Information Technology, works with emergency medical and trauma service agencies throughout the state to provide technical assistance and guidance to agencies and hospitals with regard to implementation of the Digital Trunked Radio system.

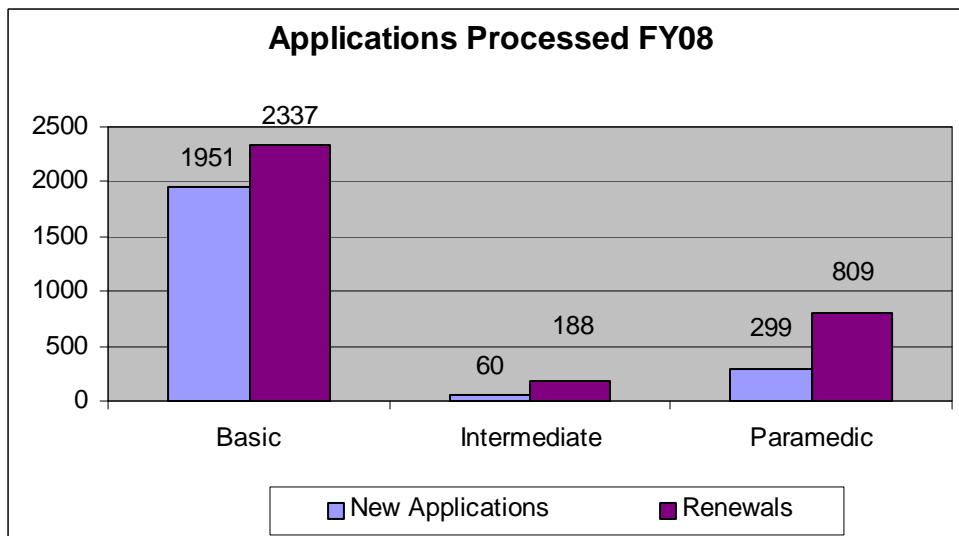
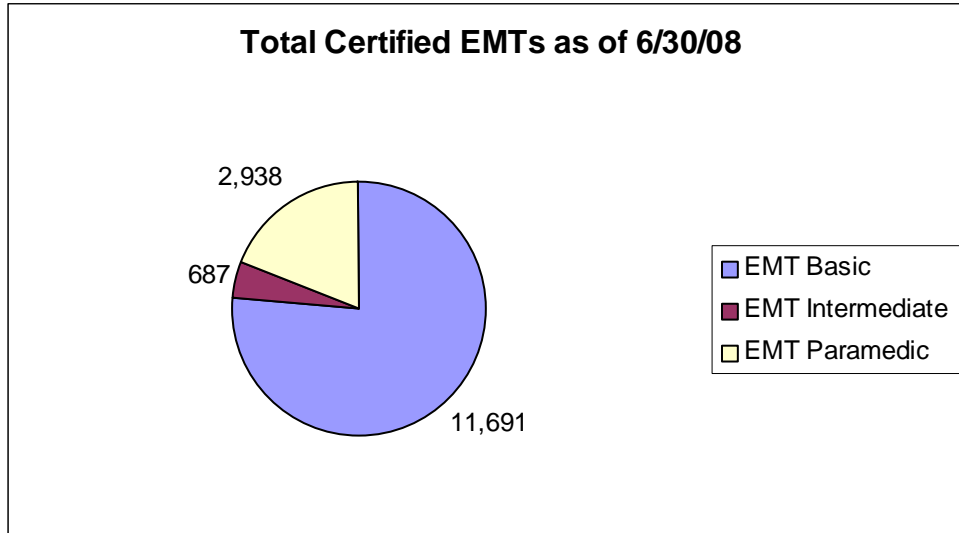
#### Opportunities:

- The current utilization of cell phones, whereby ambulance services communicate directly with hospitals, is a point of vulnerability in the response system.
- There is ongoing discussion about whether to require every Level I – Level V designated trauma center to have installed, at a minimum, one Digital Trunked Radio system radio to be used for transport communications and interoperability during large-scale emergencies.

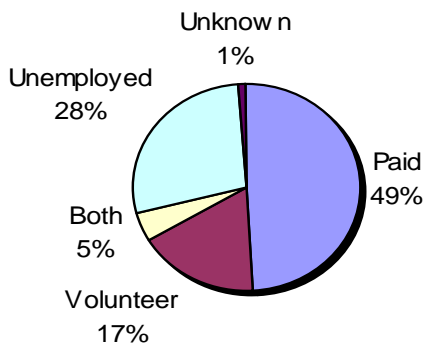
### Training and Certification of Emergency Medical Technicians

The department is the state agency responsible for the certification of emergency medical technicians (EMT) in Colorado. The department processes approximately 5,500 applications for certification or certification renewal each year for the three practice levels of EMT: EMT-Basic, EMT-Intermediate and EMT-Paramedic. The department's certification responsibilities include processing applications, developing standards and education requirements for initial certification and certification renewal, investigation of regulatory violations by EMTs, the imposition of disciplinary sanctions, litigation of appeals and

certification determinations resulting from criminal background record checks. The graphs below provide information as to the number of EMTs certified at each level as of June 30, 2008, the number of applications received by the department last year and information on volunteer versus career EMTs.



#### EMTs BY SERVICE AFFILIATION



In addition to EMT certification, the department is responsible for the oversight of 110 educational programs that provide education for EMTs. The department provides technical assistance to the education programs and supports instructor training programs and curricula approved by the State Emergency Medical and Trauma Services Advisory Council and the Colorado Board of Medical Examiners. In the last fiscal year, a State Emergency Medical and Trauma Services Advisory Council subcommittee completed drafts of revised recognition standards for Colorado education program providers. These revised standards, based on the standards established by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), will provide the framework and guidelines for programs providing initial and continuing education at all EMT levels. The standards were approved by the State Emergency Medical and Trauma Services Advisory Council in January 2008.

A project completed during this past fiscal year was the creation of an on-line system to verify the status of an EMT's certification. This automated system is free of charge and simple to use. Employers and EMTs have embraced this service, and it receives an average of 6000 hits each month. Not surprisingly, the use of this on-line system has resulted in a decrease in the number of applicant calls received by the section's certification staff.

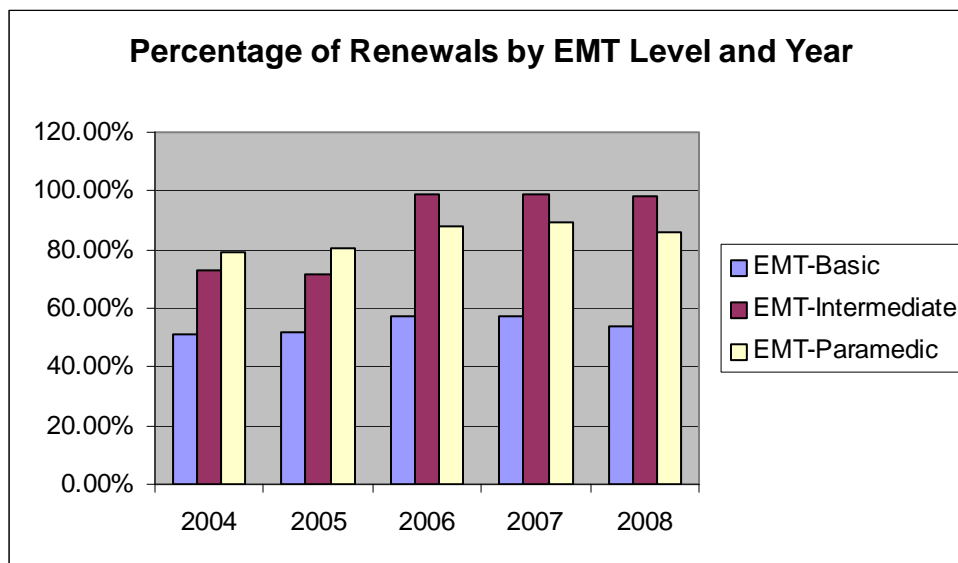
Another project started this past fiscal year was the initial preparation for implementation of the National Emergency Medical Services Scope of Practice Model as published by the National Highway Traffic Safety Administration's (NHTSA) Office of Emergency Medical Services in February 2007. The National Emergency Medical Services Scope of Practice Model calls for the reconfiguration of EMS provider levels in the United States and is based on the National EMS Core Content document published in 2005. While the model describes the provider levels and general scope of practice for each level, states are responsible to accept and adopt scope of practice regulations within their existing regulatory structures. In addition, soon-to-be released national EMS education standards will reflect the levels described in the national model and will drive future textbook and course content. A task force of the State Emergency Medical and Trauma Services Advisory Council was formed to provide recommendations to the department, with subcommittee members representing a

broad cross section of EMTS system stakeholders. At the beginning of the current fiscal year, the subcommittee published its final report and presented its recommendations to the State Emergency Medical and Trauma Services Advisory Council, including recommending that Colorado adopt the national model and its correlated parts. Over the next three years, the department will be developing standards, conducting extensive rule-making and instituting new processes to implement these changes.

The department commenced another project by convening a task force to provide recommendations on revising the rules pertaining to the implementation of cardiopulmonary resuscitation by emergency medical service personnel. The determination to update the rules results from difficulties the public is experiencing in attempting to obtain and execute a CPR Directive, as well as some of the issues experienced by EMS personnel when responding to calls involving a CPR Directive. The CPR Directive Task Force consists of EMS providers, members of the Colorado Advanced Directive Consortium, State Emergency Medical and Trauma Services Advisory Council members, Regional Emergency Medical and Trauma Advisory Council members, and representatives from the department. The specific goal of the CPR Directive Task Force is to develop draft amendments to the existing CPR Directive rules that will then be reviewed by various stakeholders and ultimately considered for promulgation by the Colorado Board of Health.

Emergency medical care involves the delivery of care by non-physician providers outside the traditional setting of a hospital or physician's office. In Colorado, every EMT who is providing patient care services is required to be supervised by a medical director who provides direction for the delivery of care. The department routinely coordinates with the physician licensing board, the Colorado Board of Medical Examiners, in the review and approval of medical director applications; and the department provides training for physicians in the supervision of emergency medical services personnel. The emergency medical and trauma services medical director position was created in 1990. The Medical Direction Committee, a group established in 2007 to provide additional physician input to the department and the Colorado Board of Medical Examiners, has proven to be well-designed and valuable. The Committee provides valuable input to the department on scope of practice issues, reviews and makes recommendations to the Board of Medical Examiners on whether or not to approve requests for waivers for EMTs to practice outside the scope set forth in rule, and works to ensure that scope of practice rules are appropriately synchronized with current practices and procedures in prehospital care. One of the most significant roles of this group is to maintain a close working relationship with the Board of Medical Examiners and improve interagency communications and coordination.

