Emergency Medical & Trauma Services System Consultative Visit

COLORADO
Health Facilities & Emergency Medical Services Division
Department of Public Health & Environment

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COLORADO
Department of Public Health & Environment

Dedicated to protecting and improving the health and environment of the people of Colorado

June 17, 2024

Julie Ramstetter, Council Chair
San Luis Valley Regional Emergency Medical and Trauma Advisory Council
8900 Independence Way
Alamosa, CO 81101

Dear Chair Ramstetter,

On behalf of the Colorado Department of Public Health and Environment, we are attaching the Consultative Visit report on the Emergency Medical and Trauma Services System in the San Luis Valley. Pursuant to your invitation and support of this project, a group of consultants worked under the general coordination of the department to review the current status of the Emergency Medical and Trauma Services System throughout the San Luis Valley. The San Luis Valley RETAC and your stakeholder community are to be commended for the dedication and foresight demonstrated by undertaking this important activity. We hope this report will make clear what is currently working well, where improvements may be needed and what can be done to improve your entire Emergency Medical and Trauma Services System, with a focus on quality patient care.

The department is pleased to have provided the funding for this project and wishes to thank the San Luis Valley RETAC for its willingness to provide additional resources and support toward this effort. With the understanding that Colorado statute vests each county with the authority to develop, design and implement local Emergency Medical Services systems; the Consultative Visit report is intended to provide insight and information from which the RETAC Board, Boards of County Commissioners, and local emergency medical and trauma services providers can make the policy decisions necessary to support the development of improved services to patients throughout your region. The report itself was authored by members of a contracted review team and represents their perspectives and recommendations. Understanding that the department has limited regulatory authority regarding service agencies that provide prehospital care and transportation, this report nonetheless represents our commitment to work with local governments to ensure quality health care for all Coloradans.

As the agencies and counties that make up the San Luis Valley region consider the next steps, our office stands ready be of further assistance. Please reach out and we will work to assist in any way we can.

Respectfully,

Peter Myers

Peter Meyers
Deputy Director
Health Facilities & Emergency Medical Services Division
Colorado Department of Public Health and Environment

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Introduction and Overview

The purpose of the Emergency Medical and Trauma Services consultative visit is to provide a comprehensive overview and analysis of the local emergency medical and trauma system from an external perspective, to assist community leadership in identifying strengths and weaknesses of the local EMS and trauma system. This assessment comes as a request from the community leaders or RETAC to the Colorado Department of Public Health and Environment, Emergency Medical and Trauma Services Branch. It is funded by the department's EMTS grant funding for system improvement. The contents of the report are based on components from the 1996 "EMS Agenda for the Future", published by the National Highway Transportation Safety Administration. The consultative visit team is composed of subject matter experts jointly selected by the requestor and the department. The team members are leaders in the EMS and trauma system from across Colorado brought together to interview local stakeholders and develop this collaborative report that can then be used by the local stakeholders as a basis for future policy decisions about the EMS and trauma system.

Glossary:

AEMT: Advanced Emergency Medical Technician - The AEMT is a health professional whose primary focus is to respond to, assess and triage non-urgent, urgent, and emergent requests for medical care, apply basic and focused advanced knowledge and skills necessary to provide patient care and/or medical transportation, and facilitate access to a higher level of care. The AEMT has all the skills of an EMT and can also conduct limited advanced and pharmacological interventions, limited invasive procedures, and vaccine administration. Performance of emergency medical acts is authorized by a physician medical director. This certification level allows provision of high-benefit, lower-risk advanced skills.

ALS: Advanced Life Support - Provision of care by a provider licensed or certified as an AEMT, EMT-I, or Paramedic and may include the utilization of additional equipment, procedures and medications.

BLS: Basic Life Support - Provision of care provided at the EMT level. This is the minimal level of care available from an ambulance service. The scope of practice to address immediate life threats and provide transport of a patient to a hospital or other definitive care.

CAAHEP: Commission on Accreditation of Allied Health Education Programs

CoAEMSP: Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions

EMS: Emergency Medical Services - Traditionally, this was agencies and systems of care that provide emergency prehospital care and transport by ambulance. These roles have been expanding to include prevention, community education, community/public health and other areas as communities identify gaps and needs in the healthcare system.

