State Of Colorado

Department of Public Health and Environment
Pre-Hospital Care Program
Trauma Program

Emergency Medical and Trauma Service System

Legislative Report
January 1, 2000

Executive Summary

Emergency Medical and Trauma System in Colorado

Colorado's emergency medical and trauma services system provides immediate care to the sick and injured 24 hours a day, 365 days a year. The survival of many patients is dependent upon several factors, a critical factor being the availability of appropriately trained health care providers as well as properly equipped ambulances, trauma centers, and other healthcare facilities.

In 1995, trauma was recognized as a major contributor to death, disability, and increased medical care costs in Colorado. The number of injury deaths in Colorado reached 2,226 in 1998, making trauma the leading cause of death for Coloradans age 1 through 44. Compared to national statistics, death rates for unintentional injury, motor vehicle crashes and suicide are higher in Colorado than the national average. The lifetime earnings lost due to premature deaths from injury in Colorado was estimated at $1.5 billion in 1997. National experience clearly demonstrates that a coordinated and well-developed emergency medical and trauma service system results in a reduction in preventable deaths and produces a positive impact on patient outcomes. The establishment of the EMS Account in 1989 and the Trauma Act of 1995 provided some funding and authority for the development of a comprehensive emergency medical and trauma service system for Colorado.

Initial evaluations into the effectiveness of the trauma system passage of the legislation have demonstrated a significant decrease in mortality rates among the moderately injured trauma patient.

Colorado Department of Public Health and Environment's Role

The Colorado Department of Public Health and Environment (the Department) shares regulatory responsibilities with the Colorado Medical Board and the governing bodies of each of Colorado's 63 counties. Additionally, there are two Governor appointed advisory committees, (State Advisory Council on Emergency Medical Services and the State Trauma Advisory Council) who provide recommendations on rules, implementation of program activities, and help in the identification of system needs and priorities.

<u>Emergency Medical Services and Prevention Division - Prehospital Care Program</u>

Defined by the EMS Act of 1978, the Department's role in the provision of emergency medical services is as follows:

- The certification of emergency medical technicians (EMTs) which involves: processing applications; administering tests; issuing certificates; and investigating complaints against EMTs.
- The regulation of institutions providing EMT training which involves: developing curricula;

approving courses for content; classroom hours and; documentation; monitoring quality of instruction.

- The administration and management of both the county subsidy and EMS provider grant programs.

Additionally, staff spend considerable time providing technical support for the development and provision of emergency medical services across the state.

Emergency Medical Services and Prevention Division - Trauma Program

The State Board of Health and the Department roles were defined in the Trauma System Act of 1995. Those responsibilities currently encompass: establishing the trauma system's infrastructure in rules to include the designation process for health care facilities interested in trauma center status, identifying the responsibilities of the Area Trauma Advisory Councils (ATACs), and defining the facility requirements for the Colorado Trauma Registry. In November 1997 standards were adopted for trauma center designation. Designation of trauma centers began in June 1998 and, as of December 1999, the Department has designated 63 trauma centers. The Trauma Program also provides direction and limited technical assistance to Area Trauma Advisory Councils for the development of area plans, trauma triage protocols, local plan quality monitoring, and organizational issues critical to local trauma system implementation.

Funding

Funding for the Prehospital Care and Trauma Programs comes primarily from the EMS Account of the Highway Users Tax Fund (HUTF) and the collection of trauma center designation fees. The EMS Account funds the EMS provider grants program, the county subsidy program, and the direct and indirect expenses of the Prehospital Care Program. The Trauma Program is funded in part by EMS Account funds in addition to fees collected through the trauma center designation process. No General Fund monies are provided for either program.

Challenges

The main challenges facing the continued growth of a coordinated EMS and trauma system for Colorado is further efforts will be required to better coordinate the provision of emergency medical and trauma services across all 63 counties, and existing resources may limit the trauma program's ability to achieve maximum statewide efficiency. These challenges need to be addressed by the EMS and trauma provider community and the Department, and may require statutory revisions.

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Introduction

Emergency medical and trauma care services are immediate healthcare services needed as a result of injury or sudden illness, particularly when there is a threat to life or long-term functional abilities. These services, provided by prehospital providers, trauma centers and other healthcare facilities are unique in that they must be immediately available 24 hours a day, 365 days a year. The outcome of many of these patients is dependent upon several factors, including the immediate availability of appropriately trained individuals and properly equipped ambulances, trauma centers and other healthcare facilities. A coordinated emergency medical and trauma service system offers timely healthcare services for Colorado's residents and visitors regardless of age, socioeconomic status, or special needs.

The Trauma Care Act of 1995, provided a focus on this system's response to trauma (injured) patients. The number of injury deaths in Colorado reached 2226 in1998, making trauma the leading cause of death for Coloradans age 1 - 44. Estimates from state data sources suggest that during 1998 nearly 1 in ten Coloradans received medical care in a hospital setting for injury (an estimated 370,000 emergency department visits and 27,000 admissions). Comparison to national statistics show death rates for unintentional injury, motor vehicle crashes, and suicide are higher in Colorado than the national average.

The large number of patients, costliness of care, need for ongoing rehabilitation, and loss in productivity are significant contributors to medical and societal costs. Because trauma deaths disproportionately involve younger populations, deaths due to injury significantly contribute to the lifetime earnings lost due to premature death. In 1997 the lifetime earnings lost due to premature deaths from injury in Colorado was estimated at $1.5 billion.

Studies indicate that 30 to 40% of all trauma deaths occur within one hour of injury, and that 30 to 40% of these deaths are preventable if appropriate care is received in a timely manner. National experience clearly demonstrates that a coordinated and well-developed emergency medical and trauma services system can result in a reduction in the number of preventable deaths.

Background

The *Emergency Medical Services Act* passed in 1978, gave limited authority to the Department to assist in the development of a coordinated EMS system. Regulation within the system comes from the Department, the Colorado Medical Board, and the 63 Colorado counties with advice from the State Emergency Medical Services Advisory Council. The Department has the responsibility to certify Emergency Medical Technicians (EMTs) at three levels -- Basic, Intermediate, and Paramedic. Institutions providing the training for certification are also required to be approved by the Department. The Colorado Medical Board supervises the physician advisors who provide medical direction for EMTs and defines the scope of practice for prehospital providers (EMTs). All EMTs are required to have a physician advisor in order to practice. Each of the 63 counties are responsible for inspecting and licensing ambulances.

In 1989, a stable funding source for the state's EMS system was established with $1 from each annual vehicle registration fee placed in the EMS Account of the Highway Users Tax Fund (HUTF). The appropriation is distributed among three accounts: 60% for distribution as grants to local EMS systems; 20% for county planning and coordination of emergency medical services and; 20% for the direct and indirect costs to the Department for providing certification of EMTs, approval of training centers, and technical assistance in planning, developing, implementing, maintaining, and improving the statewide system.

The *Trauma System Act* of 1995 gave statutory authority to the Department to assist in the development of a coordinated trauma system. Regulation of the system comes from the Department, the State Board of Health, and the 63 Colorado counties, with advice from the State Trauma Advisory Council. The State Board of Health and the Department established the trauma system's framework with the development of minimum system standards to include those for hospitals and other healthcare facilities to become designated trauma centers. Sixteen Area Trauma Advisory Councils were formed by county commissioners throughout the state. (See Appendix B.3 and Appendix C.) The ATACs are responsible for establishing a plan for the coordinated delivery of care to the trauma patients in their respective areas.

The only stable funding for the trauma center designation process comes from fees paid by facilities seeking designation. This fee covers the direct and indirect costs of designation activities. The administrative, regulatory, and ATAC components of the Trauma Program are currently funded within the EMS Account appropriations, authorized in an FY98 decision item. In addition, a short-term grant helps support development of prehospital care and trauma data collection.

Part I

Emergency Medical Services
Prehospital Care and Trauma Funding

Overview of Fiscal Year 2000 Funding

Funding for the Prehospital Care and Trauma Programs comes primarily from the HUTF EMS Account and the collection of trauma center designation fees. The EMS Account supports the EMS provider grant program, the county subsidy program, and the direct and indirect expenses of the Prehospital Care Program. The Trauma Program is supported in part by EMS Account funds and by fees collected through the trauma center designation process. No General Fund monies are provided to either program at this time. Table 1 outlines the funding for FY99-00. EMS Account appropriations, which currently include both the original EMS/Prehospital Care Program and Trauma Program components, cannot continue to be funded at the present levels after FY2003-04.

Category	HUTF/ EMS Account		Trauma Center Designation Fees
	Prehospital Care Program	Trauma Program	
EMS Provider Grants	$2,240,135	$522,841	
County Subsidy	950,817	n/a	
Program Administration	576,870	212,032	
Trauma Center Designation (Administration & Survey Team Costs)	n/a	n/a	$385,180
Indirect Cost Assessment	153,104	56,627	36,632
TOTAL	$3,920,926	$791,500	$421,812

Table 1: Fiscal Year 1999-2000 Funding.

Trauma Center Designation

Summary of Legislation

Each hospital or other health care facility seeking trauma center status is required to be designated by the Department. The designation process includes submission of an application and a site survey by a team of trauma clinical providers. The 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 into rule in January 1998, with the collection of fees beginning in April 1998.

Funding Distribution

An appropriation of $421,812 was made FY99 for designation program activities. Minimum system standards and designation fees were developed and adopted in 1998, and designation activities began in the fourth quarter of 1998. FY99 expenditures were $253,823.