The State Emergency Medical and Trauma Services Advisory Council and the department dedicate one of the categories in the Provider Grants Program for recruitment and retention. This is designed to assist local emergency medical service agencies in assessing current workforce needs and in establishing a plan for creation of a stable workforce. The ability to train, to retain and to provide continuing education to rural and frontier services continues to be the primary focus of the recruitment and retention category in the grants program. The graph below provides information on the number of certified EMTs who renew their certifications for each of the levels over the past five years.



#### Current Activities:

- Staff will continue to work with stakeholders, including the State Emergency Medical and Trauma Services Advisory Council subcommittee established to provide recommendations to the department, on implementation of the changes at the national level to the education curricula and certification process.
- The departmental task force on revising CPR directives continues its work to provide recommendations on revising the rules pertaining to the implementation of cardiopulmonary resuscitation by emergency medical service personnel.
- The department and the State Emergency Medical and Trauma Services Advisory Council Education Subcommittee continue to work on preparing supporting documents and policies to assist training centers and groups in meeting the revised Colorado education program recognition standards approved by the State Emergency Medical and Trauma Services Advisory Council this past year.
- The practice instituted this year of conducting a series of Colorado Board of Medical Examiners Rule 500 stakeholder meetings to seek input on possible changes or updates to the rule will continue. On an annual basis, proposed changes will be forwarded to the Board of Medical Examiners for discussion and possible adoption.
- The department partners with stakeholders to present courses designed to train emergency medical services educators. Members of the emergency medical and trauma services staff actively participate in these courses to ensure continuity in instructor education.
- The department continues timely and accurate handling of complaints regarding EMTs, including coordination with the Colorado Office of the Attorney General, and disposition of cases in a manner that is focused on the protection of patients and service to stakeholders.

#### Opportunities:

- The department will need to facilitate stakeholder discussions and develop processes for implementation of the upcoming changes to the national education curricula and scope of practice for EMTs.
- Staff will continue to work to develop and implement effective rules for the implementation of CPR directives by EMS personnel and set up mechanisms to bring training on the new rules to all health care providers.
- Find ways to alleviate the shortage of qualified and interested physicians, nurses and EMTs in urban, rural and frontier communities. Opportunities exist to expand efforts to develop strategies that will strengthen recruitment and retention programs to address local workforce needs.
- Although the Emergency Medical and Trauma Services Section has effective investigative and disciplinary processes relating to its statutory mandate of reviewing criminal history background initial and subsequent reports received from the Colorado Bureau of Investigation on EMT applicants and certified EMTs, the significant time requirements for these activities remain a concern.
- While initial training costs have been covered by various grants, the maintenance costs associated with preparedness training are expected to be an ongoing challenge.

#### Transportation Systems, Including Air and Ground Ambulance Licensure Standards

Safe, reliable ambulance transportation is a critical component of an effective emergency medical and trauma services system. This includes the regulation, inspection and licensure of ambulance services and vehicles; provision for uniform coverage 24 hours a day; a protocol for air medical dispatch; and a mutual aid plan. The primary objective of the transportation component is to provide a minimum level of emergency medical and trauma care to all residents and visitors.

Authority for the regulation, inspection and licensure of ground ambulances lies with each respective Colorado county or joint city and county. The department provides technical assistance to the counties in applying state regulations to the local licensure of ambulance services. Statute establishes minimum requirements for ambulance attendants such as driver's licensure and certification. For the trauma patient, specific minimum standards have been adopted for ambulance and first response unit staffing, agency response and scene times and patient triage and transport destination protocols.

The Emergency Medical and Trauma Services Section is working with Colorado Counties, Inc. to survey all counties and determine their level of activity with regard to ambulance licensing. The Colorado Emergency Medical and Trauma Services Act gives the department authority to promulgate rules for minimum standards to be used by counties in their local ambulance licensing process. The Board of Health promulgated these rules in 2005 with implementation required by counties within two years thereafter. The review of the current status of ambulance licensing by counties will be completed during 2009.

The *Colorado Emergency Medical and Trauma Services Act of 2000* created authority for the department to develop minimum license standards for air ambulances in Colorado. Statutory amendments in 2005 amended this authority to include mandatory national accreditation as the basis for air ambulance licensing. The licensing process was started in February 2006. Colorado Board of Health rules were promulgated in March 2008 to implement 2007 statutory amendments clarifying that the department may issue conditional licenses for those applicants who have not achieved national accreditation at the time of application and allowing for the department to authorize a transport by an unlicensed service for exigent circumstances.

#### Current Activities:

- The department has licensed 17 fixed- and rotor-wing air ambulance services in Colorado. Nine of these services are based in Colorado. Among them, five of the services are both rotor- and fixed-wing capable.
- An information audit of county activity regarding the local adoption of standards was initiated in 2008. This survey will result in the identification of best practices and serve as a basis from which the Emergency Medical and Trauma Services Section can provide technical assistance to local entities.
- The department, in conjunction with the Mile-High RETAC, hosted an EMS Safety Summit, focusing primarily on ground ambulance safety issues.
- Section staff will continue working to complete a review of all Colorado county ambulance licensing processes for informational purposes only.

#### Opportunities:

- No entity is identified in statute as being responsible for ensuring the provision of emergency medical transportation services (ground ambulance services) to the citizens of, or visitors to, the state of Colorado. Some geographic areas of the state are technically “uncovered,” creating financial as well as response challenges to nearby provider agencies.
- Efforts to improve operational safety standards throughout the prehospital care industry have been identified as a priority by the State Emergency Medical and Trauma Services Advisory Council and the Department. Improved safety designs of ambulances, increased driver safety training programs, and the increased use of driver surveillance systems are strategies that have a positive impact in the reduction of ambulance crashes. Additional resources to support the implementation of these programs in all Colorado ambulance services should be identified.

### Trauma Center Designation for Acute Care Hospitals and Clinics

The purpose of a trauma system is to get the right person to the right facility at the right time. The trauma designation program works with facilities, large and small, across the state to improve their capacity to identify and care for trauma patients. Beginning with extensive technical assistance and mentoring offered to facilities and ending with the regulatory function of trauma designation, the program seeks to assure that trauma care standards are met in each facility. From the facility perspective, designation of hospitals and clinics as



trauma centers identifies those facilities that have made a commitment to maintain a level of trauma care resources, including trained staff, equipment and policies and procedures.

In Colorado, health care facilities receiving trauma patients by ambulance or other means must participate in the trauma system by agreeing to follow rules regarding the care of those patients. Facilities may choose to be "non-designated" and thus agree not to keep any trauma patients with complex injuries. Facilities that agree to care for trauma patients receive site reviews and are designated by the state as Level I (highest) through Level V trauma centers. As of June 30, 2008, there were 68 designated trauma centers in Colorado with the majority of acute care general hospitals and critical access hospitals participating. See Appendices H and I for a listing and map of trauma centers in Colorado.

Since the last report, one facility dropped from the trauma system. Prowers Medical Center has had a variety of difficulties resulting in the choice not to maintain trauma designation. State staff and Prowers staff remain hopeful that this will be temporary. This facility has seen practical application for its trauma training during the Holly tornado and in several very severe motor vehicle crashes. The department will continue to work closely with Prowers Medical Center staff to assist them in their efforts to return to the Colorado trauma system.

#### Current Activities:

- Staff-led teams of physicians and nurses reviewed the care provided by 30 facilities in the past year.
- Staff provided technical assistance to virtually every designated facility in the state during the past year.
- Current plans include 33 trauma designation site reviews during FY09 plus additional technical assistance visits.
- One rule-writing project, the complete revision of the trauma designation standards for Level I and II facilities, has been completed. The rules were heard by the Board of Health in October 2008 and, when adopted, will be in effect late 2008.

#### Opportunities:

- Additional resources would allow completion of the data linkages necessary between the Trauma Registry and the prehospital data collection system. This linkage would greatly enhance the system's capability to more accurately assess the effectiveness of Colorado's trauma and prehospital care system and make more informed policy decisions regarding changes and improvements to the overall emergency medical and trauma services system.
- The program needs additional resources to provide technical assistance and training to small facilities to assist in understanding, planning and implementing effective quality improvement programs. Technical assistance would most likely result in fewer issues during the facility review process and fewer re-reviews conducted by the department.
- The grant-funded trauma system review will provide an opportunity for technical assistance from national experts who review the current system and make suggestions for improvements.

## Rehabilitative Care

Adequate rehabilitative care is critical to the goal that each trauma patient returns to a productive life. Most trauma facilities in Colorado can offer at least limited inpatient rehabilitative services. Early physical, occupational and speech therapy services result in more favorable functional outcomes. In larger trauma centers, such services often begin when a patient is in the intensive care unit and continue into the outpatient setting. More specialized services for head and spinal cord rehabilitation are offered by several well-respected inpatient facilities. However, not all Coloradans have access to the full spectrum of services. Many are uninsured or have insurance that limits the scope of rehabilitative services that can be accessed.

### Current Activities:

- The trauma rules require that trauma centers provide rehabilitative services for trauma patients and maintain transfer agreements for rehabilitation services that they do not provide. These agreements are produced for inspection at trauma site reviews. In addition, patient charts are reviewed during trauma designation surveys, and experienced clinicians check to see that appropriate rehabilitative care is carried out in the inpatient setting and that further care is recommended upon discharge.
- Many rural facilities are finding that as they expand rehabilitative services, more patients can be returned to the community for those services.

### Opportunities:

- The lack of resources to support access to rehabilitation services continues to hinder patients in some areas.
- There is little information available about functional outcomes for trauma patients.

## Disaster Medical Care

Regional coordination of the medical care component of local disaster plans helps ensure the effective utilization of resources to meet patients' needs in the event of a multi-casualty or bio-medical disaster. Coordination of these resources is specifically defined in statute as the responsibility of the counties. The State Emergency Medical and Trauma Services Advisory Council has assisted the department in the development of a Multi-Casualty Annex to the All Hazards State Emergency Operations Plan. The Regional Emergency Medical and Trauma Advisory Councils will continue to work toward coordinating the medical components of these local plans and will assist in creating them where needed, for both multi-casualty and bioterrorism response. Specific efforts have been made over the past year to formalize and increase participation and communication among the Regional Emergency Medical and Trauma Advisory Councils and Colorado's All Hazards regions. The close coordination between emergency managers and the emergency medical and trauma services system is vital to the success of these efforts. Regional planning will mitigate the impact of the lack of centralized and coordinated communication systems and community responses to either of these types of events.