EMS Provider: Any person certified or licensed by the Colorado Department of Public Health and Environment as an EMT, AEMT, EMT-I, or Paramedic.

EMT: Emergency Medical Technician - An EMT is a health professional whose primary focus is to respond to, assess and triage emergent, urgent, and non-urgent requests for medical care, apply basic knowledge and skills necessary to provide patient care and medical transportation to/from an emergency or health care facility. The EMT scope of practice includes

performance of emergency medical acts as authorized by a physician medical director and administration and monitoring of a limited number of medications.

EMT-I: Emergency Medical Technician - Intermediate - The EMT-I has all the skills of AEMT and includes the delivery of narcotic medications and initiation and management of advanced airway procedures. Nationally the EMT-Intermediate level has been sunsetted, but existing EMS providers can continue to practice. This advanced level of EMS provider must maintain Advanced Cardiac Life Support certification. EMT-Is are trained to form a clinical impression of a patient's condition then initiate and maintain appropriate medical interventions. Performance of emergency medical acts is authorized by a physician medical director.

NREMT: National Registry of Emergency Medical Technicians, established in

Paramedic: Paramedics are the highest EMS provider level in Colorado. Paramedics are allied health professionals trained in advanced patient assessment techniques and interventions. Paramedics provide a broader range of medical procedures and pharmacological interventions. Performance of emergency medical acts is authorized by a physician medical director. Paramedics can have an expanded scope in specific settings by seeking endorsement as a Community Paramedic in a CIHCS or Clinical Settings or as Critical Care Paramedic when authorized.

PSAP: Public Service Answering Points are the call centers where public 9-1-1 calls are routed.

RETAC: Regional Emergency Medical and Trauma Services Council - Created by statutory authority, each council consists of five or more participating counties. There are 11 RETACs in Colorado; each is responsible for creating and implementing a plan for delivering emergency medical and trauma care in the region.

Regional Summary and Demographics

The San Luis Valley and the RETAC encompasses six counties in Colorado: Alamosa, Conejos, Costilla, Mineral, Rio Grande and Saguache. Referred to by the local community as The Valley. The valley and its six counties account for 8,192 square miles, an area larger than the size of the state of Massachusetts. It has a unique mosaic and multicultural history. Originally ancestral lands to several indigenous communities including the Arapahoe, Cheyenne, Comanche, Jicarilla-Apache, Kiowa, Pueblo, Ute and Navajo people. Many of these communities maintain a strong cultural and spiritual connection to important sites and gathering areas in the region. This land was later claimed by Spain and Mexico until the end of the Mexican-American War when it was annexed by the United States who settled the former Mexican Land Grants, establishing the town of San Luis in 1851, the first town still occupied in what would later become Colorado. Further settlement came when the Denver & Rio Grande Railroad established Alamosa in 1878, developing the valley as an agricultural community serving many Colorado mining communities. This growth continued until the 1930s when the Great Depression and crop failures led to a decline that forced thousands to move elsewhere. Recovery during the U.S. New Deal helped to improve infrastructure in the valley, but the region remains one of the most impoverished in Colorado.

The Denver & Rio Grande depot in Alamosa closed in the 1950s due to increased development of the U.S. highway system and a shift in transportation. Currently, two major U.S. highways transverse the San Luis Valley. U.S. Route 160 runs east-west connecting Alamosa, Monte

Vista, Del Norte and South Fork. U.S. Route 285 enters the valley on the northern edge at Poncha Pass connecting Villa Grove, Saguache, Monte Vista, Alamosa and Antonito before continuing into New Mexico. Colorado State Highways 17, 114, and 149 provide access to many surrounding communities and are crucial arteries for transportation in the region. Finally, Colorado Highway 150 provides primary access to the Great Sand Dunes National Park. In 2021, the National Park Service reported a peak of over 600,000 visitors to the park, and overall the number of visitors to the park has increased from pre-pandemic levels by nearly 4% per year. The National Park Service reported in 2022 that the park brought $36 million in economic output into the local economies. Recreation is one of the steadily growing industries in the region like many other parts of the state. The valley is the gateway to the Rio Grande National Forest, surrounded on the west by the San Juan Mountain range and on the east by the San de Cristo Mountain range, which includes several 14,000-foot peaks. The Colorado Demography Office reports that the leading sectors of employment are governmental, agricultural, healthcare and tourism, in rank order. Additionally, 15% of the population is reported as retired and over 9% indicate that their primary household income is from public assistance. The population size of the region in 2022 was 46,637 residents, and has been relatively unchanged since the 2000 census. According to U.S. Census data the median household income for the San Luis Valley was $52,109. Depending on the county of residence between 8.7% and 23.2% of households are experiencing poverty at or below federal levels and 10-15% of people under the age of 65 do not have health insurance. Additionally, data from the American Community survey estimates that 20-36% of households, in 5 of the 6 counties in the San Luis Valley, indicate that a language other than English is spoken at home.