The FY00 budget for designation-related costs and utilization of fee revenue is $415,183 and includes: site survey team budgeted at $279,041; administrative, including state observer, budgeted at $108,580; and the indirect costs assessment estimated at $27,562. The largest component of the budget continues to be compensation and travel expenses for the site survey teams. Team participants include trauma surgeons, emergency room physicians, and trauma nurse coordinators. The composition of each team and the number of out-of-state team members is based on national standards developed by the American College of Surgeons - Committee on Trauma and varies depending on the level of designation the facility is seeking. Additionally, a state observer participates in each site survey visit. The observer's time and travel costs comprise a large component of the administrative budget.

Prehospital Care and Trauma Center Data Collection

Summary of Legislation

Each licensed facility, clinic, and prehospital provider, that offers service or care to trauma patients, is required to submit patient information to the Department. Since Colorado had not been collecting the data from prehospital providers nor the specific clinical information needed on trauma patients from the facilities and clinics, a project was initiated in 1998 to begin development of a prehospital care and trauma data collection system.

Funding Distribution

To supplement internal resources, the Department is in the second year of a contract for database development, management, and analysis through a three year $150,000 grant awarded to the University of Colorado Health Sciences Center. The expertise and experience of the contractor will assist the Department in evaluating the EMS and trauma system in Colorado. Expected outcomes include:

- A defined minimum prehospital care data set; and support for creating a statewide prehospital care data collection system;
- Completion of a pilot project in which prehospital care data from one ATAC is combined with the hospital information on trauma patients;
- An evaluation of data quality, accuracy, and timeliness of submission and:
- An assessment of the trauma system and trauma center compliance with established rules and regulations.

The data collection component of the trauma system does not have sufficient stable funding to develop, implement, and manage these databases. The original fiscal note anticipated collecting and management of data from a total of 12 to 17 designated trauma centers. To date we have designated 63 trauma centers. Continuation of these activities is contingent upon finding a long term funding source.

Area Trauma Advisory Council Development

Summary of Current Legislation

The Trauma System Act of 1995 mandated the creation of Area Trauma Advisory Councils (ATACs), which have the responsibility to develop the implementation plan of local area trauma systems. During FY98 16 ATACs were established through cooperation of the state's 63 sets of county commissioners. (See Appendix B.3 and Appendix C.) Each ATAC conducted a needs assessment and produced a plan for system implementation by July of 1998. In subsequent years, the ATACs are to implement the plans and monitor the effectiveness of the plans.

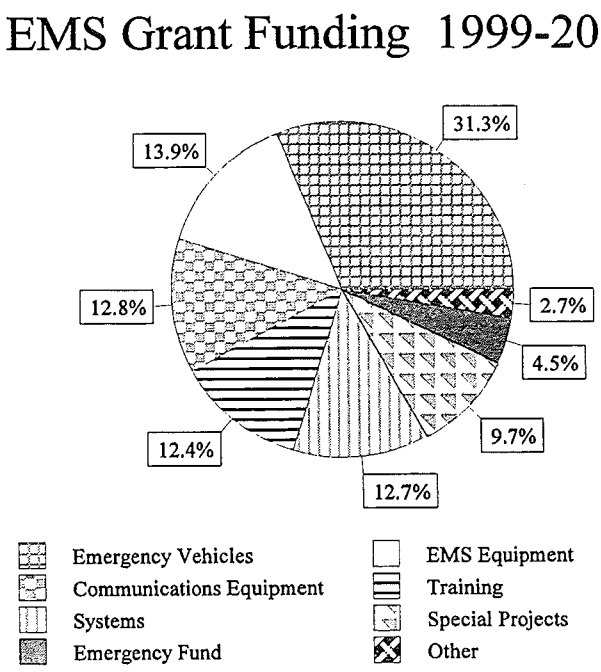
Current Funding Distribution

A FY98 Decision Item provided funds from an existing fund balance in the EMS Account for a three year ATAC development special project. For the last three years, the award of $490,584 has been divided based on the number of counties in each ATAC. Each year the ATACs have completed an updated application for funds. The yearly application process has allowed the Department to monitor ATAC development and activity.

EMS Provider Grants Program

Summary of Legislation

In 1989, a stable funding source for the state's EMS system was established with $1 from each annual vehicle registration fee placed in the EMS Account of the Highway Users Tax Fund (HUTF). A minimum of 60% of the annual appropriation from the EMS Account must be used to upgrade emergency medical services throughout the state, which is distributed through a grants program. A minimum of $150,000 must be used for the training of EMTs and $100,000 must be reserved for emergencies. The first priority for the grant monies is updating underdeveloped EMS systems and replacing aged equipment. Additional grant monies are distributed based on substantiated need.



Funding Distribution

The legislature appropriated $2,762,976 for FY00. This figure includes the allocation of $150,000 for training and $100,000 for the emergency fund. The grants appropriation also includes the funding for ATAC development.

The Department received 117 provider applications for FY00 requesting $2.4 million in EMS funding. Emergency vehicles, the most requested and expensive equipment, topped the list of funded items. A complete list of the specific grant awards can be found in Appendix A. Table 2 shows the anticipated distribution of funds as of January 2000.

EMS Grant Funding 1999-2000		
Emergency Vehicles	$ 700,202	31.3%
EMS Equipment	$ 311,762	13.9%
Communications Equipment and Systems	$ 287,130	12.8%
Training	$ 276,553	12.4%
Special Projects	$ 218,243	9.7%
Emergency Fund	$ 100,000	4.5%
Other (EMS Research & Development)	$ 60,786	2.7%
Systems Development Grants to Regions	$ 285,459	12.7%
Sub-total*	**$2,240,135**	**100.0%**
ATAC Funding	$ 522,841	
Total	**$2,762,976**	

Table 2: * Anticipated grant funding for Fiscal Year 1999-2000

The Emergency Fund ($100,000) was established to provide immediate financial assistance to EMS provider agencies experiencing unexpected problems causing the degradation or potential elimination of EMS. This fund is used to solve immediate problems where the regular grant funding process is not practical. Emergency grants thus far have included the engine repair for a transport ambulance in Lincoln County, assistance given to Gunnison Ambulance Service to help them replace an ambulance destroyed in an accident, and the purchase of a satellite cellular phone to facilitate ambulance to hospital communications for the Rico Ambulance Service.

County Subsidy Program

Summary of Legislation

A minimum of 20% of the annual appropriation from the EMS Account is assigned to provide financial assistance to counties. The funding is intended for the development, maintenance, and provision of emergency medical services, and is divided equally among the counties that qualify. A county which does not qualify cannot receive funding until the following fiscal year, and then only under the condition that the identified problem has been corrected. To receive a subsidy each county must:

- provide evidence that it is enforcing the provisions of Part 3 of the EMS Act. Part 3 establishes minimum requirements for licensing and inspecting ambulances.

- require all licensed ambulance services within the county to participate in the statewide data collection program administered by the Emergency Medical Services and Prevention (EMSP) Division.

- provide a report by October 1 of each year showing funds expenditure, ambulance licensure and inspection information, and county EMS plans updates. The report must be reviewed and approved by the EMS Advisory Council in order to receive funding.

Funding Distribution

Out of the 63 Colorado counties, 59 plans for county subsidy funding were approved. Each of the 59 counties will receive $15,092 in January 2000.

Statewide Funding Projects

Summary of Legislation

Legislation allows the Emergency Medical Services and Prevention (EMSP) Division to establish statewide projects that improve EMS services and impact all EMS providers in Colorado. The following is a list of these projects with implemention slated in Fiscal Year 2000.

Funding Distribution - Statewide Projects for Fiscal Year 1999 - 2000

- Instructor Course Subsidy - $10,000

  Funding for this project reduces the cost of tuition for emergency medical services instructor training by fifty percent. Two series of courses will be offered this fiscal year.

- Instructor Development - $9,000

  This project continues to develop and refine the emergency medical services instructor curriculums. These curriculums provide education to emergency medical service instructors who will be teaching various prehospital educational programs.

- Leadership Quality Improvement Conference - $6,000

  This project will reduce the cost of providing a leadership quality improvement course developed by the EMS section of the National Highway and Traffic Safety Administration. The course provides training for local EMS providers to develop a quality improvement program using the Malcolm Baldrige model of improvement.

- Ambulance Reimbursement Conference - $2,000

  New reimbursement rules from the Health Care Finance Administration will be enforced January 2001. These rules will change ambulance service reimbursement to a fee schedule. This project will provide a one day educational workshop for managers and billing personnel in the first half of the year 2000. Funds for this project will assist in planning and reduce the cost of tuition for participants.

- State EMS Planning Project - $25,000

  This project will continue to develop a statewide EMS plan based on the National Highway Traffic Safety Association reassessment and the 1992 legislative assessment. A draft is expected in late 2000.

- Digital Certification - $8,500

  Funding for this project will finalize the updating of the Pre-hospital Care program's certification system to provide training institutions and individuals with summative testing. The project will also provide EMT certification verification information on the Internet.

- Regional Development Planning - $40,000

  This project will provide funding to a contractor who will work with local agencies and counties in the planning, development and evaluation of their Regional EMS and Trauma Advisory Councils.

Funding Distribution - Statewide Projects for Fiscal Year 2000 - 2001

The following is a list of statewide projects that have been reviewed by the EMS Advisory Council and recommended for funding on the basis of availability.