Homeland Security Presidential Directive 5 requires federal departments and agencies to make adoption of the National Incident Management System by state and local organizations a condition for federal preparedness assistance through grants, contracts, and other activities beginning in FY05. To help meet this need, the United States Fire Administration and the National Highway Traffic Safety Administration provided assistance to the Emergency Medical and Trauma Services Section for two staff members to become certified as National Incident Management System trainers. All members of the Emergency Medical and Trauma Services Section have completed their required levels of National Incident Management System certification. The Emergency Medical and Trauma Services Section and the Colorado Division of Fire Safety collaborate on providing National Incident Management System programs throughout Colorado.

#### Current Activities:

- Regional Emergency Medical and Trauma Advisory Councils are coordinating with the State All Hazards Advisory Committee and local and federal agencies on a regular basis to generate regional emergency management plans that include the medical component in the event of an All Hazards response.
- The department continues to work with the State Emergency Medical and Trauma Services Advisory Council's Mass Casualty Incident plan to ensure ongoing consistency with the State Emergency Operations Plan.
- Section has certified National Incident Management System trainers available for requested training programs, and all staff have achieved the required levels of NIMS certification as identified by department policy.
- Staff participates in State All Hazards Advisory Committee.
- Regional Emergency Medical and Trauma Advisory Councils are providing emergency medical services transport information for inclusion in the Resource Ordering and Status System database for the state.
- Development and maintenance of the medical annex or medical response for the State Emergency Operations Plan continues as appropriate.

#### Opportunities:

- Medical responses throughout the state to either a multi-casualty or bioterrorism event must continue to be coordinated at the local, regional and state levels.

#### Education and Research

Education and research in emergency medical and trauma clinical care are important components of a trauma system; however, these activities do not ensure the ongoing identification of improvements to emergency medical and trauma patient care as well as information dissemination in the training of emergency medical and trauma care clinicians. In Colorado, trauma education and research are requirements of the Level I and Regional Pediatric Trauma Centers.

#### Current Activities:

- Education in trauma clinical care is provided by many of the larger trauma centers across the state and is offered, often at no cost, to many of the more remote trauma centers.
- Research in trauma clinical care is required of and carried out by each of the Level I trauma centers and the regional pediatric trauma center.
- Funding from the Emergency Medical and Trauma Services Section's personal services funds supported both the 2007 and 2008 conferences. However, these funds are no longer available to support this important effort. Consequently, in order to ensure that important information regarding the education of EMTs at all levels continues, \$15,000 from the statewide funding has been approved by the State Emergency Medical and Trauma Services Advisory Council. This is the only statewide continuing education offering targeted to address the needs of EMS educators.
- The Emergency Medical and Trauma Services Section, along with various education programs and agencies throughout the state, sponsored numerous instructor development courses and continues to expand outreach activities.
- The Emergency Medical and Trauma Services Section maintains an ongoing communication process among the state's trauma centers, academic institutions and other sources of research to provide a conduit of information to all components of the emergency medical and trauma services system, as new research develops improved techniques in trauma care.
- The Emergency Medical and Trauma Services Section provides technical assistance and support to educational institutions and organizations throughout Colorado. These activities include the support of a statewide EMS education conference, providing technical materials to educational programs and other appropriate activities to ensure the dispersal of educational information.

#### Opportunities:

- Staff members at rural trauma centers often do not know about educational offerings or are unable to participate due to time constraints.

### Trauma Registry and EMS Data Collection

To effectively plan, implement and monitor a statewide emergency medical and trauma care system, a comprehensive evaluation program is essential. Critical components include standardized data systems (the Colorado Trauma Registry and the EMS Ambulance Trip Report Information Exchange), as well as appropriate resources and staff for efficient data management, analysis and use of the data to evaluate the delivery of patient care.

The Colorado Trauma Registry is a unique database designed to capture information on the care of trauma patients and on the leading causes of injury hospitalizations and deaths. The data in the Colorado Trauma Registry are used not only to evaluate the effectiveness of the trauma system but also to identify and monitor the impact of injury prevention strategies. Each licensed facility, clinic or prehospital transport agency that provides services or care to

a trauma patient is required to submit a limited set of patient-specific information to the department. These data, combined with the Colorado Hospital Association's inpatient discharge dataset and the department's Health Statistics Vital Records Section's death certificate files, are used to evaluate and monitor the emergency medical and trauma care system's response to trauma patients and their needs. The Colorado Trauma Registry has been in existence since July 1997 and currently contains more than 225,000 records.

Collection and analysis of information from prehospital transport agencies allows evaluation of care provided prior to arrival at the hospital for both trauma and non-trauma patients. For trauma patients, when prehospital data are combined with data from the in-hospital component, the Colorado Trauma Registry, an overall picture of the continuum of patient care is possible. Over the past several years, the department has successfully collaborated with transport agencies to collect prehospital data at the local level. The EMS Ambulance Trip Report Information Exchange, known as MATRIX, developed by the Health Facilities and Emergency Medical Services Division at the department, is the statewide database that contains patient-level information on prehospital care.

Local ambulance agencies submit their data to the state database in one of three ways: 1) via a free Web-based data entry system that was developed by staff in the Emergency Medical and Trauma Services Section; 2) via a free PC-based data entry software, also developed by Section staff; and 3) via download of XML files in a specified format from third party vendor software. Agencies are required to collect the National Elements subset of the National Emergency Medical Services Information System dataset (see <http://www.nemsis.org/>), the national data standards for prehospital data collection developed by the National Highway Traffic Safety Administration (NHTSA). Approximately two-thirds of the prehospital transport agencies in Colorado routinely download data to the state database. Since January 2006, prehospital agencies submitted reports on more than 450,000 patient care transports. The majority of these transports (80%) involve non-trauma patients.

#### Current Activities – Trauma Registry:

- Staff updated the trauma registry variables and registrar's manual to bring the registry into alignment with the National Trauma Data Standards (<http://www.ntdsdictionary.org/>) developed by the American College of Surgeons.
- In conjunction with trauma coordinators from Level I-III facilities, the staff worked to create standardized quarterly volume reports for each trauma facility and posted them to the web.
- Ten years of the Colorado Trauma Registry data was used to develop a logistic regression model to predict the probability of survival for trauma patients in Colorado using state-specific norms.

#### Current Activities – EMS Data Collection:

- The stakeholders worked with section staff to draft the rules that describe the requirements that agencies must follow to submit data on prehospital transports to the state health department. The Colorado Board of Health promulgated these rules in May 2008.

- Additional prehospital transport agencies routinely submit data to the state database. Currently, approximately two-thirds of the agencies routinely submit information on patient transports.
- Several resources were used to provide technical assistance to agencies on data collection and export of data to the state database.
- The department collaborated with the Colorado Department of Transportation by participating in the development of a virtual data warehouse of related to traffic crashes. In conjunction with the Governor's Office of Information Technology, data from several state agencies including the Department of Revenue, Department of Transportation, Colorado State Patrol, the Department of Public Health and Environment, the Department of Human Services and Judicial will be integrated to create a comprehensive picture of traffic crashes in Colorado. The integrated system will be used to develop effective prevention and intervention strategies to reduce traffic crashes in Colorado and to improve the prehospital care of individuals injured in a motor vehicle crash.
- The 2<sup>nd</sup> annual EMS Data Conference in May 2008 provided information to local EMS providers on the collection and use of prehospital data.
- The on-line MATRIX system was updated to increase the number of variables collected and to provide agencies with different options for printing a patient care report from the data entered.
- Section staff worked with the state EMS program in Arizona to adapt the Colorado on-line MATRIX system for use in Arizona.
- Staff prepared data quality reports to send to trauma facilities and to Regional Emergency Medical and Trauma Advisory Committee (RETAC) coordinators. The reports monitor the quality and completeness of the prehospital data submitted by each agency.
- Colorado's prehospital patient care times, both statewide and by urbanicity were evaluated and compared to results from the national prehospital database.
- Staff used the MATRIX data set to identify the leading causes for prehospital care and transport of both adult and pediatric patients. In addition, the report identified the leading reasons for the use of lights and sirens, by ambulances, both to and from the scene.
- The database also provided information on the types of procedures performed by EMT-Intermediates, for decision-making about the scope of practice for this group of prehospital care providers.

#### Opportunities:

- There is a need for additional resources to continue to improve data linkage, data cleaning, the development of standardized reports and general data base management.
- There remain a number of prehospital transport agencies that do not currently submit data to the state database. Many agency needs are unique and some agencies, particularly small volunteer services, do not have local resources to participate. The need for technical assistance for these rural and frontier agencies is important to ensure that the information available to policy makers is accurate and comprehensive.

## State and Regional Continuing Quality Improvement (CQI) Systems

A comprehensive evaluation program is essential to effectively monitor and improve the delivery of emergency medical and trauma care. To provide the best assessment possible, evaluation activities must occur at several levels. While each facility and transport agency is responsible for quality improvement efforts at its own institution, the department has been given the responsibility of monitoring the quality of care both regionally and statewide.

Quality improvement is a daily activity at the 68 trauma centers and 189 transport agencies across the state. As outlined in rule, each trauma center is required to have a relatively extensive process in place to monitor the quality of trauma care. Likewise, EMS agencies are guided by state rules regarding ambulance licensure, availability of equipment, and training requirements and certification of prehospital care providers.

For several reasons, system evaluation at the state and regional levels remains at a developmental stage. Until recently, comprehensive statewide data collection systems, particularly for prehospital care, were not available. Although significant improvements have been made in statewide prehospital and trauma data collection, there is a need for further maturation and refinements to the systems, including data integration and improvements in data quality. Data collected under the continuous quality improvement (CQI) process, as described in statute, are considered confidential. However, issues concerning discoverability and protection outside of state government present concerns to system stakeholders, sometimes results in reluctance to participate in the CQI process. Additionally, limited resources and competing priorities influence the progress made in developing state and regional CQI processes.

### Current Activities:

- Data from the EMS Ambulance Trip Reporting Information Exchange (MATRIX) and the Colorado Trauma Registry have been used to identify important strengths and weaknesses in the emergency medical and trauma system.
- A grant application to the Colorado Trust has resulted in funding for a consultative visit and evaluation of the state trauma system by representatives from the American College of Surgeons. The site visit will occur in the spring of 2009.

### Opportunities:

- Opportunities must be provided for involvement of both prehospital and acute care stakeholders in the development of the state and regional continuing quality improvement plan.
- Additional information is needed to answer many of the questions regarding system-wide quality improvement. Limited resources are available to develop, implement and evaluate system quality improvement activities.
- The issue of discoverability continues to present a challenge to honest and open discussion.