Emergency Medical and Trauma Service Providers

Medical Facilities

The San Luis Valley Regional Emergency Medical and Trauma Services Advisory Council (RETAC), comprises agencies from Alamosa, Conejos, Costilla, Mineral, Rio Grande, and Saguache Counties. The RETAC has three hospitals:

- San Luis Valley Regional Medical Center, a 49-bed Level III Trauma Center
- Conejos County Hospital, a 17-bed critical access hospital and Level IV Trauma Center
- Rio Grande Hospital, a 17-bed critical access hospital and Level IV Trauma Center

The Valley also has several clinics and community health centers. The hospitals are geographically distant, with nearly 50 miles separating Rio Grande Hospital and Conejos County Hospital, nearly 40 miles between Rio Grande Hospital and San Luis Valley Regional Medical Center, and 16 miles between San Luis Valley Regional Medical Center and Conejos County Hospital. The nearest high-level trauma centers (I or II) are located in Colorado Springs, a minimum two and a half hour drive on dry roads. Complex trauma cases, requiring high-level trauma services or other specialty care not provided in the Valley, are transported by ground ambulance or aeromedical agencies to Pueblo, Colorado Springs, or Denver, and occasionally to facilities in New Mexico.

San Luis Valley Health

San Luis Valley Health includes two hospitals (Regional Medical Center and Conejos County Hospital) as well as multiple clinics:

1) San Luis Valley Regional Medical Center

SLVRMC began as the Alamosa Community Hospital; it moved several times within Alamosa and had many renewal/expansion projects over the years. The hospital is the only full service general hospital in the SLV with (24/7) emergency dept, lab, radiology/imaging service and an ICU. They maintain inpatient units for surgery, medicine and pediatric patients in addition to obstetrics. The hospital is currently designated as a level III trauma center. The ED is staffed with emergency physicians Trauma/surgical services are also available at the Regional Medical center, including three general surgeons and one physician assistant.

The emergency department is staffed by a combination of board and non-board certified emergency physicians. One emergency physician is employed by the health system, and additional coverage is provided by Innova Emergency Medical Associates. Emergency Nurses provide clinical patient care support and oversight for Paramedics and EMTs that work in the ED as well. The hospital operates ambulance service for most of Alamosa County in conjunction with the Alamosa Ambulance District (AAD). Given that EMS providers are employees of the hospital and are credentialed to practice there, EMS providers have ample opportunities to perform procedures that would be otherwise difficult to maintain (endotracheal intubation, etc.). High acuity patients often need to be transferred out of the area for definitive care, and this can present a problem when South Fork's interfacility crew is unavailable. Given needs for 911 response by Alamosa EMS and limited availability to perform long distance interfacility transfers, this can lead to delays in transfer out of patients.

2) Conejos County Hospital

Conejos County Hospital (CCH) is a Level (IV) Trauma Center in La Jara, Colorado. This is a 17 bed hospital that is within the southern end of the SLV. The ED cares for about 3000 patients per year, they have 4 physicians covering the ED. Currently, the ED providers are younger and several are EM residency trained. They are a low volume, high acuity ED which necessitates relatively frequent transfer of critically ill/injured patients to a higher level of care. Unlike the Regional Medical Center to the north, Conejos County Hospital has more barriers to allowing EMS providers to perform skills/procedures in the emergency department.