- Instructor Course Subsidy - $15,000

  Funding for this project reduces the cost of tuition for emergency medical services instructor training by fifty percent. Three courses will be offered in Colorado in fiscal year 2001.

- Instructor Development - $4,000

  This project continues to develop and refine the emergency medical services instructor curriculums. These curriculums provide education to emergency medical service instructors who will be teaching various prehospital educational programs.

- Leadership Quality Improvement Conference - $6,000

  This project will reduce the cost of providing a leadership quality improvement course developed by the EMS section of the National Highway and Traffic Safety Administration to local EMS providers. The course goals include skills to develop an quality improvement program using the Malcolm Baldrige model of quality improvement.

- Ambulance Reimbursement Conference - $2,000

  Funds for this project will assist in planning and reduce the cost of tuition for participants to attend a one day conference explaining changes and updates on ambulance billing and reimbursement.

- State EMS Planning Project - $13,000

  This project will allow funding of additional meetings and contract work to finalize implementation of the state EMS plan. We anticipate the completion of this project in early 2001.

- CPR Directive Curriculum Revision - $5,000

  The Board of Health and the Colorado Advanced Directive Resource Group have identified the continuing need to improve the knowledge of EMS providers on the CPR Directive Program. The current curriculum is outdated and needs to revised. A contractor will be selected to revise this program for use in EMS training programs.

Part II

Evaluation of the Emergency Medical and Trauma Service System

EMS systems are typically defined as having the following components and attributes: legislation, regulation, and finance; combined with integration with other health care systems, public access, human resources and education, medical direction of prehospital personnel, air and ground transportation systems, communication systems, hospitals, public education and prevention, information systems and evaluation, and EMS research. In 1995, the Colorado Trauma Systems' components were defined in statute to specifically include: injury prevention, communication systems, prehospital care, designated trauma centers, rehabilitation care, regional coordination of medical response systems to disasters, trauma education and research, data collection and analysis, quality improvement systems, and regional planning councils. Colorado's trauma system is being integrated into the EMS system to create the Colorado Emergency Medical and Trauma Services System (EMTSS). As previously stated the Department of Public Health and Environment, Division of Emergency Medical Services and Prevention, Prehospital Care and Trauma Programs share responsibility for administration of the system with the Counties.

Prehospital Care Program Activities

Legislation, Regulation and Finance - To provide an effective system of emergency medical care, each state must have comprehensive, enabling legislation with provision for a lead EMS agency, responsibility for establishing minimum standards for components of the system and financial support to implement and administer the system. In Colorado, the Colorado Department of Public Health and Environment has the mandate to certify Emergency Medical Technicians, approve training institutions, administer and distribute grants to improve the system, and "coordinate local systems so that they interface with an overall state system providing maximally effective emergency medical systems." Planning and coordination of the state system is accomplished with advise from the governor's appointed EMS Advisory Council. Ambulance service and vehicle regulation occurs in each of the 63 counties, and varies widely in its quality and score. Aeromedical transportation services are not regulated by any entity at this time.

No entity is identified in statute as being responsible for ensuring the provision of prehospital emergency medical services (ambulance services) to the citizens of, or visitors to, the state of Colorado. A statewide strategic planning process will identify additional areas for improvement to the state EMS system.

Health Care System Integration - Integration of healthcare services helps to assure that the care provided by EMS does not occur in isolation, and that positive effects are enhanced by linkage with other community health resources and integration within the overall healthcare system. The Department has established a regional grant program that integrates traditional emergency medical services and trauma activities. The goal is to promote the concept of integration and create efficiencies in regional activities. The Department will continue to assist with Colorado's Rural Hospital Flexibility Program to provide technical assistance in local planning of emergency medical services.

Public Access - Public access is defined as the ability of an individual to secure prompt and appropriate emergency medical care regardless of socioeconomic status, age or special need. For those who contact EMS with a perceived requirement for care, the subsequent response and level of care provided must be commensurate with the situation. For nearly 30 years, 9-1-1 has been designated as the national emergency telephone number. Currently, approximately 99% of the Colorado geography is covered by this basic 911 telephone number. The single most important piece of information provided during an emergency call is the location of the person(s) requiring help. At many 911 communication centers, the caller's telephone number and location are automatically provided. Such systems are called enhanced 911 or 911E, with 75% of Colorado geography covered by 911E services. The Department has provided resources for the installation of highway call boxes in areas where access to phones is problematic. Statewide enhanced 911 services and improvements in mobile phone technology for the reporting of emergencies are goals of Colorado's system of public access.

Human Resources and Education - A dedicated team of individuals with complimentary skills and expertise is the systems most valuable asset. These individuals can perform their mission only if adequately trained and available in sufficient numbers throughout the state. The Department has a recruitment and retention program designed to assist local EMS agencies in assessing current manpower needs and establishing a plan for stable and consistent training programs with local and regional support. The Department regulates the institutions providing this training, provides instructor training programs, and curriculum approved by the Council and the Colorado Medical Board. The ability to train, retain and provide continuing education to rural and frontier services continues to be the primary focus of this program.

Medical Direction - Emergency medical care involves the delivery of medical care by non-physician providers outside the traditional confines of a hospital or office. This practice requires that each provider has a physician advisor to provide medical direction for the delivery of care. The department currently coordinates with the state medical board in the review and approval of physician advisory applications, and provides a one day course to train physicians in the supervision of emergency medical services personnel. The State Medical Director position within the department was funded and created in 1990. The state Medical Advisory Group, founded in 1995, was developed to provide additional physician input to the Prehospital Care Program and the Colorado Medical Board. The shortage of qualified and interested physicians in rural and frontier communities to serve in this advisory capacity continues to be a challenge.

Transportation Systems - Safe, reliable ambulance transportation is a critical component of an effective EMS system. The transportation component includes the regulation, inspection and licensure of ambulance services and vehicles, provision for uniform coverage, a protocol for air medical dispatch and a mutual aid plan. Providing a minimum level of emergency medical care to all of Colorado's citizens and visitors is a primary objective of the state system. Authority for the regulation, inspection and licensure of ambulances is currently a responsibility of the 63 counties. A review of county plans by the State EMS Advisory Council revealed a need in some areas of the state for a standardized approach and increased depth to the regulation of this sector of our health care system. Further analysis of county resolutions identified other inconsistences in local regulation of ambulance service. For example, 41% of the county resolutions had no revocation or suspension stipulations, and most counties do not require performance measures such as minimum staffing or

response times. Aeromedical services are not currently regulated by any state or local governmental agency.

Communication Systems - A reliable communications system is an essential component of an overall EMS system. Many states have either a regionally or centrally coordinated communications system. Incidents which overwhelm local resources in Colorado are generally not coordinated on a regional or statewide basis. There is no standardized or reliable means where by ambulances can communicate directly with health care facilities. Colorado's Digital Trunked Radio system has been and will continue to be an asset to local agencies. This system will provide the technical infrastructure and opportunity for local agencies to use a more reliable and universal communications system. The cost to local EMS agencies to upgrade radios to the new system is estimated at $45M. The Department, the Council and a liaison from the Department of Telecommunications continue to provide technical assistance and financial resources to local communities in improving their radio communications. Additional resources are necessary to plan and coordinate the communications component of the system.

Health Care Facilities -The seriously ill patient must be delivered in a timely manner to the closest appropriate facility. Colorado designates trauma centers (discussed later in this part of the report), but has not developed a system of designation for other specialty care centers. The trauma designation program provides a model for how facilities can be identified for their capacity to care for special types of patients. The state strategic planning process creates an opportunity for the EMS system to consider how to match patients needs with the appropriate health care facility in the state.

Public Education and Prevention - To effectively serve the public, the Department continues to develop its EMS public information, education and relations program (PEIR). The Colorado Emergency Medical Services for Children (EMS-C) program has provided resources and information to communities about pediatric emergencies. The Department, with advice from the Council, provides technical assistance and resources to local agencies in developing their own PIER and EMS-C programs.

Information Systems and Evaluation - A comprehensive evaluation program is needed to effectively plan, implement and monitor a statewide EMS system. Collection and analysis of information from emergency medical service agencies will allow this analysis to be conducted. The Department and the Council have provided technical assistance and resources to local and regional programs to develop their information systems. The Department has made progress in empowering local agencies to collect and analyze data at the local level. The Department's Injury Epidemiology Program is developing a pilot program where prehospital and trauma registry information will be used in a region to assist with local planning efforts. The department does not have the capacity to evaluate the statewide system on an ongoing basis.

Trauma Program Activities

Injury Prevention - A coordinated state, community, and individual effort to reduce the injury rate is the initial step in the control and reduction of trauma morbidity and mortality. Injury prevention activities should be based on analysis of available Colorado Injury data. The trauma program coordinates with the Injury Prevention Program and the Injury Epidemiology Program in an effort to provide technical assistance and information to local areas. Some Area Trauma Advisory Councils (ATAC) plan to implement public information, education, and injury prevention programs utilizing existing local funding or through coordination of activities. The Department's efforts to coordinate statewide injury prevention activities are ongoing, but limited.

Communications - A coordinated medical communications system and plan are essential to ensure patient and provider access to the trauma care system. Enhanced or Basic 911 telephone systems, properly trained dispatchers, specific protocols for the timely dispatch of ambulance agencies to incident sites and the capacity for all providers (ambulance and hospital) to communicate with each other are goals of this component. The Department requires that each area trauma plan address communications to ensure public access to trauma services. As previously stated, local communication system needs assessments and implementation strategies are being completed with the support of a liaison from the Department of Telecommunications Services.