## Planning by the State Emergency Medical and Trauma Services Advisory Council and the Regional Emergency Medical and Trauma Advisory Councils

Planning and coordination in development of the state system is accomplished with advice from the State Emergency Medical and Trauma Services Advisory Council.

Due to variations in the demographics and geography of Colorado, local participation and expertise for identifying problems and designing solutions for local area plans are required. The passage of the *Colorado Emergency Medical and Trauma Services System Act of 2000* created the Regional Emergency Medical and Trauma Advisory Councils, established requirements for regional planning and provided a minimum level of funding beginning in FY02. Eleven Regional Emergency Medical and Trauma Advisory Councils were created across the state by county governments in 2001 to ensure local participation and coordination in regional system planning.

As these regionalized systems have matured, there have been significant improvements in the collective coordination of activities. Progress has also been made in improving communications between the local regional councils, the state council and the department. These efforts have resulted in several operational policy changes aimed at keeping stakeholders better informed of various activities throughout Colorado, as well as keying in on areas of need throughout this diverse system of health care delivery.

### Current Activities:

- The State Emergency Medical and Trauma Services Advisory Council has developed, initiated and recently completed a comprehensive strategic planning process. With input from emergency medical service agencies, fire departments, trauma centers and Regional Emergency Medical and Trauma Advisory Councils, broad goals were identified, directions set and the Council's committee structure reorganized.
- With input from each of the eleven Regional Emergency Medical and Trauma Advisory Councils, the Statewide (Regional) Needs Assessment Project has been initiated. A contractor for implementation has been identified and special projects funding has been dedicated to this project. As described elsewhere in this document, the goal of this project is to ensure that data gathered from each of the eleven regions is consistent and can be used to not only assess capabilities at the local and regional level, but in aggregate, provide significant direction to various statewide efforts. Although this project will require three years to complete, when it is finished, it will become the basis of information necessary to guide the Colorado emergency medical and trauma services system for many years to come.

### Opportunities:

- It will be important to continue to refine/solidify regional councils' identity and improve communication among key elements of the emergency medical and trauma services system (regional councils, state council, Emergency Medical and Trauma Services Section, county commissioners and constituents).



- Staff will need to provide additional technical assistance to aid regional council coordinators in operationalizing and accomplishing tasks to meet their goals.
- Another task for the future is identifying mechanisms that will allow more flexibility in resources available for Regional Emergency Medical and Trauma Advisory Councils development and activities.

## **Part III**

### **Challenges for Colorado's Emergency Medical and Trauma Services System**

#### **Emergency Medical Technician Education and Certification**

A significant upcoming challenge for the department is finishing the stakeholder process for implementation of the national educational standards and scope of practice and planning process changes for this implementation. Although these changes will most likely be minimal at the EMT-Basic and EMT-Paramedic levels of certification, the national standards for what we now call EMT-Intermediate will change. Each state is clearly entitled to make individual decisions regarding these issues. The impact of these changes in terms of reciprocity, national disaster response capabilities and standardized care throughout the United States must be taken into consideration. The department will work to provide leadership and structure to these discussions in Colorado and work to ensure that the integrity of the profession and the credentialing system are maintained. Rule-making by both the Board of Health and the Board of Medical Examiners will be required and effectively communicating all of the changes to the EMTS stakeholders will be critical.

The shortage of qualified and interested physicians, nurses and EMTs in urban, rural and frontier communities continues to be a challenge. Volunteerism is on the decline nationwide and in Colorado. Approximately 60 percent of Colorado's 189 licensed ambulance services are staffed primarily by volunteer emergency medical technicians that provide care in rural and frontier counties, and the problems they face with recruiting and retaining skilled workforce members are well-identified. Opportunities exist to expand efforts to develop strategies that will strengthen recruitment and retention programs to address local workforce needs.

#### **Resources**

The amount of revenue generated from the Emergency Medical Services Account continues to be of concern for the program in coming years. The program is operating within a very small margin, and a small shift in expenses or revenue can easily create an unexpected shortfall. Additionally, the continuing increase in costs for ambulances, medical equipment, education and overall operating expenses for local EMS agencies pressures the many rural and frontier ambulance services that depend on the grants program for major capital equipment. During the past year, at least one ambulance service that served rural Colorado was forced to cease service and sell its assets due to significant financial distress. This combination of economic pressure and static funding require that the department work with stakeholders to use the existing resources and efficiently as possible. The department and the State Emergency Medical and Trauma Services Advisory Council will continue to monitor the situation and be prepared to make adjustments as needed in the grants program, regional funding, certification, training and other program activities.

## Preparedness-Multi-Casualty Plans

Additionally, a potential threat to our state and nation requires ongoing coordination between state and local agencies in the development and maintenance of state and local multi-casualty plans, which make up the medical annex of a state or local emergency management plan. Enhancing the integration of cooperative activities between the emergency medical and trauma services system and Colorado's All Hazards regions is vital to the overall preparedness of Colorado.

## Data Collection

The ability to collect and analyze information regarding the effectiveness and efficiency of the Colorado emergency medical and trauma services system is vital to its continued improvement. Although significant progress has been achieved over the past two years in this program area, there remains much work to be done. This effort has historically been supported through federal grant funds, special project funds and existing departmental resources. To ensure that the success that has been achieved to date continues, it will be important to continue the resources necessary to maintain these information systems. Only through the development of timely and accurate information can appropriate decisions be made that will ensure that quality care and transportation is available to all residents and visitors throughout Colorado.

## Recruitment and Retention

The issue of recruiting and retaining qualified personnel to staff local emergency medical and trauma services systems continues to plague Colorado. Recruitment and retention has been identified as one of the most significant threats to the long-term stability of the prehospital care system by many national organizations and was highlighted by the Institute of Medicine report of 2006. Over the past two years, several ambulance services have been forced to reduce services by becoming "first response" or "quick response" services due to a lack of trained personnel to staff the agency needs. The causes of these problems are multifaceted and include an aging workforce, failing volunteerism, cultural and population changes as well as a host of other societal and economic issues. Mechanisms to more thoroughly understand the issues and develop appropriate interventions should be developed at the state, regional and local levels to ensure that existing agencies are able to continue their service to Colorado communities.

## **Appendices**

# State Emergency Medical And Trauma Services Advisory Council

**November 2008**

<b>Appointed Member</b>	<b>Representing</b>	<b>RETAC</b>
Michael Anaya	Administrative representative of a rural trauma center	Northeast Colorado
Scott Bourn, PhD(c), RN	Officer or employee of a public provider of prehospital care	Mile-High
Sean M. Caffrey	Representative of a government provider of prehospital care	Central Mountains
Brandon Chambers	Regional council chair	Southern Colorado
Ray Coniglio, RN	Trauma nurse coordinator	Mile-High
Chris Cribari, MD	Board certified surgeon providing trauma care at a Level II Trauma Center	Northeast Colorado
Eugene Eby, MD	Board certified emergency physician	Mile-High
Nancy Frizell, RN	Registered nurse involved in rural emergency medical and trauma services care	Northwest
John G. Hill	Administrative representative of an urban trauma center	Mile-High
Ray Jennings	County emergency manager	Central Mountains
Linda Joseph, RN	County commissioner, or council member, representing a rural county or city and county	Southern Colorado
Richard Kinser	Officer or employee of a private provider of prehospital care	Western
Kathleen Mayer, RN	Flight nurse of an emergency medical service air team or unit	Mile-High
John Nichols, MD, PhD	Board certified neurosurgeon involved in providing trauma care at a Level I or II Trauma Center	Mile-High
Daniel J. Noonan	Fire chief of a service that provides prehospital care in a rural area	Southwest
Lara Rappaport, MD	Board certified physician certified in pediatrics or a pediatric subspecialty	Mile-High
Larry Reeves	Officer or crew member of a volunteer organization who provides prehospital care	Southeastern Colorado
Kathay Rennels	County commissioner, or council member, representing an urban county or city and county	Northeast Colorado
William J. Rodman, MD	Board certified surgeon providing trauma care at a Level III Trauma Center	Central Mountains
David Ross, DO	Licensed physician who is a prehospital medical director	Plains to Peaks
Wade Smith, MD	Board certified surgeon providing trauma care at a Level I Trauma Center	Mile-High
Nancy Stuart	County commissioner, or council member, representing a rural county or city and county	Foothills
Michele Sweeney, MD	Member of the general public from an urban area	Southern
Ralph Vickrey, Jr.	Fire chief of a service that provides prehospital care in an urban area	Mile-High
Todd Wright	Member of the general public from a rural area	San Luis Valley

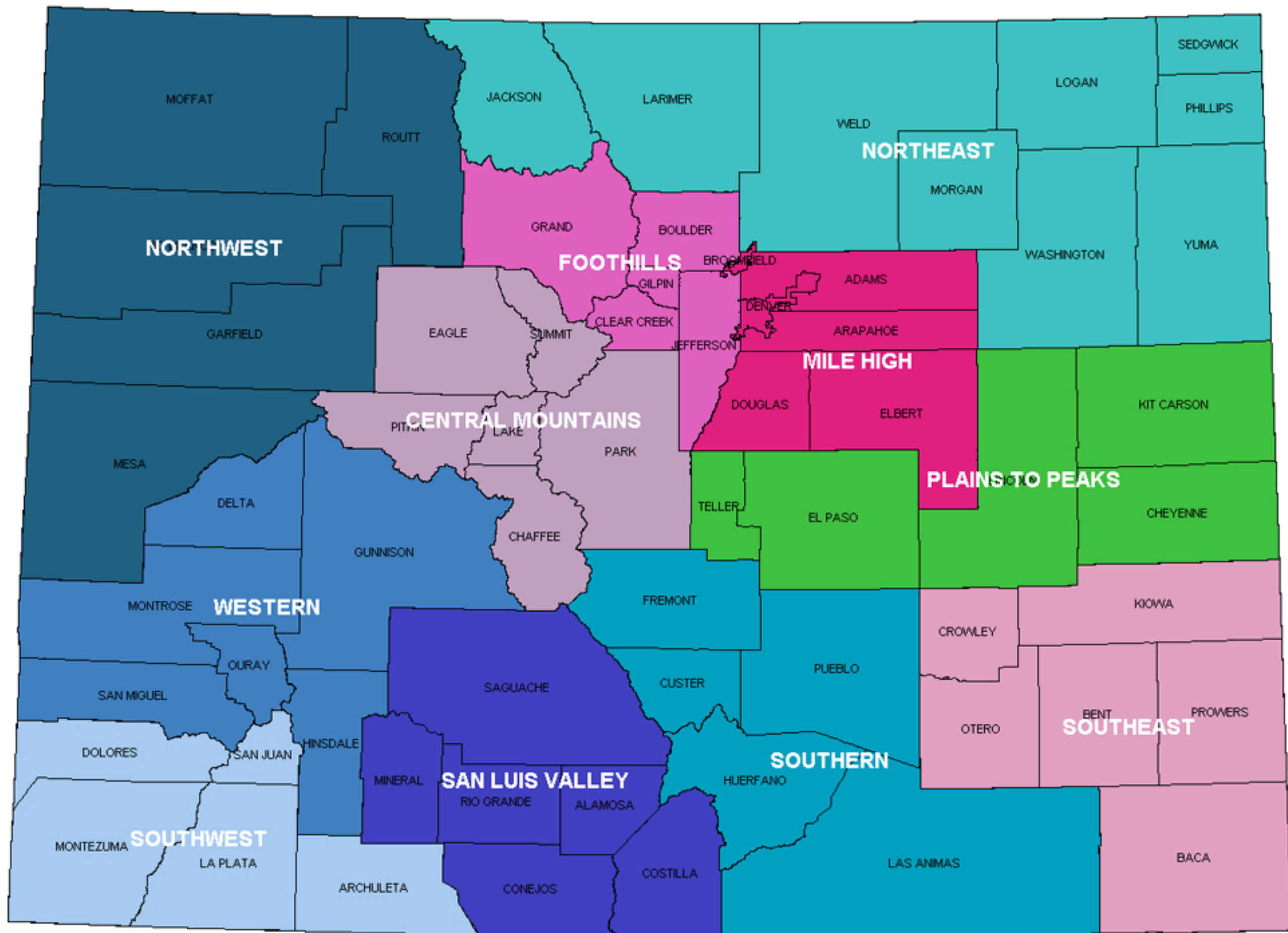
# **State Emergency Medical And Trauma Services Advisory Council**