Rio Grande Hospital

Rio Grande Hospital (RGH) is located in Del Norte, Colorado. The tradition of hospital care at Del Norte goes back to 1907 and the St. Joseph Hospital. In 1993 St. Joseph's closed and in 1996 Rio Grande Hospital in Del Norte reopened at the old hospital site. The new Rio Grande Hospital opened August 11th, 2004 on County road in Del Norte, Colorado. RGH provides emergency care, laboratory services, X-ray & CT evaluations and impatient care on a 24/7 basis. It is a designated Level (IV) trauma center with an FAA approved helicopter landing pad on site for transfers out to higher level centers when necessary. There are 5 beds available, but surge capacity exists up to 9 patients if patient volumes would dictate this need. There is fixed wing transport available from Monte Vista Municipal Airport Patients are transferred to Front Range hospitals, including hospitals in Denver, Colorado Springs, and Pueblo.

Our evaluation team met with Dr. Patrick Thompson, who practices and provides emergency physician services at the Rio Grande Hospital and provides medical direction for agencies in the San Luis Valley. Dr. Thompson has a significant history with EMS in the SLV and is engaged with the providers on an oversight and instructional level.

There was concern regarding availability of appropriate crew members for interfacility transfers out of the facility. Given limited EMS resources, particularly advanced life support and critical care trained providers, there have been many occasions where patients had delayed transfers out to higher levels of care (both within the San Luis Valley and to the front range).

Additionally, given the wide geographic area served with multiple counties and EMS agencies, the hospital sometimes has difficulties with radio communications and hearing radio transmissions, both receiving radio transmissions and hearing pages go out. This is due to multiple ambulance service areas providing transport to Rio Grande as a receiving facility as well as the geographic and topographic factors that limit radio transmissions in the San Luis Valley. The hospital has explored options to remedy this situation, unfortunately these options were costly.

There are a number of clinics within the Rio Grande Hospital system to support patients, including a clinic in Del Norte, Monte Vista and South Fork

The clinic in Del Norte provides primary care and women's health services, as well as telemedicine services. The clinic is open Monday-Friday.

The clinic in Monte Vista provides primary care services. The clinic is open Monday-Friday. This location also provides pharmacy services and provides a drive up window for patients.

The clinic in South Fork is a recent addition to the system, completed in 2022. This clinic provides primary care services. The clinic is open Monday-Friday. This clinic also provides pharmacy services.

The clinic in Creede provides primary care services, as well as limited plain film X-Ray services for patients. The clinic is open Monday-Friday.

Emergency Medical Services Agencies

The San Luis Valley and its residents are served by 10 licensed EMS transport agencies. Two of these utilize paid personnel and the remainder are combination or volunteer agencies. They serve over 8,000 square miles of urban, suburban, rural and frontier terrain, with the vast majority being rural and frontier. The agencies in alphabetical order are:

Alamosa County Ambulance District

The Alamosa County Ambulance District operates Alamosa EMS, the largest service in the San Luis Valley RETAC, and represents the vast majority of advanced life support providers in the Valley. Alamosa EMS is a hospital-based professional EMS agency which staffs two ambulances 24 hours a day. Alamosa EMS employs full-time paramedics on staff and as secondary crews on call 24/7. The service runs over 3,500 calls annually, including emergency responses and interfacility transports. When fully staffed, they employ a team of 13 paramedics, one paramedic/RN, two RNs, two full-time EMTs, one part-time EMT, and one part-time critical care paramedic. The team provides services for Alamosa County, and provides Advanced Life Support (ALS) intercept for surrounding agencies who have far fewer ALS providers. The service has four ambulances, with the most recently added in 2013.

The Alamosa County Ambulance District is a Title 32 special district and operates the county ambulance service through a management agreement with the San Luis Valley Health Hospital Organization. The service is funded through a mill levy of 2.884 mills, along with an additional 0.013 mills for refunds and abatements, generating $599,157 for operating revenue for the service. The remainder of the service's funding is from patient billing. Nearly 80% of the agency's EMS patients are Medicare or Medicaid patients.

In addition to field ambulance work, Alamosa EMS provides medical support to police tactical teams across the valley when serving warrants and for SWAT team activations.

Alamosa EMS is dispatched by the Colorado State Patrol-Alamosa Regional Communications Center.

Baca Grande POA

The Baca Grande Property Owners' Association (POA) operates the Baca Grande Ambulance Service. This governance model is quite unique in Colorado, where the POA ensures the ambulance infrastructure. This is a volunteer service that pays its members an on-call stipend and hourly pay for active calls. Baca Grande Ambulance Service runs approximately 150 calls annually, covering 575 square miles with a single ambulance. The service has the ability to provide ALS care with a part-time paramedic but the reliability of ALS services is questionable, resulting in an increasing number of ALS intercepts from neighboring Alamosa EMS. The remainder of the staffing is five EMTs.