Prehospital Care - The timely delivery of quality care, triage, and transportation to the appropriate trauma center by ambulance service personnel is essential in a trauma system. The certification and training of the personnel and licensure of the transport agencies and vehicles was discussed earlier in this report. For the trauma patient minimum standards were adopted for: ambulance and first response unit staffing, agency response and scene times, and patient triage and transport destination algorithms (protocols).

Hospital Care - Trauma Center Designation - The designation of hospitals and other healthcare facilities as trauma centers identifies those facilities making a commitment to maintain a level of trauma care resources (trained staff, equipment and policies /procedures). Level I and Level II trauma centers provide the comprehensive specialty clinical services and resources required by patients with major injuries. Level III and Level IV trauma centers are community-based facilities which triage, stabilize, and transfer those patients needing specialty services and resources. Minimum standards have been adopted for Level I - IV trauma centers, and for those trauma centers that care for pediatric patients. Each trauma center evaluates the quality of care being delivered on an on-going basis. The Department began designation in June 1998 and has designated 63 trauma centers since that time. The need for a Level V trauma center was identified during this process. Appendices B.1-4 and D provide a list and maps depicting the geographic distribution of current designated trauma centers.

Initial review of 1998 data in the Trauma Registry have generated some assessments of trauma patients, trauma centers and trauma related hospital designations. The patients who would most benefit from a trauma system are those individuals with more severe injuries. In comparing the pre- to post-legislation time periods, there has been a statistically significant increase in the percent of patients with severe injuries who are directly admitted to a Level I or Level II trauma center (from 61% in 1993-1994 to 70% in 1997-1998). Also, a higher percent of severely injured trauma patients

who are initially admitted to a Level III, IV or undesignated facility are being transferred to a Level I or II trauma center.

In 1998, charges for the hospital care of trauma patients in Colorado totaled over $400 million (this value only includes the charges assigned during hospitalization and does not include physicians' fees, pre-hospital transport or services, or rehabilitation costs). The average hospital charge per trauma patient was approximately $11,000, with a higher average hospital charge for patients injured in motor vehicle crashes (approximately $15,000) and by firearms (approximately $20,000).

Rehabilitation Care - A critical measure of a trauma system is patient access to rehabilitation care. The goal for each trauma patient is a return to a productive life. Rehabilitation services are either provided by the trauma center or the trauma center must transfer the patient to an appropriate facility.

Disaster Medical Care - Regional coordination of the medical care component of local disaster plans ensures the effective utilization of resources to meet patients' needs. Coordination of these resources are rarely done on a regional scale. Area Trauma Advisory Councils are currently coordinating the medical components of these plans.

Education and Research - Education and research in trauma clinical care are often left to teaching hospitals which are also trauma centers. This component of a trauma system ensures both continuous identification of improvements to trauma patient care as well as the dissemination of this information in the training of trauma care clinicians. In Colorado, trauma education and research are requirements of the Level I and Regional Pediatric Trauma Centers.

Trauma Registry - (Data Collection and Analysis) - Each licensed facility, clinic, or prehospital provider that provides service or care to trauma patients is required to submit patient information to the Department. This data is used to evaluate and monitor the trauma system. The data set also provides profile information on the continuum of care provided trauma patients and the systems response to the trauma patient's needs. The Colorado Trauma Registry is a unique database designed to capture information about the mechanisms of injury and care of the trauma patient. Discharge data from the Colorado Health and Hospital Association, death files from Vital Statistics and a unique patient care data set gathered from each trauma center will be merged to create the Colorado Registry. However, a statewide system for the collection of prehospital care information does not exist. Prehospital care data provide essential information concerning the injury event, EMS response time, and prehospital care administered. This information is necessary for understanding EMS and trauma care in Colorado. A special grant provides funds for a pilot project linking prehospital care data from one region of the state with inpatient information currently in the trauma registry. This combined data set will be used to evaluate the trauma system's effectiveness in providing appropriate and timely trauma care.

In an initial look at the effectiveness of the trauma system in the care of hospitalization trauma patients, two time periods were chosen for comparison: 1993-1994 as the pre-trauma legislation years and 1997-1998 as the post-legislation years. Data from the Colorado Hospital Association were used to compare the number of patients admitted, the severity of injury of admitted patients, admission patterns and age-adjusted mortality (death) rates.

In the post-legislation years, more facilities were designated as Level I, II or III trauma centers compared to the pre-legislation years.

Despite an increase in the statewide population, the total number of trauma admissions has decreased over time (from 56,780 in 1993-1994 to 52,746 in 1997-1998). However, there has been a statistically significant shift in the severity of injury for patients hospitalized for trauma. In the later time period, a higher percent of patients were more severely injured. Thus, although fewer patients are being admitted, patients who are admitted tend to be more seriously injured. Has the trauma system had an impact on patient outcome? One measure is the death (mortality) rate for hospital trauma patients. Comparison of the hospitalized death rates in the two time periods shows that for moderately severely injured trauma patients, death rates have significantly decreased in the post-legislation period. Translating the results of this analysis, compared to the earlier time period, among the moderately severely injured trauma patients, an additional 36 lives have been saved since passage of the trauma system legislation.

Continuing Quality Improvement Systems - System assessment and evaluation at the state, regional and provider levels ensure appropriate patient care and destination protocols and plans are developed, and modified as needed. Minimum continuing quality improvement requirements were defined for trauma centers, and are being developed for the Department and the ATACs. The Colorado Trauma Registry will be used by the Department to evaluate the statewide trauma system. During the 1999 legislative session, confidentiality was secured for ATAC system assessments.

Area Trauma Advisory Councils (ATACs) - Regional planning and development - Colorado's variations in demographics and geography require local participation and expertise for identifying problems and designing solutions for local area plans. Sixteen ATACs were organized across the state to ensure local participation and coordination in regional trauma system planning. Each ATAC submitted a plan for local trauma system implementation in 1998. This is the last year of a three year grant that has provided limited support for ATAC activities. A special grant that requires the merger of the Regional EMS Councils and the Area Trauma Advisory Councils has provided a new opportunity for continued activities. Given resource constraints, the Department is able to provide limited technical assistance to the ATACs.

Part III

Challenges for Colorado's Emergency Medical and Trauma Services System

Merge State Emergency Medical Services Council and the State Trauma Advisory Council

The Trauma System Act of 1995 requires merging of the EMS and Trauma Advisory Councils. Council and Stakeholders have a preferred council structure and legislation will be introduced to affect the merger of the two councils during the 2000 legislative session.

Merger of the Regional EMS Councils and the Area Trauma Advisory Councils

The Trauma System Act of 1995 required counties to create Area Trauma Advisory Councils (ATACs) who have the responsibility to create area plans for trauma systems. Sixteen ATACs were developed by the county commissioners and each submitted their first area trauma system plans in 1998. Over the last five years the Department, in coordination with the EMS Advisory Council, has been encouraging the development of Regional EMS Councils with the responsibility to coordinate and develop a regional plan for the delivery of emergency medical services. Both regional EMS and area trauma councils have been focusing on many of the same system development issues over the last two years. ATAC membership as currently defined in statute limits participation of prehospital providers. In some parts of the state, this limitation has resulted in little coordination and inefficiencies in the utilization of limited resources. The Department is working with the community to best define how a merger of these councils could be accomplished and will be identifying statutory changes which need to be made to merge these council activities.

Creation of a Designation Level for Rural Health Care Facilities

In response to new federal policy changes and the identification of a role in the trauma system for rural health care facilities and isolated community clinics, legislation creating a Level V trauma center designation will be introduced in this next legislative session. The Health Care Finance Administration has recognized the importance of maintaining rural community access to health care services and has created a new reimbursement program and category titled "Critical Access Hospital." Trauma program staff are working with local authorities to implement the state licensing program which will allow rural hospitals (some of whom are currently Level IV Trauma Centers) to convert their licensure from a general to a critical access hospital. The federal program provides an allowance for the rural facility to modify staffing levels and hours of operation. To accommodate this new form of licensure and maintain an inclusive trauma system, a new level of designation is necessary. Additionally, many of the ski areas in the state have clinics which provide initial stabilization, triage and transportation of seriously injured patients. The clinics would like to be recognized for their role in the initial treatment and stabilization of trauma patients. National models utilized in development of the current Level IV trauma center definition and rules are designed to

reflect and recognize a general licensed hospital environment. A Level VI classification will allow the inclusion of these providers and create efficiencies in the program administration.

Criminal History Checks of Emergency Medical Technicians

EMTs often work with incapacitated patients in an unsupervised environment. The Department currently performs background checks using a name search through the Colorado Bureau of Investigation. Recent experiences in Colorado and other states have led the Department to pursue national criminal history checks of all emergency medical technicians. Options are being explored including moving this responsibility from the Department to the employer of emergency medical technicians.