**November 2008**

<b>Ex-officio Member</b>	<b>Representing</b>
Michael Carter	Director of the state board for community colleges and occupational education or the director's designee
Mike Nugent	Director of the office of transportation safety in the Department of Transportation or designee
Raymond Fisher	Representative of the Colorado State Patrol
Zane Laubhan	Member of the Colorado Coroners Association, as selected by the association
Don Krueger	Representative of the County Sheriffs of Colorado
D. Randy Kuykendall	Executive Director of the Department of Public Health and Environment or designee
Ron Lutz	Manager of telecommunication services of the Colorado information technology services in the Department of Personnel, General Support Services, or the manager's designee

# State of Colorado Regional Emergency Medical and Trauma Advisory Councils Map

## November 2008



# Colorado RETAC Chair Contact Directory

## November 2008

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### Central Mountains RETAC

J. David Zaitz  
St. Vincent General Hospital District  
822 West Fourth Street  
Leadville, CO 80461  
719-486-0230  
[dzaitz@svghd.org](mailto:dzaitz@svghd.org)

### Foothills RETAC

Sue Kirk, RN  
Avista Hospital Trauma Coordinator  
100 Health Park Drive  
Louisville, CO 80027  
303-673-1124  
[suekirk@centura.org](mailto:suekirk@centura.org)

### Mile-High RETAC

Charles Mains, MD  
St. Anthony's Central Hospital  
4231 W 16<sup>th</sup> Avenue  
Denver, CO 80204  
303-629-4222  
[charleswmains@centura.org](mailto:charleswmains@centura.org)

### Northeast Colorado RETAC

Dave Bressler  
Weld County Paramedic Services  
1121 M. Street  
Greeley, CO 80631  
970-353-5700  
[dbressler@co.weld.co.us](mailto:dbressler@co.weld.co.us)

### Northwest Colorado RETAC

Chairman, Kris Borchard  
Rio Blanco Fire District  
PO Box 737  
Meeker, CO 81641  
970-878-3443 Ext. 10  
[Kbochard@meekerrescue.com](mailto:Kbochard@meekerrescue.com)

### Plains to Peaks RETAC

Ted Foth  
Kit Carson County EMS  
257 15<sup>th</sup> Street  
Burlington, CO 80807  
719-346-7878  
[kccems@kitcarsoncounty.org](mailto:kccems@kitcarsoncounty.org)

### San Luis Valley RETAC

Jeff Babcock  
Homeland Security  
8900 Independence Way  
Alamosa, CO 81101  
719-480-1767  
[slv.hls@amigo.net](mailto:slv.hls@amigo.net)

### Southeastern Colorado RETAC

Larry Reeves  
Crowley County Ambulance  
611 E 3<sup>rd</sup> Street  
Ordway, CO 81063  
719-267-5230  
[larry@crowleycounty.net](mailto:larry@crowleycounty.net)

### Southern Colorado RETAC

Brandon Chambers  
Trinidad Ambulance District  
7022 County Road KK  
Manzanola, CO 81058  
719-846-6886 Ext. 130  
[bchambers@trinidadambulance.com](mailto:bchambers@trinidadambulance.com)

### Southwest RETAC

Dan Noonan, Chief  
Durango Fire and Rescue Authority  
142 Sheppard Drive  
Durango, CO 81303  
970-382-6005  
[noonandj@ci.durango.co.us](mailto:noonandj@ci.durango.co.us)

### Western RETAC

Rob Fiedler  
Delta County Emergency Preparedness  
PO Box 172  
Delta, CO 81416  
970-874-2004  
[fiedler@deltacounty.com](mailto:fiedler@deltacounty.com)



FY09 EMS Provider Grant Awards			
Agency Name	Category Name	State Amt Req	Amt Funded
Adams County Comm Center, Inc.	Defibrillation/Cardiac Monitor	\$1,442.50	\$821.00
Adams County EMS Council	EMS Equipment	\$2,040.00	\$2,040.00
Baca Grande Property Owners Assn	EMS Equipment	\$2,913.35	\$2,914.00
Bent County Ambulance Service	Defibrillation/Cardiac Monitor	\$21,600.00	\$10,800.00
Bent County Ambulance Service	EMS Equipment	\$15,251.88	\$7,627.00
Big Sandy Fire Protection District	Ambulance, Other Vehicle	\$49,365.00	\$49,365.00
Black Forest Fire Rescue Prot Dist	EMS Equipment	\$600.00	\$600.00
Black Forest FRPD	Defibrillation/Cardiac Monitor	\$10,800.00	\$10,800.00
Boulder Emergency Squad	Other	\$11,201.50	\$0.00
Byers Rescue Squad	Communications	\$26,406.31	\$5,083.00
Byers Rescue Squad	Defibrillation/Cardiac Monitor	\$8,887.50	\$0.00
Calhan Fire Protection District	Communications	\$2,500.00	\$2,500.00
Calhan Fire Protection District	Other	\$1,347.50	\$1,348.00
Carbondale and Rural Fire Prot Dist	Ambulance, Other Vehicle	\$64,435.00	\$64,435.00
Cheyenne County Amb Service	Ambulance, Other Vehicle	\$64,125.00	\$63,812.00
City Of Wray	Ambulance, Other Vehicle	\$35,735.00	\$35,735.00
Clear Creek County EMS / Amb	Defibrillation/Cardiac Monitor	\$4,274.50	\$4,275.00
Colorado Medical Reserve Corps	Communications	\$4,341.00	\$0.00
Colorado Medical Reserve Corps	Other	\$5,000.00	\$0.00
Colorado NW Comm College	EMS Training	\$13,328.95	\$13,329.00
Conejos County EMS	Ambulance, Other Vehicle	\$58,000.00	\$58,000.00
Cortez Fire Protection District	EMS Equipment	\$1,225.00	\$1,225.00
Crested Butte Fire Protection District	EMS Training	\$5,500.00	\$5,500.00
Custer County Ambulance	EMS Equipment	\$13,826.16	\$13,827.00
Delta County Ambulance District	Defibrillation/Cardiac Monitor	\$10,817.68	\$10,800.00
Delta County Ambulance District	Ambulance, Other Vehicle	\$54,549.97	\$54,550.00
Elk Creek Fire Protection District	EMS Training	\$13,250.00	\$0.00
Englewood Fire Department	EMS Equipment	\$23,604.76	\$5,475.00
Estes Park Medical Center Amb	Ambulance, Other Vehicle	\$59,678.50	\$59,679.00
Evergreen Fire Protection District	Data Collection	\$4,217.39	\$0.00
Fairmount Fire District	EMS Training	\$8,957.35	\$7,020.00
Fairmount Fire District	EMS Equipment	\$2,571.79	\$2,531.00
Federal Heights Fire Department	EMS Equipment	\$5,700.00	\$0.00
Florissant Fire Protection District	EMS Training	\$4,685.00	\$4,685.00
Florissant Fire Protection District	EMS Equipment	\$2,497.50	\$0.00
Fort Lewis Mesa Fire Protection Dist	Defibrillation/Cardiac Monitor	\$3,903.02	\$3,903.00
Fort Lewis Mesa FPD	EMS Equipment	\$3,230.59	\$3,231.00
Fort Morgan Volunteer Fire Dept	Extrication Equipment	\$3,250.00	\$0.00
Frederick Fire Protection District	Data Collection	\$15,695.25	\$8,748.00
Frederick Fire Protection District	Defibrillation/Cardiac Monitor	\$2,197.50	\$2,198.00
Gateway Unaweep Fire Department	Defibrillation/Cardiac Monitor	\$18,900.00	\$18,900.00
Gateway Unaweep Fire Department	Extrication Equipment	\$4,812.25	\$4,813.00
Glacier View Fire Protection District	Ambulance, Other Vehicle	\$17,154.00	\$17,154.00
Grand County EMS	Data Collection	\$10,500.00	\$10,500.00