Baca Grande Ambulance both provides and relies upon mutual aid from neighboring agencies. The distance from regional hospitals results in an average time-on-task for transport calls of four hours. Neighboring agencies are relied upon to cover any additional calls during these times. The service has a mutual aid agreement with Northern Saguache County Ambulance to cover eastern Saguache County, including Crestone and unincorporated areas of Saguache County, in coordination with the Northern Saguache County Ambulance District. For calls in this area, Northern Saguache County Ambulance reimburses Baca Grande Ambulance $100 per call, for responses in the area outside of the Baca Grande Ambulance response area.

The service is partly funded through the Baca Property Owners Association, which funds equipment and infrastructure. Additional funding comes from patient billing, which is outsourced to a third-party billing service for eight percent of charges.

Baca Grande Ambulance is dispatched by the Colorado State Patrol-Alamosa Regional Communications Center.

Center Fire Protection District

The Center Fire Protection District (CFPD) provides ambulance service to the third most populous area of the Valley. The CFPD was formed in 1941 and covers approximately 207 square miles in Saguache, Rio Grande and Alamosa counties; serving a total population of 3,800. This includes the Town of Center, an agricultural hub and the geographic center of the San Luis Valley. CFPD is a volunteer, fire-based ambulance service run out of a combination staffed fire department, with a total of 13 EMTs, one AEMT and 21 firefighters. The CFPD has a paid-per-call response model and attempts to schedule a primary EMS provider at all times; however, they have had difficulty covering daytime calls and rely on mutual aid when a primary or secondary crew cannot be mustered. The district utilizes a novel system that pays the first EMS provider to answer a page $125 for the call while the second to answer receives $75 and the third member $50. Members are required to cover 24 hours of scheduled call time per month. Nights and weekends are mostly able to be covered. The CFPD maintains a fleet of two ambulances and is dispatched by the Center Police Department, making them one of a handful of services not dispatched by the Colorado State Patrol – Alamosa. Calls are initially received by Colorado State Patrol-Alamosa Regional Communications Center, which initially pages out responding agencies and then transfers dispatching and post-dispatch communications to the Center Police Department. EMS run reporting is done through the free CDPHE version of the ImageTrend reporting system.

The CFPD is funded through a special tax district that collects a 6.924 mill property tax. Of this, 3.00 mills are dedicated to funding EMS and the remaining 3.924 mills are for fire protection. The mill levies are on property in three counties; Saguache, Rio Grande and Alamosa. The valuation for 2024 will generate a total of $312,027 in *ad valorem* revenue. Additionally, ambulance services generated $66,591 in 2023 through patient billing. The community recently approved a 2.0 mill increase in November of 2023 that will yield an ambulance services budget of approximately $228,000 in 2024.

Conejos County Ambulance

Conejos County Ambulance is a county-based ALS service. The service covers approximately 1,300 square miles of rural and frontier territory, employing eight full-time and eight part-time staff members. The service has three paramedics, a critical care paramedic, one EMT-I, two AEMTs, and one EMT. Conejos County Ambulance runs around 1,200 calls per year out of

their primary deployment location in La Jara. The service has three ambulances, with the most recent vehicle added in 2017. In addition to its emergency responses, Conejos County Ambulance also performs interfacility and airport transfers, including transports out of the Valley when resources allow. Conejos County Ambulance is dispatched by the Colorado State Patrol-Alamosa Regional Communications Center. Conejos County Ambulance is supported by the county, through the general fund budget, receiving $1,175,777 in 2023. The service also bills on a fee-for-service for transports.

Costilla County Ambulance District

The Costilla County Ambulance District is a Title 32 Special District which funds Costilla Ambulance Service, a volunteer service with four ambulances. Three of the ambulances respond out of the main base in San Luis, with a backup ambulance being housed at the Ft. Garland fire station. The Costilla Ambulance Service is capable of providing ALS services, although staffing has been somewhat tenuous. The service recently sent five students to the Trinidad State College EMT and AEMT programs but none of them passed their respective courses.