Program Funding

As previously stated, the Trauma Program is funded in part by the EMS Account and by fees collected through the trauma center designation process. The Designation Fee is specifically designed to cover the direct and indirect costs associated with the designation of hospitals and other health care facilities as trauma centers. The EMS Account appropriation is statutorily required to allocate 60% of the funds toward the EMS provider grant program, 20% toward the county subsidy program and 20% to the Department for program administration. The Department's appropriations for designation was based upon processing an expected 16 - 17 trauma center applications. As of December 1999, the Trauma Program has processed 63 trauma center applications increasing our administrative workload. Unexpected expenses due to the increase in investigations of complaints filed against EMT's and training programs and in the level of assistance requested by the ATAC's, local EMS Agencies, and Regional EMS Councils have contributed to an increase in operating expenses. Furthermore, many other components of the trauma system have not been implemented due to a lack of resources. The combined annual expenses of the Trauma Program and the Prehospital Care Program exceed annual revenue and a portion of each year's costs are funded from a previously existing fund balance. This fund balance will eventually be depleted. Projections show current operating expenses for both Trauma and Prehospital Care programs could be in excess of the statutorily imposed limit on the level of the "administrative" appropriation as early as July 2000. The Department has been evaluating it's priorities and options for partial or full system implementation. Several funding issues, including those mentioned above, have been identified. The Department is developing solutions which may or may not require legislative action.

Colorado State Advisory Council on Emergency Medical Services

December 1999

City	Appointed Member	Representing
Denver	David Sullivan Chairperson	Planning and Management Region 3
Denver	Ira Jerry Rhodes Vice-Chairperson	Fire Chief involved in EMS
Greeley	Karl B. Gills	Hospital Administrators
Wheat Ridge	Arthur Kanowitz, M.D.,F.A.C.E.P.	Medical Doctors involved in EMS
Ft. Morgan	Phyllis A. Gertge	Planning and Management Region 1
Greeley	Mark D. Johnson	Planning and Management Region 2
Colorado Springs	Bill Mayfield	Planning and Management Region4 Registered Professional Nurses involved in EMS
Limon	Mark A. Morrison	Planning and Management Region 5
Springfield	Rick G. Hartley	Planning and Management Region 6
Pueblo	D. Randy Kuykendall	Planning and Management Region 7
Alamosa	Rodney Kent King	Planning and Management Region 8 Volunteer Ambulance Services
Durango	Dan Noonan	Planning and Management Region 9
Montrose	Mark D. Young	Planning and Management Region 10 Search & Rescue
Grand Junction	F. Channing Clymer	Planning and Management Region 11
Yampa	Roberta J. Vetter	Planning and Management Region 12 Volunteer Ambulance Services
	vacant	Planning and Management Region 13
	vacant	Planning and Management Region 14

City	Ex-Officio Member	Representing
Denver	Michael Armacost	Colorado Department of Public Health and Environment
Golden	Mike Reddy	Office of Emergency Management
Denver	George Atencio II	Colorado Department of Transportation
Denver	Christopher Colwell, M.D.	University of Colorado, Health Sciences Center

City	Medical Director	Representing
Denver	Ben Honigman, M.D., F.A.C.E.P.	Colorado Department of Public Health and Environment

Chairperson	Committee
Mark Young	Communications/Transportation
Mike Reddy	Disaster/Multi Casualty
Mark Johnson	Personnel/Public Information/Staffing
Bill Mayfield	Public Information/Trauma Education/Resources
David Sullivan	Regulation/Trauma/Facilities
Ira Jerry Rhodes	Resource Management/Evaluation

Colorado State Trauma Advisory Council

December 1999

City	Appointed Member	Representing
Grand Junction	Francis M. Raley, M.D. Chairperson	Emergency Medical Physicians involved in Prehospital Care
Denver	F. Keith Battan, M.D., F.A.A.P. Vice Chairperson	Emergency Medical Physicians Board-Certified in Pediatrics
Steamboat Springs	Daniel R. Ellison	County Government
Colorado Springs	Jack Dillon, M.D., F.A.C.E.P.	Emergency Medical Physicians involved in Prehospital Care
Lamar	Earl J. Steinhoff	Hospital Administrators - Rural
Englewood	Mary White	Hospital Administrators - Urban
Durango	Julie A. Cooley	The Public
Denver	John S. Nichols, M.D., Ph.D.	Surgeons involved in Trauma Care
Denver	Ernest E. Moore, Jr., M.D.,F.A.C.S.,F.C.C.M.,F.A.C.N.	Surgeons involved in Trauma Care & Surgeons Providing Trauma Care at Level I Facility
Pueblo	Dorothy Crump, R.N., B.S., B.S.N.	Trauma Nurse Coordinators
Denver	Ray A. Coniglio, R.N.,M.S.N.	Trauma Nurses

City	Ex-Officio Member	Representing
Denver	Gail Finley Rarey	Colorado Department of Public Health and Environment
Denver	Larry Brooks	Division of Telecommunications
Denver	David Sullivan	EMS Council
Denver	Amy Martin, M.D.	State Coroner's Association

City	Medical Director	Representing
Denver	Ben Honigman, M.D.,F.A.C.E.P.	EMS Council Trauma Council

Chairperson	Committee
Ernest E. Moore, Jr., M.D.,F.A.C.S.,F.C.C.M.,F.A.C.N.	Facilities
Ray A. Coniglio, R.N.,M.S.N.	Data
vacant	ATAC
Julie Cooley	Public Policy

Joint Council of the Colorado State Advisory Council on Emergency Medical Services and the Colorado State Trauma Advisory Council

December 1999

City	Appointed Member	Representing
Wheat Ridge	Arthur Kanowitz. M.D.,F.A.C.E.P.	EMS Council
Denver	David Sullivan	EMS Council
Yampa	Roberta J. Vetter	EMS Council
Denver	Ernest E. Moore, Jr., M.D.,F.A.C.S.,F.C.C.M.,F.A.C.N.	Trauma Council
Colorado Springs	Jack Dillon,M.D.,F.A.C.E.P.	Trauma Council
Durango	Julie A. Cooley	Trauma Council

City	Ex-Officio Member	Representing
Denver	Michael Armacost	EMS Council
Denver	Gail Finley Rarey	Trauma Council

City	Medical Director	Representing
Denver	Ben Honigman, M.D., F.A.C.E.P.	EMS Council Trauma Council

Medical Advisory Group to Pre-Hospital Care Program

December 1999

City	Medical Advisor
Steamboat Springs	David Conni, M.D.,F.A.C.E.P. PO Box 770520 Steamboat Springs, Colorado 80477
Colorado Springs	Marilyn J. Gifford, M.D. 1400 East Boulder Street Colorado Springs, Colorado 80909
Fort Collins	John A. Collins, M.D. ,F.A.C.S. 1148 East Elizabeth Fort Collins, Colorado 80524
Denver	Peter T. Pons, M.D. 777 Bannock Street Denver, Colorado 80204
Englewood	Eugune Eby, M.D 6005 South Chester Way Englewood, Colorado 80110
Denver	Timothy Zimmerman, EMT-P 2624 South Raleigh Street Denver, Colorado 80219
Salida	Randall Rodak, DO P.O. Box 429 Salida, Colorado 81201
Durango	Dan Noonan 44301 US Highway 550 Durango, Colorado 81301

Appendices

Emergency Medical Services Grant Awards
Fiscal Year 1999-2000

Applicant	County	Funds Awarded	Type of Grant Awarded
Bennett Fire/Rescue	Adams	$33,000	Emergency Vehicle
Trinidad State Junior College - Valley	Alamosa	24,480	Training
Monte Vista Community Ambulance	Alamosa	2,625	Other-Data Collection, QA
Alamosa Ambulance	Alamosa	2,547	Other-Data Collection, QA
Costilla County Ambulance	Alamosa	5,000	Other-Data Collection, QA
Center Fire Protection District (FPD)	Alamosa	7,070	Other-Data Collection, QA
City of Glendale	Arapahoe	3,000	Training
Aurora Fire District (FD)	Arapahoe	6,050	EMS Equipment
Cherry Creek State Park	Arapahoe	3,900	EMS Equipment
Sheridan FD	Arapahoe	11,317	EMS Equipment
Springfield EMS Association	Baca	10,000	Training
Bent County	Bent	2,670	Training & EMS Equipment
Nederland FPD	Boulder	37,000	Emergency Vehicle
Lefthand Canyon FPD	Boulder	4,284	Communications
Chaffee County	Chaffee	55,885	Emergency Vehicle
Clear Creek County Ambulance	Clear Creek	16,018	Communications
Alpine Search & Rescue	Clear Creek	2,162	Training & EMS Equipment
Custer County Ambulance	Custer	16,500	Training & EMS Equipment
North Fork Ambulance	Delta	4,730	Communications
Delta Montrose Votech	Delta	14,260	Training & EMS Equipment
Delta County Ambulance District	Delta	45,910	Emergency Vehicle
Denver Health Medical Center	Denver	16,500	Training & EMS Equipment
Franktown FPD	Douglas	10,500	Training & EMS Equipment
Jackson 105 FPD	Douglas	4,286	EMS Equipment
Palmer Lake Fire	El Paso	4,750	EMS Equipment
City of Fountain FD	El Paso	9,150	Training & EMS Equipment
Black Forest FD	El Paso	16,450	Training & EMS Equipment
Kiowa County Ambulance	Elbert	1,832	EMS Equipment
Penrose Volunteer FD	Fremont	38,050	Emergency Vehicle
New Castle Ambulance	Garfield	2,144	EMS Equipment
Town of Silt	Garfield	2,520	Training
Central City Volunteer FD	Gilpin	16,170	EMS Equipment
Grand County Search & Rescue	Grand	3,004	EMS Equipment
Huerfano Co (Ambulance)	Huerfano	28,621	Emergency Vehicle
North Park Hosp District	Jackson	6,950	Training & EMS Equipment
Jefferson County	Jefferson	145,000	Communications
Kit Carson Ambulance	Kit Carson	22,509	Emergency Vehicle
LaPlata County EMS Council	LaPlata	103,645	Communications
Poudre Valley Hospital	Larimer	39,019	Emergency Vehicle
Livermore FPD	Larimer	37,000	Emergency Vehicle
Park Hospital District	Larimer	31,391	Emergency Vehicle
Front Range Community College	Larimer	4,844	Training & EMS Equipment
Crook FPD	Logan	6,053	EMS Equipment
Northeast Junior College	Logan	16,326	Training
Sterling Rural FPD	Logan	23,962	EMS Equipment
St. Mary's Hospital	Mesa	24,261	Training & EMS Equipment
Lower Valley FPD	Mesa	4,978	EMS Equipment