FY09 EMS Provider Grant Awards			
Agency Name	Category Name	State Amt Req	Amt Funded
Grand Lake Fire Department	Extrication Equipment	\$10,275.00	\$10,275.00
Gunnison Valley Hospital-EMS	Communications	\$3,570.00	\$3,570.00
Gunnison Valley Hospital-EMS	Data Collection	\$8,440.00	\$8,440.00
Hasty/McClave Fire Protection Dist	EMS Equipment	\$498.62	\$499.00
Hasty/McClave Fire Protection Dist	Defibrillation/Cardiac Monitor	\$6,250.00	\$6,250.00
Haxtun Ambulance Service	Defibrillation/Cardiac Monitor	\$13,992.00	\$13,992.00
Hinsdale County EMS	EMS Training	\$4,392.50	\$4,393.00
Jackson 105 Fire Protection District	Communications	\$5,500.00	\$5,500.00
Jackson 105 Fire Protection District	Ambulance, Other Vehicle	\$70,509.00	\$0.00
La Veta Fire Protection District	Ambulance, Other Vehicle	\$57,500.00	\$57,500.00
Lamar Fire and EMS	Data Collection	\$5,151.84	\$4,513.00
Lamar Fire and EMS	Extrication Equipment	\$5,848.16	\$0.00
Lands End Fire Protection Dist.	EMS Equipment	\$6,300.00	\$6,300.00
lefthand FPD	Communications	\$2,700.00	\$2,700.00
lefthand FPD	EMS Equipment	\$4,393.02	\$3,744.00
Limon Ambulance Service	Defibrillation/Cardiac Monitor	\$10,132.33	\$10,133.00
Lincoln Community Hospital	EMS Training	\$6,962.00	\$6,962.00
Livermore Volunteer Fire Department	Communications	\$4,991.09	\$4,992.00
Louisville Fire Protection District	Data Collection	\$13,969.00	\$13,969.00
Morgan Community College	EMS Training	\$67,950.00	\$54,360.00
Mountain Communities FPD	EMS Equipment	\$2,399.00	\$2,330.00
Nederland Fire Protection District	Extrication Equipment	\$4,388.00	\$4,388.00
North Colorado Medical Center Assn	EMS Training	\$20,000.00	\$10,000.00
North Fork Volunteer Fire Dept	Data Collection	\$3,936.00	\$3,936.00
North Washington FPD Amb Ent	EMS Equipment	\$2,800.00	\$2,800.00
Northeast Teller County FPD	Ambulance, Other Vehicle	\$26,694.00	\$0.00
Northeastern Junior College	EMS Training	\$47,067.83	\$47,068.00
Northern Saguache County Amb Dist	Ambulance, Other Vehicle	\$64,400.00	\$64,400.00
Northwest Colorado RETAC	Injury Prevention	\$4,000.00	\$4,000.00
Northwest Colorado RETAC	Recruitment / Retention	\$15,300.00	\$15,300.00
Northwest Fremont EMS, Inc.	EMS Training	\$2,075.00	\$2,075.00
Norwood Fire Protection District	EMS Training	\$7,768.42	\$7,769.00
Norwood Fire Protection District	Ambulance, Other Vehicle	\$68,558.50	\$68,558.00
Nucla Naturita Ambulance Svc, Inc.	EMS Training	\$3,274.15	\$3,275.00
Nucla Naturita Ambulance Svc, Inc.	EMS Equipment	\$3,000.00	\$3,000.00
Ouray County EMS	Ambulance, Other Vehicle	\$59,345.50	\$59,346.00
Ouray County EMS	Defibrillation/Cardiac Monitor	\$9,510.19	\$9,510.00
Palisade Fire Department	Data Collection	\$5,809.00	\$0.00
Paradox Valley Ambulance Assn	EMS Training	\$1,376.16	\$1,377.00
Plains to Peaks RETAC	Injury Prevention	\$10,370.00	\$10,370.00
Plateau Valley Fire Protection Dist	Ambulance, Other Vehicle	\$57,000.00	\$57,000.00
Poudre Valley Hospital EMS	Ambulance, Other Vehicle	\$60,320.00	\$0.00
Rattlesnake Fire Rescue	Ambulance, Other Vehicle	\$62,780.00	\$0.00
Rattlesnake Fire Rescue	Extrication Equipment	\$44,620.00	\$0.00

FY09 EMS Provider Grant Awards			
Agency Name	Category Name	State Amt Req	Amt Funded
Rocky Mountain Fire	EMS Training	\$600.00	\$600.00
Rocky Mountain Fire	EMS Equipment	\$10,790.50	\$10,791.00
Rocky Mountain Rescue Group	Ambulance, Other Vehicle	\$30,200.00	\$25,400.00
Sable Altura Fire	Data Collection	\$11,874.33	\$1,695.00
San Juan Basin Area Vo Tech	EMS Training	\$61,870.50	\$52,870.00
San Juan Basin Area Vo Tech School	EMS Equipment	\$4,216.83	\$4,217.00
Sedgwick County Ambulance Svc	EMS Training	\$9,340.00	\$5,573.00
Sheridan Fire Department	Defibrillation/Cardiac Monitor	\$9,000.00	\$9,000.00
Sheridan Fire Department	Extrication Equipment	\$7,750.00	\$0.00
South Y-W Ambulance Service, Inc.	Communications	\$10,192.00	\$10,192.00
South Y-W Ambulance Service, Inc.	Data Collection	\$1,645.00	\$1,645.00
Southeast Colorado RETAC	Injury Prevention	\$5,000.00	\$5,000.00
Southeast Colorado RETAC	Recruitment / Retention	\$9,778.13	\$0.00
Southwest Teller County EMS	EMS Equipment	\$7,494.50	\$7,403.00
Southwest Teller County EMS	Data Collection	\$4,500.00	\$4,500.00
Springfield EMS Association, Inc.	EMS Training	\$5,975.86	\$5,886.00
St Vincent General Hospital District	EMS Equipment	\$1,500.00	\$1,500.00
St Vincent General Hospital District	Ambulance, Other Vehicle	\$30,715.00	\$30,715.00
St. Mary's Hospital EMS Outreach	EMS Equipment	\$4,823.66	\$4,824.00
Steamboat Springs Fire and Rescue	Ambulance, Other Vehicle	\$69,846.90	\$69,847.00
Steamboat Springs Fire and Rescue	EMS Equipment	\$18,059.14	\$18,060.00
Stratmoor Hills Fire Protection Dist	EMS Equipment	\$2,315.00	\$2,315.00
Student Emergency Medical Services	Ambulance, Other Vehicle	\$14,220.00	\$0.00
SUGAR LOAF FIRE DEPT.	Communications	\$3,397.50	\$3,398.00
SUGAR LOAF FIRE DEPT.	EMS Equipment	\$2,843.50	\$2,843.00
The Memorial Hospital	Ambulance, Other Vehicle	\$69,706.33	\$69,706.00
The Memorial Hospital	EMS Equipment	\$10,940.67	\$10,941.00
Town of Palmer Lake	Defibrillation/Cardiac Monitor	\$2,745.00	\$0.00
Town of Palmer Lake	EMS Equipment	\$1,287.63	\$0.00
Trinidad State Junior College	EMS Training	\$104,914.00	\$83,932.00
Ute Pass Regional Ambulance Dist	Ambulance, Other Vehicle	\$65,970.00	\$65,970.00
Washington County Ambulance Svc	Communications	\$12,784.00	\$12,784.00
Washington County Ambulance Svc	Data Collection	\$7,505.00	\$7,505.00
Weld County Paramedic Services	Ambulance, Other Vehicle	\$38,400.00	\$38,400.00
Western RETAC	Other	\$9,299.50	\$9,300.00
Western RETAC	Recruitment / Retention	\$18,000.00	\$18,000.00
Yampa Fire Protection District	Defibrillation/Cardiac Monitor	\$3,506.75	\$3,507.00
		<b>\$2,273,442.24</b>	<b>\$1,761,136.00</b>

**Regional Emergency Medical and Trauma Advisory Councils  
Funding Summary November 2008**

<b>RETAC Name</b>	<b>Participating Counties</b>	<b>Funding</b>
Central Mountains RETAC	Chaffee, Eagle, Lake, Park, Pitkin, Summit	\$165,000.00
Foothills RETAC	Boulder, Clear Creek, Gilpin, Grand, Jefferson	\$150,000.00
Mile-High RETAC	Adams, Arapahoe, Broomfield, Denver, Douglas, Elbert	\$165,000.00
Northeast CO RETAC	Jackson, Larimer, Logan, Morgan, Phillips, Sedgewick, Washington, Weld, Yuma	\$210,000.00
Northwest RETAC	Garfield, Mesa, Moffat, Rio Blanco, Routt	\$150,000.00
Plains to Peaks RETAC	Cheyenne, El Paso, Kit Carson, Lincoln, Teller	\$150,000.00
San Luis Valley RETAC	Alamosa, Conejos, Costilla, Mineral, Rio Grande, Saguache	\$165,000.00
Southeastern CO RETAC	Baca, Bent, Crowley, Kiowa, Otero, Prowers	\$165,000.00
Southern CO RETAC	Custer, Fremont, Huerfano, Las Animas, Pueblo	\$150,000.00
Southwest RETAC	Archuleta, Dolores, La Plata, Montezuma, San Juan	\$150,000.00
Western RETAC	Delta, Hinsdale, Gunnison, Montrose, Ouray, San Miguel	\$165,000.00

**Total RETAC Funding**

**\$1,785,000.00**

## **Medical Direction Committee Members - November 2008**

### **State EMTS Medical Director (1)**

**Arthur Kanowitz, MD, FACEP** – EMS Medical Director Mountain View Fire and former Medical Director for Pridemark Paramedics. Member of Denver Metro EMS Medical Directors. President and Chief Medical Officer for InnoMed R&D.

### **Medical Director Positions (4)**

**Eugene M. Eby, MD, FACEP** – Emergency Physician, Emergency Department for Porter, Littleton and Parker Adventist Hospitals. EMS Medical Director, Littleton Fire Rescue. National Association of EMS Physicians. Denver Metro EMS Medical Directors. American College of Emergency Physicians.

**Benji K. Kitagawa, DO** – Emergency Physician with North Colorado Emergency Physicians, Attending at North Colorado Medical Center, Greeley. Part-time EM attending at Valley View Hospital, Glenwood Springs. Medical Director Western Eagle County Ambulance District, Eagle FD, Gypsum FD, Eagle Airport FD, Glenwood Springs FD.

**Kevin Weber, MD** – Emergency Physician, Medical Director and EMS Medical Director, St. Mary Corwin Hospital, Pueblo. Medical Director for AMR, Pueblo City Fire, Pueblo West Fire, Boone VFD, Fowler VFD, Trinidad Ambulance District, Crowley County Ambulance. Pueblo County EMS Council.