The service is currently staffed with five paramedics, six EMT-Is, one AEMT, nine EMTs, as well as three emergency vehicle operators. The service is led by three co-directors, who make operational decisions by a two out of three majority vote when necessary. Costilla County Ambulance District has two on-shift providers at the main base 24/7, with secondary crews called in as necessary. Costilla Ambulance Service is dispatched by the Colorado State Patrol-Alamosa Regional Communications Center. Occasionally, Costilla County Ambulance will rendezvous with Alamosa EMS or Conejos County Ambulance for ALS intercept and transport to the regional medical center in Alamosa. Additionally, the remote nature of its response area results in numerous radio dead zones.

Costilla County Ambulance District is funded through a 4.5 mill levy on property, this property tax generated $710,918.91 with an additional .05132 mills going to refunds and abatements. The service also bills for transport services through a third-party billing service.

Del Norte Community Ambulance

Del Norte Ambulance Service is a private, nonprofit ambulance service covering part of Rio Grande County. The service runs 250-300 calls per year with one-half to two-thirds of those calls being interfacility transports. Del Norte Ambulance Service has two full-time paid (unbenefited) staff members, with the rest being volunteers. The service is primarily BLS and has 14 total crew members with one EMT-I, 10 EMTs and three Emergency Medical Responders (EMR). The service transports the majority of all patients to Rio Grande Hospital. Rominger Airport (KRCV) is located in the service's response area and generates many interfacility transports between area hospitals and the airport.

Del Norte Ambulance Service is funded through sales tax funds levied by the Mineral-Rio Grande Health Services District and passed through to the Rio Grande County Ambulance District. The proposed 2024 budget for Del Norte Ambulance from these funds is $140,000. The agency also bills for transport services. Del Norte Ambulance Service has very limited ALS capability. The service is dispatched by the Rio Grande County Sheriff's Office after initial call screening by the Colorado State Patrol-Alamosa Regional Communications Center.

Mineral County Ambulance Service

Mineral County Ambulance Service is a volunteer service covering a rural and frontier population in Mineral County. The permanent resident population is under 1,000 people but there is a large amount of transient and seasonal visitor traffic. The service runs about 140 calls per year, including event standbys. The remote nature of the service's response area leads to a time-on-task of three to four hours for calls. Mineral County Ambulance Service is a partner in a San Luis Valley RETAC regional response agreement, and responds to a portion of Hinsdale County as well, due to it being the most viable option for accessing this area.

The service provides ALS services, with five EMT-Is, two volunteer paramedics and one seasonal paramedic from outside of the state. Mineral County Ambulance also employs trained, non-medical drivers. The volunteers respond directly on occasion to rendezvous with an on-scene ambulance. Volunteers are compensated with a stipend of $80 per call. Staffing is a perpetual challenge due to high housing costs, conflicts with full-time employment and a general decrease in volunteerism. Mineral County Ambulance Service is dispatched by the Colorado State Patrol-Alamosa Regional Communications Center.

The service receives around $75,000 per year from the Mineral/Rio Grande County Health Services District tax fund. The service also receives support from Mineral County administrative staff to bill for transport services.

Monte Vista Community Ambulance Service

Monte Vista Community Ambulance Service (MVCAS) is a private, non-profit ambulance service. The service is headed by a paid, full-time agency director and a paid, part-time office manager. The director is a paramedic and the office manager is an EMT-I. MVCAS is an ALS service with seven paramedics, three EMT-Is, and ten EMTs (EMT-IV). The rest of the staff consists of a number of volunteers at the EMT level, who are paid when they are on-call or respond to staff a second ambulance.

The service runs approximately 1,200 calls per year, including standbys, and is based out of a station in Monte Vista. The service is a partner to a regional mutual aid and cooperative response agreement and both provides and receives mutual aid support from surrounding agencies. Monte Vista Community Ambulance Services has four ALS equipped ambulances. The majority of transports are to Alamosa and Rio Grande Hospitals. Monte Vista Community Ambulance Service is dispatched by the Colorado State Patrol-Alamosa Regional Communications Center.

Funding for the service comes from a sales tax levied by the Mineral-Rio Grande Health Services District, as well as through patient billing which is performed by a third-part company. The proposed 2024 budget for Del Norte Ambulance from these funds is $280,000. The service also receives support from the community through fundraisers and donations. Monte Vista Community Ambulance Service is a partner of the Trinidad State College EMS education program and hosts student riders from EMT and AEMT classes.