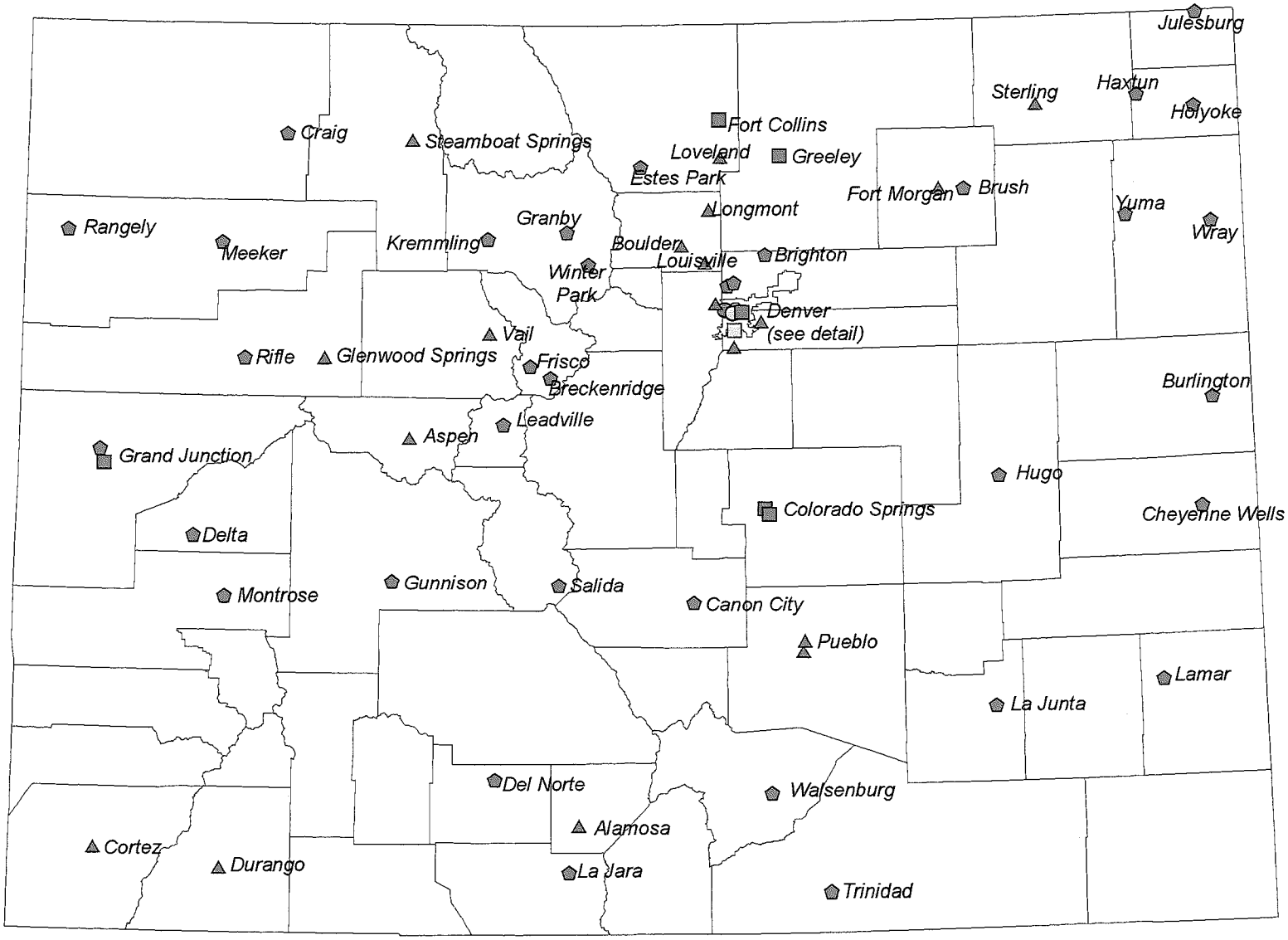
Emergency Medical Services Grant Awards
Fiscal Year 1999-2000

Applicant	County	Funds Awarded	Type of Grant Awarded
Clifton FPD	Mesa	33,000	Emergency Vehicle
Plateau Valley FPD	Mesa	8,800	EMS Equipment
Glade Park Volunteer FD	Mesa	4,840	Training & EMS Equipment
Artesia FPD	Moffat	2,694	EMS Equipment
The Memorial Hospital	Moffat	37,000	Emergency Vehicle
Dolores FPD	Montezuma	17,554	EMS Equipment
Lewis Arriola FPD	Montezuma	782	EMS Equipment
Cortez FPD	Montezuma	1,213	EMS Equipment
Montrose FPD	Montrose	20,695	Emergency Vehicle
Hillrose FPD	Morgan	17,874	EMS Equipment
Fowler Rural Fire	Otero	33,000	Emergency Vehicle
Jefferson-Como FPD	Park	1,038	EMS Equipment
Phillips County	Phillips	33,000	Emergency Vehicle
Pitkin County FBO Aspen Ambulance	Pitkin	17,174	EMS Equipment
Pitkin County Sheriff's Office	Pitkin	32,004	EMS Equipment
Basalt & Rural FPD	Pitkin	38,000	Emergency Vehicle & Training
Lamar Ambulance Service	Prowers	12,000	EMS Equipment
Red Creek Volunteer Fire	Pueblo	16,304	Communications
High Plains EMS Council	Regional	29,709	Training & EMS Equipment
San Juan Basis Votech	Regional	48,175	Training
SWEMS	Regional	12,480	Training
Morgan Community College	Regional	28,753	Training
W-Y, Inc.	Regional	4,550	Training & EMS Equipment
Rio Blanco FPD	Rio Blanco	6,000	EMS Equipment
Steamboat Springs Rural FPD	Routt	8,377	EMS Equipment
Norwood FPD	San Miguel	1,500	EMS Equipment
San Miguel County	San Miguel	25,815	Training & EMS Equipment
Sedgwick County Ambulance	Sedgwick	2,300	Training & EMS Equipment
Woodland Park Ambulance	Teller	4,200	EMS Equipment
Mountain Communities FPD	Teller	1,808	EMS Equipment
Northeast Teller FPD	Teller	2,239	EMS Equipment
High Country EMS	Teller	48,539	Emergency Vehicle
Divide Volunteer FD	Teller	6,015	EMS Equipment
Florissant Fire	Teller	919	EMS Equipment
Southeast Teller EMS	Teller	40,850	Emergency Vehicle
Hinsdale County EMS	West Region	26,800	Emergency Vehicle
Frederick Area FPD	Weld	3,744	EMS Equipment
Tri-Area Ambulance District	Weld	1,460	EMS Equipment
Idalia Ambulance	Yuma	2,630	Training & EMS Equipment
South YW Ambulance	Yuma	34,902	Emergency Vehicle
Wray Ambulance	Yuma	9,401	EMS Equipment
Wray FD	Yuma	2,972	EMS Equipment
Yuma Ambulance	Yuma	27,000	Emergency Vehicle

Emergency Medical Services Grant Awards
Fiscal Year 1999-2000

Applicant	County	Funds Awarded	Type of Grant Awarded
Systems Development Grants			
High Plains EMS Council	Regional	56,075	EMS Regional Development
Northwest EMS Region	Regional	67,794	EMS Regional Development
Western EMS Region	Regional	101,590	EMS Regional Development
San Luis Valley Region	Regional	15,000	EMS Regional Development
Recruitment & Retention Grants			
San Luis Valley Regional Medical Ctr.	Alamosa	4,289	Recruitment & Retention
Cherryvale FPD	Boulder	700	Recruitment & Retention
Coal Creek Canyon FPD	Boulder	1,500	Recruitment & Retention
Black Forest FPD	El Paso	2,535	Recruitment & Retention
North Central FPD	Elbert	1,500	Recruitment & Retention
North Park Hospital District	Jackson	5,000	Recruitment & Retention
City of Lamar Fire & Ambulance	Prowers	1,500	Recruitment & Retention
San Miguel County	San Miguel	2,635	Recruitment & Retention
Woodland Park Ambulance Services	Teller	1,500	Recruitment & Retention
Emergency Grants			
Gunnison Valley Hospital	Gunnison	6,500	Emergency Vehicle Replacement
Lincoln Community Hospital	Lincoln	1,800	Emergency Vehicle Repair
Rico FPD	Dolores	2,028	Communications

Colorado Designated Trauma Centers



Trauma centers
- RPTC (1)
- Level I (1)
- Level I/P (1)
- Level II (6)
- Level II/P(1)
- Level III (18)
- Level IV (35)
- Counties

NOTE: Numbers in parentheses represent the total number of facilities for each trauma designation in Colorado.