**John Abbott, DO** – Emergency Department Director, Prowers Medical Center. Medical Director, Lamar Ambulance Service, Hasty McClave Ambulance Service. Previous Colorado Physician Advisor of the Year

### **EMS Provider (4)**

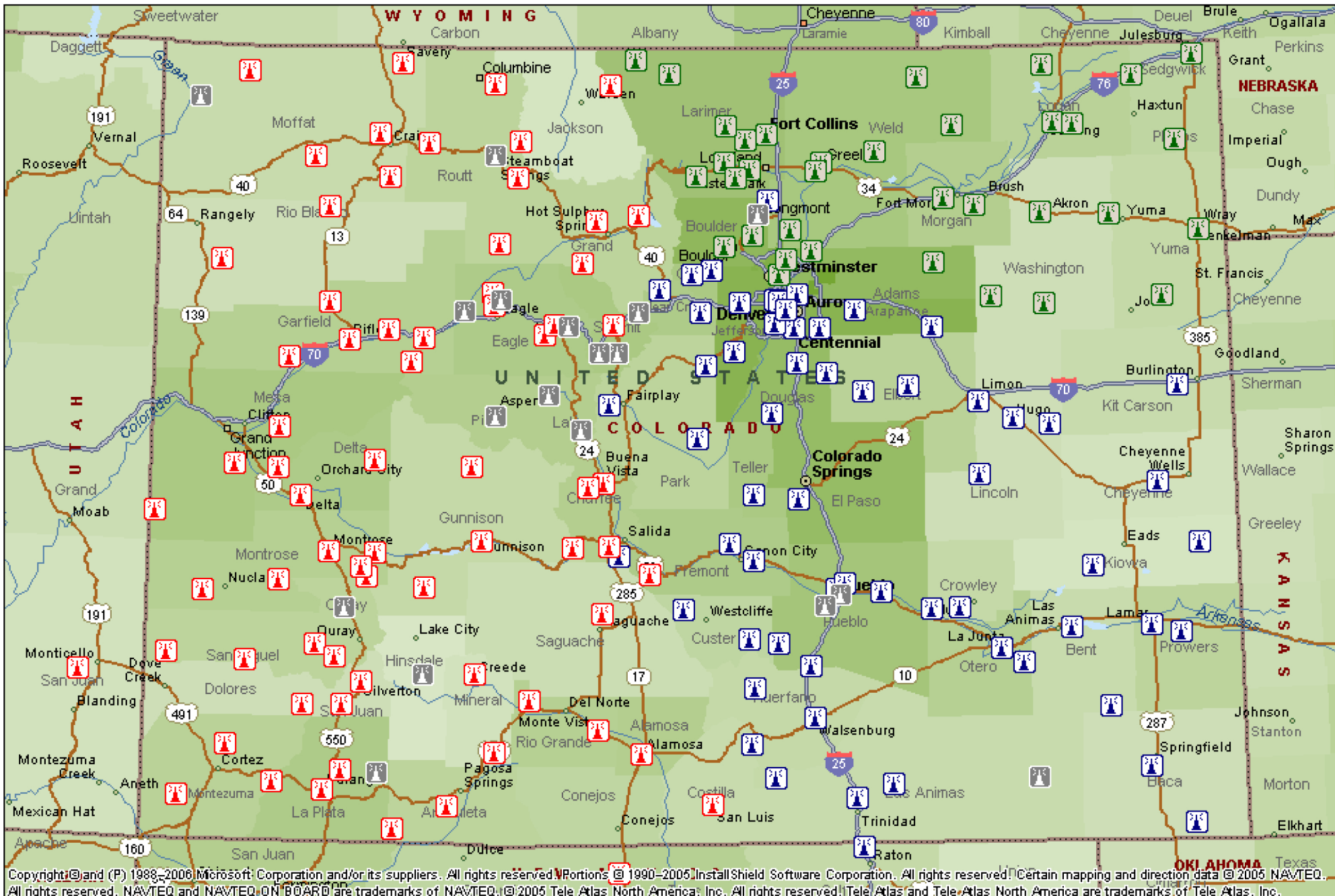
**Claudia Applin, EMT, FFI** – EMS/Fire Science Education Director/Dean, San Juan Basin Technical College, Cortez. Lead paramedic Southwest Memorial Hospital. Paramedic/Firefighter Cortez Volunteer Fire Department.

**Thomas Candlin, III, EMT** – EMS Coordinator, St. Anthony Prehospital Services. Volunteer Paramedic, Clear Creek Emergency Services. Board Member, Clear Creek County, Foothills RETAC.

**Tom Soos, EMT** – Director, The Memorial Hospital EMS, Craig. Chairman, Moffat County EMS Council. Vice Chairperson, Northwest RETAC.

**Don Stroup, AAS, NREMT** – Paramedic, Poudre Valley Ambulance Service. Previous Flight Paramedic, fixed wing and helicopter. Critical Care and MICU technician.

# State of Colorado 800 Megahertz Digital Trunked Radio Project Predicted Coverage Map





## DESIGNATED TRAUMA CENTERS

Updated November 2008

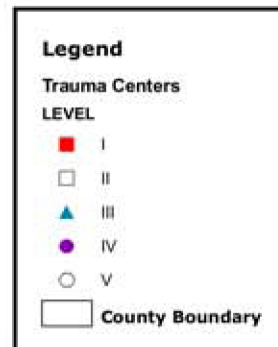
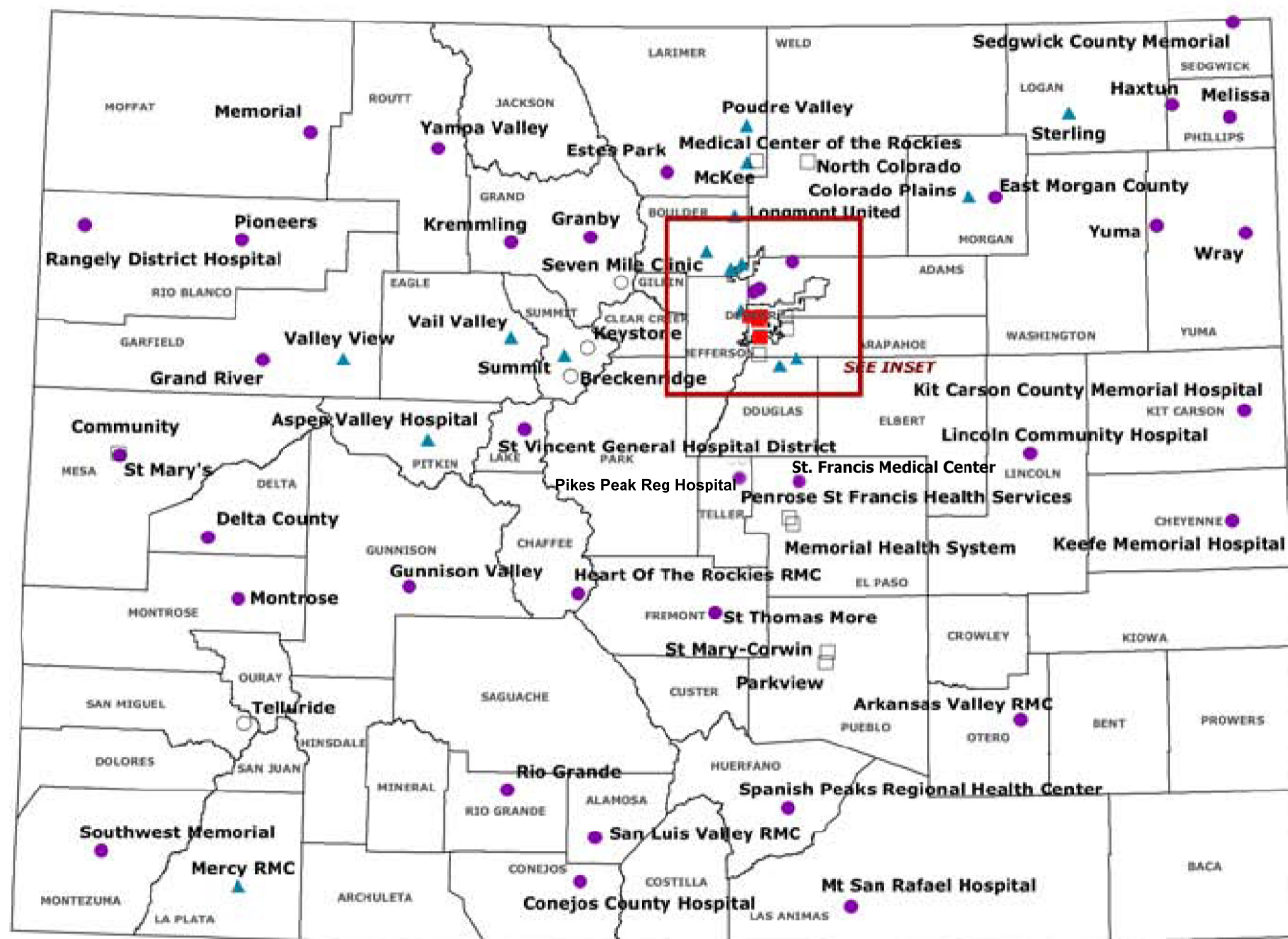
Level	Facility Name	City	Zip
NonD	Animas Surgical Center	Durango	81301
IV	Arkansas Valley Regional Medical Center	La Junta	81050
III	Aspen Valley Hospital	Aspen	81611
III	Avista Adventist Hospital	Louisville	80027
NonD	Avon Medical Center	Avon	81620
NonD	Basin Clinic	Naturita	81422
III	Boulder Community Hospital	Boulder	80301
NonD	Boulder Community Hospital-Foothills Campus	Boulder	80303
V	Breckenridge Medical Clinic	Breckenridge	80443
NonD	Centennial Medical Plaza	Englewood	80112
III	Colorado Plains Medical Center	Fort Morgan	80701
IV	Community Hospital	Grand Junction	81502
IV	Conejos County Hospital	La Jara	81140
NonD	Crested Butte Medical Center	Mount Crested Butte	81225
IV	Delta County Memorial Hospital	Delta	81416
I	Denver Health Medical Center	Denver	80204
IV	East Morgan County Hospital	Brush	80723
IV	Estes Park Medical Center	Estes Park	80517
NonD	Family Health West Hospital	Fruita	81521
III	Good Samaritan Medical Center	Lafayette	80026
IV	Granby Medical Center	Granby	80446
IV	Grand River Medical Center	Rifle	81650
IV	Gunnison Valley Hospital	Gunnison	81230
IV	Haxtun Hospital District	Haxtun	80731
IV	Heart Of The Rockies Regional Medical Center	Salida	81201
IV	Keefe Memorial Hospital	Cheyenne Wells	80810
V	Keystone Medical Center	Keystone	80435
IV	Kit Carson County Memorial Hospital	Burlington	80807
IV	Kremmling Memorial Hospital District	Kremmling	80459
IV	Lincoln Community Hospital	Hugo	80821
II	Littleton Adventist Hospital	Littleton	80122
III	Longmont United Hospital	Longmont	80501
III	Lutheran Medical Center	Wheatridge	80033
III	McKee Medical Center	Loveland	80538
II	Medical Center of the Rockies	Loveland	80538
IV	Melissa Memorial Hospital	Holyoke	80734
II	Memorial Health System	Colorado Springs	80909
III	Mercy Regional Medical Center	Durango	81301
IV	Montrose Memorial Hospital	Montrose	81404
IV	Mt San Rafael Hospital	Trinidad	81082
NonD	National Jewish Medical & Research Center	Denver	80206
II	North Colorado Medical Center	Greeley	80631
IV	North Suburban Medical Center	Thornton	80229
NonD	Pagosa Mountain Hospital	Pagosa Springs	81147
III	Parker Adventist Hospital	Parker	80138
II	Parkview Medical Center	Pueblo	81003
II	Penrose St Francis Health Services	Colorado Springs	80907
IV	Pikes Peak Regional Hospital	Woodland Park	80863
IV	Pioneers Medical Center	Meeker	81641
IV	Platte Valley Medical Center	Brighton	80601
NonD	Porter Adventist Hospital	Denver	80210