Appendix B.1

October 29, 1999

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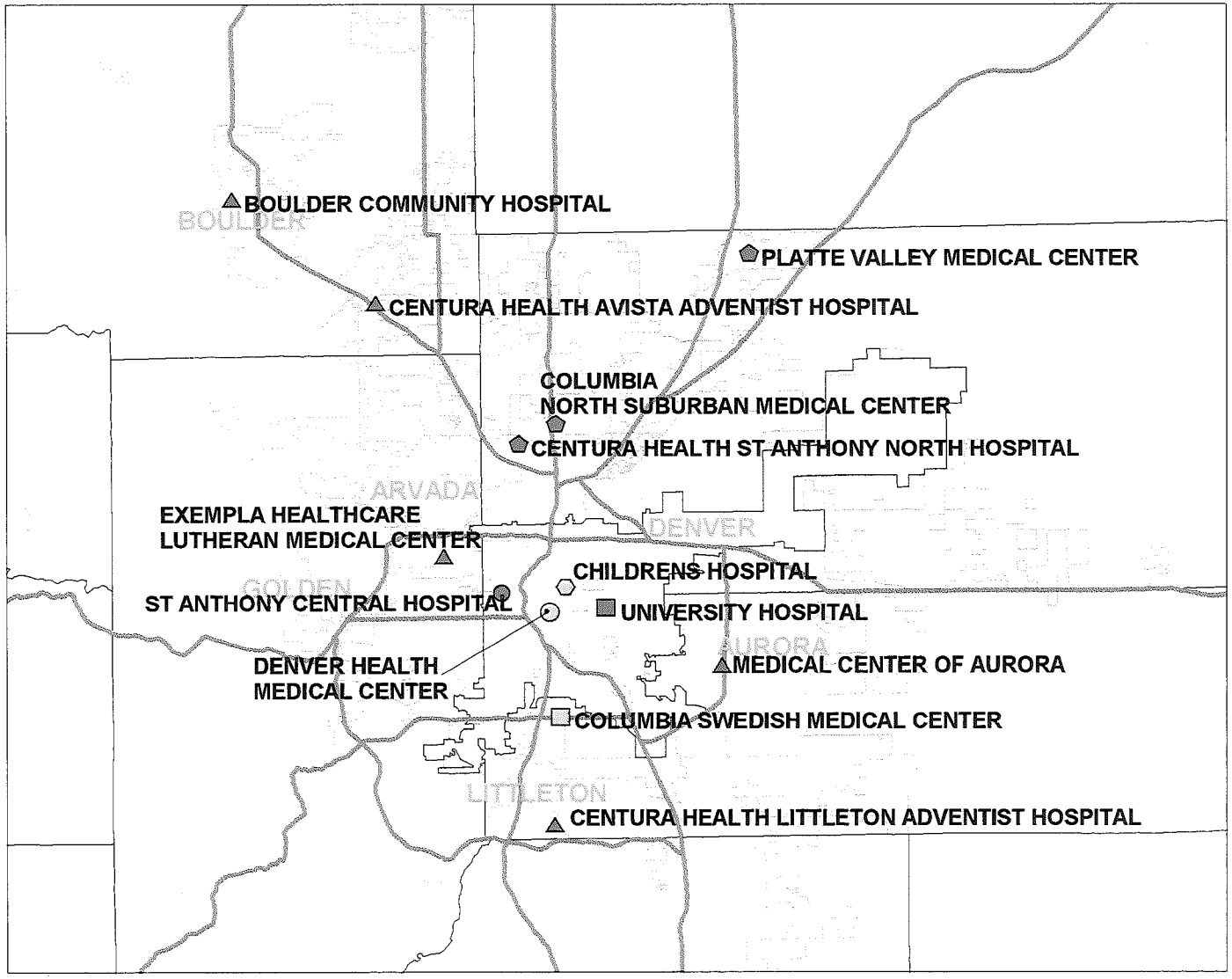
Colorado Department of Public Health and Environment

Denver Metropolitan Area
Designated Trauma Centers



Trauma centers

RPTC	(1)
Level I	(1)
Level I/P	(1)
Level II	(6)
Level II/P	(1)
Level III	(18)
Level IV	(35)
Highways	
Counties	
Cities	

NOTE: Numbers in parentheses represent the total number of facilities for each trauma designation in Colorado.

Colorado Department of Public Health and Environment

October 29, 1999

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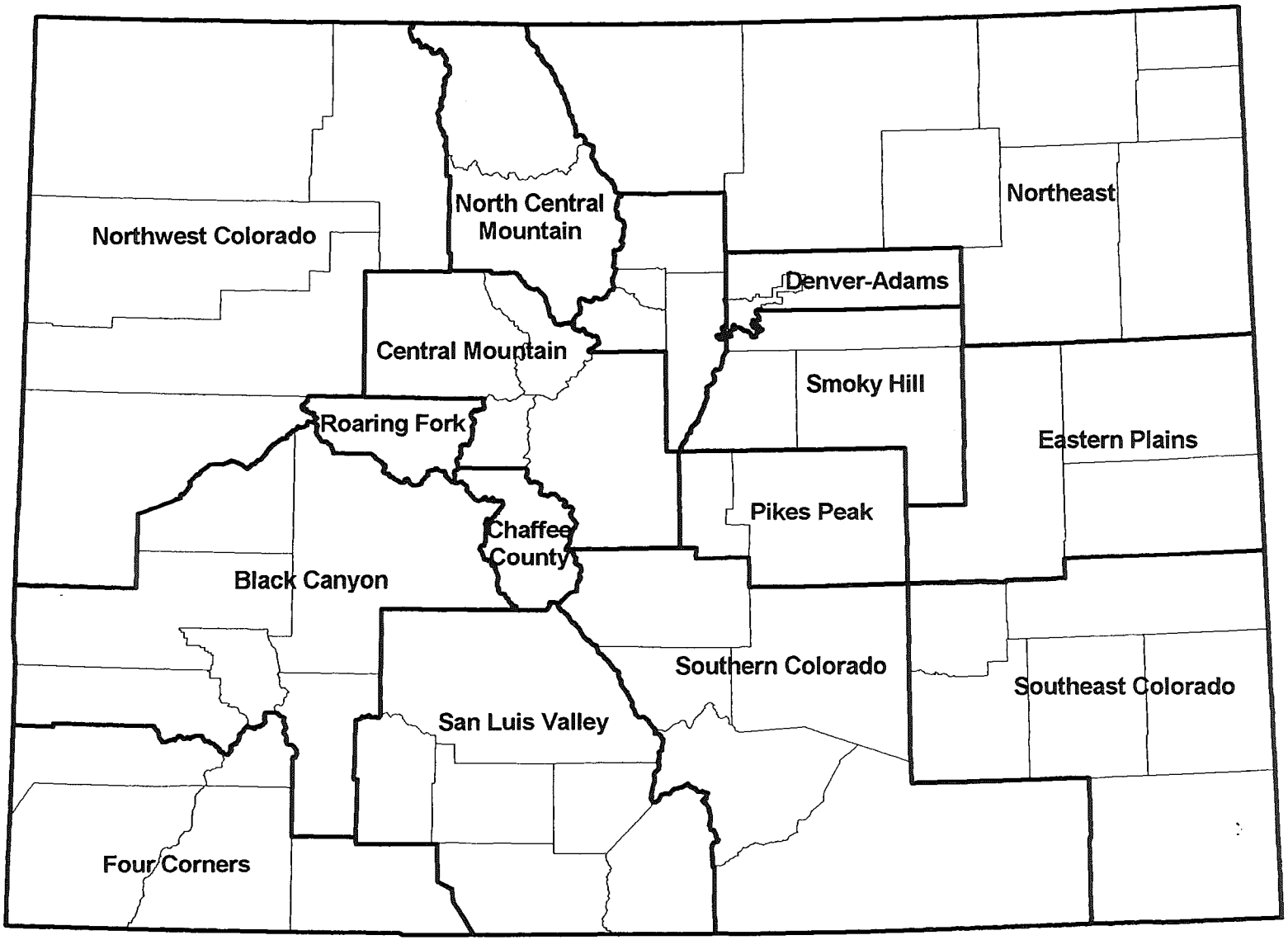
Appendix B.2