Level	Facility Name	City	Zip
III	Poudre Valley Hospital	Fort Collins	80524
NonD	Presbyterian/St Luke's Medical Center	Denver	80218
NonD	Prowers Medical Center	Lamar	81047
IV	Rangely District Hospital	Rangely	81648
IV	Rio Grande Hospital	Del Norte	81137
NonD	Rose Medical Center	Denver	80277
NonD	Saint Joseph Hospital	Denver	80218
IV	San Luis Valley Regional Medical Center	Alamosa	81101
IV	Sedgwick County Memorial Hospital	Julesburg	80737
V	Seven Mile Clinic	Winter Park	80482
III	Sky Ridge Medical Center	Lone Tree	80124
NonD	Southeast Colorado Hospital	Springfield	81073
IV	Southwest Memorial Hospital	Cortez	81321
IV	Spanish Peaks Regional Health Center	Walsenburg	81089
I	St Anthony Central Hospital	Denver	80204
IV	St Anthony North Hospital	Westminster	80031
IV	St. Francis Medical Center	Colorado Springs	80933
II	St Mary-Corwin Medical Center	Pueblo	81004
II	St Mary's Hospital	Grand Junction	81501
IV	St Thomas More Hospital	Canon City	81212
IV	St Vincent General Hospital District	Leadville	80461
NonD	St. Anthony @ Copper Mountain	Copper Mountain	80443
III	Sterling Regional Medical Center	Sterling	80751
III	Summit Medical Center	Frisco	80443
I	Swedish Medical Center	Englewood	80110
NonD	Swedish SW ER	Littleton	80123
V	Telluride Medical Center	Telluride	81435
RPTC	The Children's Hospital	Aurora	80045
II	The Medical Center Of Aurora	Aurora	80012
IV	The Memorial Hospital	Craig	81625
II	University of Colorado Hospital	Aurora	80045
III	Vail Valley Medical Center	Vail	81657
III	Valley View Hospital	Glenwood Springs	81601
NonD	Weisbrod Memorial County Hospital	Eads	81036
IV	Wray Community District Hospital	Wray	80758
IV	Yampa Valley Medical Center	Steamboat Springs	80477
IV	Yuma District Hospital	Yuma	80758

*RPTC (Regional Pediatric Trauma Center)	1
Level I	3
Level II	10
Level III	16
Level IV	36
Level V	4
<b>Total Designated Trauma Centers</b>	<b>70</b>
<b>Total Non-Designated Facilities</b>	<b>18</b>
<b>Total</b>	<b>88</b>



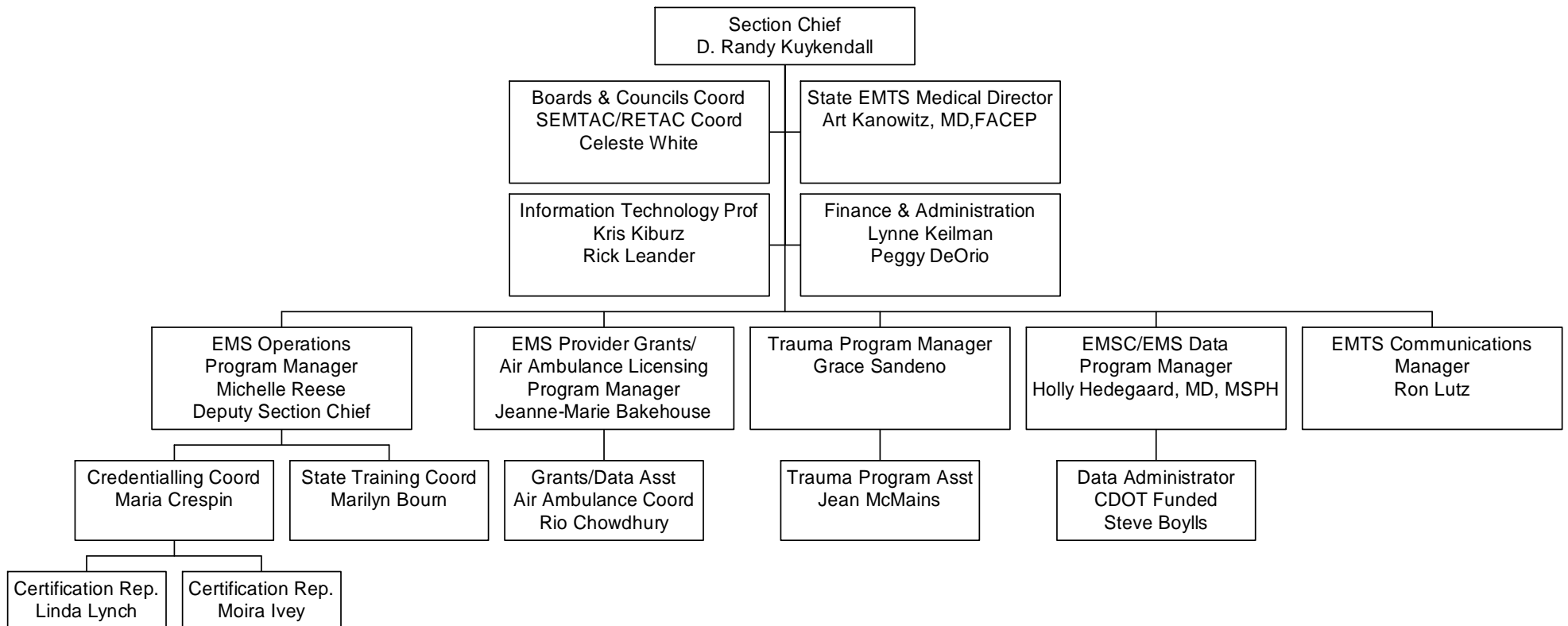
# Designated Trauma Centers in Colorado - November 2008



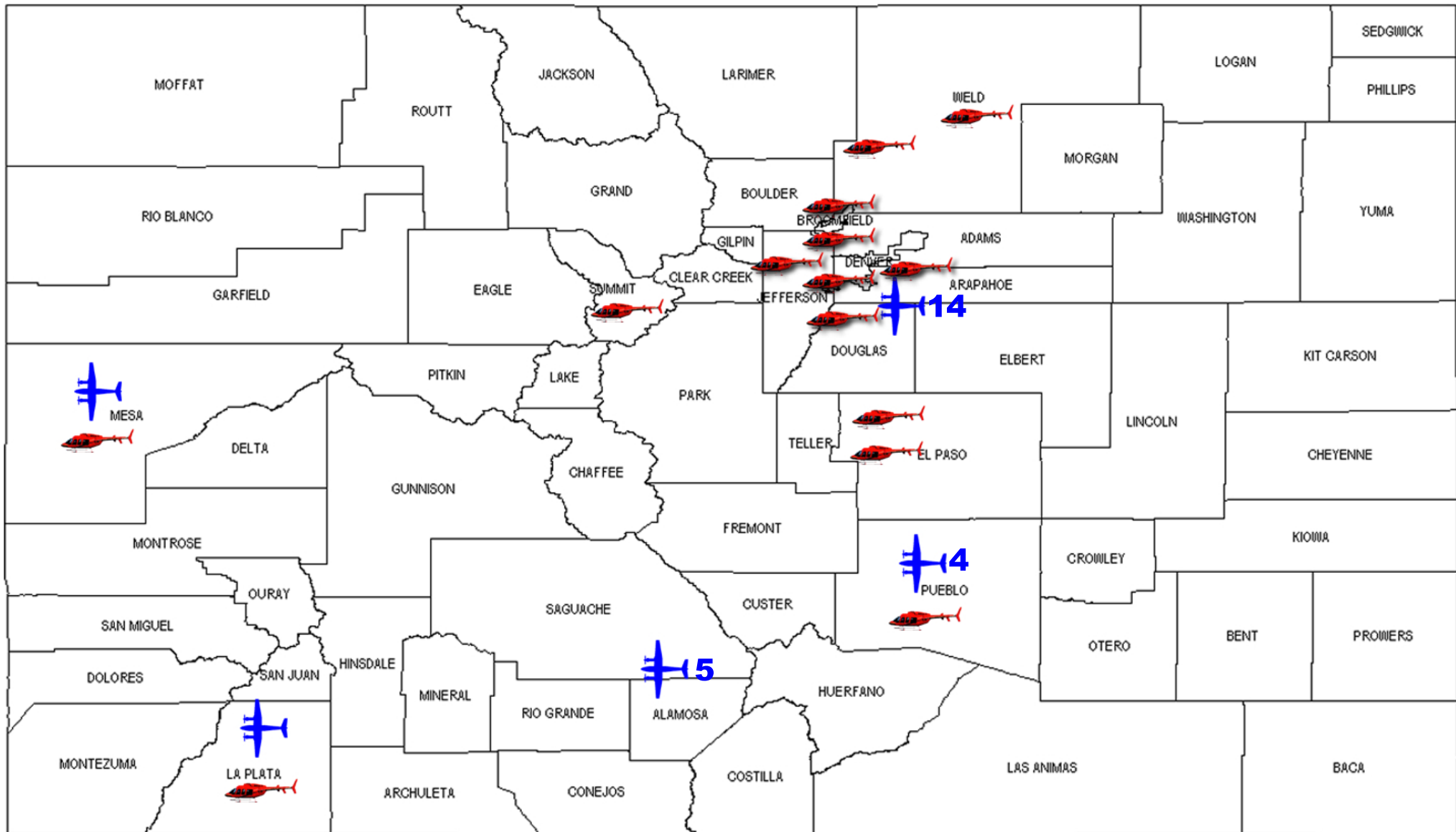
Colorado Department  
of Public Health  
and Environment

Appendix I

Colorado Department of Public Health and Environment  
Emergency Medical and Trauma Services Section  
November 2008



# Air Ambulance Services in Colorado



Appendix K



Rotor-Wing Services



Fixed-Wing Services

One aircraft shown unless identified by number