Colorado Area Trauma Advisory Councils



Appendix B.3

Colorado Department of Public Health and Environment

October 29, 1999

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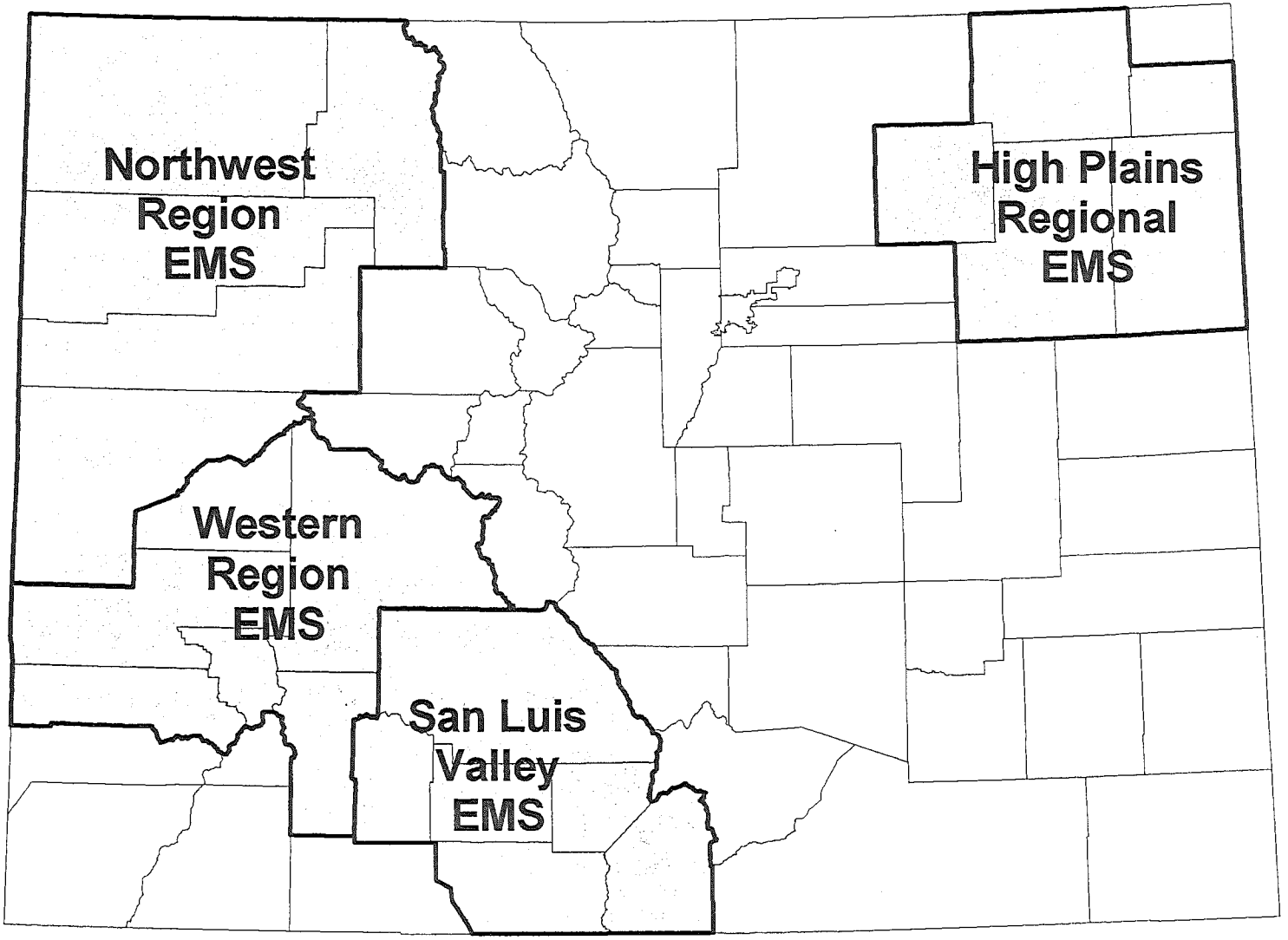
Colorado EMS Regions



Appendix B.4

Colorado Department of Public Health and Environment

October 29, 1999

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Area Trauma Advisory Councils

December 1999

ATAC	Chairperson
Black Canyon	Lynda Wallin, R.N.,B.S.N.,M.A.,C.E.N. PO Box 10100 Delta, Colorado 81416
Central Mountain	John Woodland, M.D. 181 West Meadow Drive Vail, Colorado 81657
Chaffee County	Dean Turner 448 East First Street Salida, Colorado 81201
Denver-Adams	John Burch, M.D. 777 Bannock Street Denver, Colorado 80204
Eastern Plains	Sue Kern P.O. Box 578 Cheyenne Wells, Colorado 80810
Foothills	Peter Velman, M.D. 4231 West 16th Avenue Denver, Colorado 80204
Four Corners	David Deaver, M.D. 375 East Park Avenue Durango, Colorado 81301
North Central Mountain	Linda Underbrink, R.N. PO Box 924 Kremmling, Colorado 80459
Northeast	Jody Kramer 1017 West 7th Street Wray, Colorado 80758
Northwest Colorado	Randy Phelps 785 Russel Street Craig, Colorado 81625
Pikes Peak	Gordan Hildebrant PO Box 7021 Colorado Springs, Colorado 80933
Roaring Fork Valley	William Rodmen, M.D. 0401 Castle Creek Road Aspen, Colorado 81611
San Luis Valley	Bill Binnian PO Box 212 Blanca, Colorado 81123
Smoky Hill	Jim Raymond 4000 Justice Way, Suite 3636 Castle Rock, Colorado 80104
Southeast Colorado	Marsu Nolan, M.D. 1100 Carson Avenue La Junta, Colorado 81050
Southern Colorado	Janna Deason, R.N. 1008 Minnequa Avenue Pueblo, Colorado 81004

Colorado Designated Trauma Centers

December 1999

Level	Facility Name	Location	ATAC
I	Centura Health - Saint Anthony Central Hospital	Denver	Denver-Adams
I/P	Denver Health Medical Center	Denver	Denver-Adams
RPTC	The Children's Hospital	Denver	Denver-Adams
II	Centura Health - Penrose St. Francis Health Services	Colorado Springs	Pikes Peak
II	Memorial Hospital	Colorado Springs	Pikes Peak
II	North Colorado Medical Center	Greeley	Northeast
II	Poudre Valley Hospital	Fort Collins	Northeast
II	Saint Mary's Hospital & Medical Center	Grand Junction	Northwest Colorado
II	University Hospital (UCHSC)	Denver	Denver-Adams
II/P	Columbia Swedish Medical Center	Englewood	Smoky Hill
III	Aspen Valley Hospital	Aspen	Roaring Fork Valley
III	Boulder Community Hospital	Boulder	Foothills
III	Centura Health - Avista Adventist Hospital	Louisville	Foothills
III	Centura Health - Littleton Adventist Hospital	Littleton	Smoky Hill
III	Centura Health - St. Mary Corwin Medical Center	Pueblo	Southern Colorado
III	Colorado Plains Medical Center	Fort Morgan	Northeast
III	Exempla Healthcare/Lutheran Medical Center	Wheat Ridge	Foothills
III	Longmont United Hospital	Longmont	Foothills
III	McKee Medical Center	Loveland	Northeast
III	Medical Center of Aurora	Aurora	Smoky Hill
III	Mercy Medical Center of Durango	Durango	Four Corners
III	Parkview Episcopal Medical Center	Pueblo	Southern Colorado
III	Routt Memorial Hospital	Steamboat Springs	Northwest Colorado
III	San Luis Valley Regional Medical Center	Alamosa	San Luis Valley
III	Southwest Health System	Cortez	Four Corners
III	Sterling Regional MedCenter	Sterling	Northeast
III	Vail Valley Medical Center	Vail	Central Mountain
III	Valley View Hospital	Glenwood Springs	Northwest Colorado
IV	7 Mile Medical Clinic	Winter Park	North Central Mountain
IV	Arkansas Valley Regional Medical Center	La Junta	Southeast Colorado
IV	Breckenridge Medical Center	Breckenridge	Central Mountain
IV	Centura Health - Granby Medical Center	Granby	North Central Mountain
IV	Centura Health - St. Anthony North Hospital	Westminster	Denver-Adams
IV	Centura Health - St. Thomas Moore	Canyon City	Southern Colorado
IV	Centura Health - Summit Medical Center	Frisco	Central Mountain
IV	Clagget Memorial Hospital	Rifle	Northwest Colorado
IV	Columbia North Suburban Medical Center	Thornton	Denver-Adams
IV	Community Hospital	Grand Junction	Northwest Colorado

Colorado Designated Trauma Centers

December 1999

Level	Facility Name	Location	ATAC
IV	Conejos County Hospital	La Jara	San Luis Valley
IV	Delta County Memorial Hospital	Delta	Black Canyon
IV	East Morgan County Hospital	Brush	Northeast
IV	Estes Park Medical Center	Estes Park	Northeast
IV	Gunnison Valley Hospital	Gunnison	Black Canyon
IV	Haxtun Hospital District	Haxtun	Northeast
IV	Heart of the Rockies Regional Medical Center	Salida	Chaffee County
IV	Huerfano Medical Center	Walsenberg	Southern Colorado
IV	Keefe Memorial Hospital	Cheyenne Wells	Eastern Plains
IV	Kit Carson County Memorial Hospital	Burlington	Eastern Plains
IV	Kremmling Memorial Hospital District	Kremmling	North Central Mountain
IV	Lincoln Community Hospital	Hugo	Eastern Plains
IV	Melissa Memorial Hospital	Holyoke	Northeast
IV	Montrose Memorial Hospital	Montrose	Black Canyon
IV	Mt. San Rafael Hospital	Trinidad	Southern Colorado
IV	Pioneers Hospital of Rio Blanco	Meeker	Northwest Colorado
IV	Platte Valley Medical Center	Brighton	Denver-Adams
IV	Prowers Medical Center	Lamar	Southeast Colorado
IV	Rangely District Hospital	Rangely	Northwest Colorado
IV	Rio Grande Hospital	Del Norte	San Luis Valley
IV	Sedgwick County Hospital	Julesburg	Northeast
IV	St. Vincent General Hospital District	Leadville	Central Mountain
IV	The Memorial Hospital	Craig	Northwest Colorado
IV	Wray Community District Hospital	Wray	Northeast
IV	Yuma District Hospital	Yuma	Northeast