Northern Saguache County Ambulance District

Northern Saguache County Ambulance is a volunteer service operating as part of the Northern Saguache County Ambulance District, a Title 32 Special District. The service has one EMT-I, one AEMT, six EMTs, and ten Emergency Medical Responders (EMR). The service runs around 225 calls per year. The EMT-I and the AEMT are paid (unbenefited) on-shift positions. The volunteers are provided on-call pay, along with hourly pay when activated for a call.

Northern Saguache County Ambulance has four ambulances, with one typically staffed on-shift 24/7. Most of the service's transports are to Rio Grande Hospital, with some going to Alamosa and those from the north part of the District going to Salida. The service provides and is the recipient of mutual aid, with the primary partners being Center Fire Protection District, Baca Grande Ambulance Service and Alamosa EMS for ALS intercepts. The service is dispatched by the Saguache County Sheriff's Office, after an initial page out by the Colorado State Patrol-Alamosa Regional Communications Center.

Northern Saguache County Ambulance is funded from a mill levy for property within the special district and through patient billing. For 2024, the 7.500 mill levy generated $356,800. Ambulance billing, which is performed by a third-party service, is projected to provide $45,000 in additional revenues.

South Fork Fire Rescue

The South Fork Fire Protection District has seen the most change of any EMS service in the San Luis Valley, going back to 2009. Previously, ambulance services in the area were provided by the South Fork Ambulance Association, a non-profit organization utilizing volunteer responders. Fire services were provided by the South Fork Volunteer Fire Department, operating as a subsidiary of the Del Norte Fire Protection District. In 2013 the new South Fork Fire Protection District was formed, separating from the Del Norte district while merging both fire and EMS services into the new district. The district covers approximately 124 square miles exclusively in Rio Grande County; however, their response area extends outside of the legal boundaries of the district into portions of Mineral County, including Colorado Hwy 149, US Highway 160, and the Wolf Creek Ski Area. The population served is seasonal with an estimated 1,000 permanent residents residing in the Town of South Fork and surrounding area, with the potential to increase in the summer months up to 7,000 people. It is a combination service with a total of 28 personnel in addition to a paid, full-time Chief of the service and a paid Captain. Of the 28 total members, 22 maintain EMS qualifications. ALS services are provided at the EMT-I level, using the on-staff Chief and Captain. There is one part-time paramedic that works in the interfacility division but does not respond to emergency calls. The majority of staff are dual-role, fire and EMS personnel, with six members that are not EMS providers. Annually, the service runs approximately 250 emergency EMS calls, 250 fire calls and 350 interfacility transports. South Fork Ambulance is dispatched by the Colorado State Patrol-Alamosa Regional Communications Center.

South Fork Fire Rescue has taken on the critical role of providing long-distance interfacility transports out of the Valley, both as a critical service and as a revenue source for the organization. The interfacility division employs two full-time EMT-Is and two drivers, as well as a full-time Transport Director. Transports out of the Valley primarily come from Rio Grande Hospital, San Luis Valley Medical Center and Conejos Hospital, with a typical time-on-task of about nine hours. The majority of these transports are to Penrose Hospital in Colorado Springs. Separating interfacility staff from emergency response personnel has contributed to the overall safety of patients and personnel alike. The district decided to go "all in" on interfacility transports a number of years ago, this included establishing in-house ambulance billing, the acquisition of Ford Transit Type II ambulances for long distance transports, and the hiring of crews specifically for interfacility transports. The district provides the majority of the approximately 350 interfacility transports from within the San Luis Valley each year. Both fire protection and EMS are funded from a special tax district, as well as through patient billing. The tax district's 4.284 mill levy generated $298,225 in 2023. Additional revenue sources include approximately $90,000 per year from patient billing, $560,000 per year from

interfacility transports, and $140,000 from a sales tax collected through the Mineral-Rio Grande Health Services District. To supplement the District's revenue, it has established additional business lines: the interfacility transport division, the wildland fire support division and in-house ambulance billing. Each line employs a lead staff member and is treated as a separate business, including its own budget. All of this has helped to improve the overall financial stability of the district.

Fire Departments – Non-EMS/First Response

There are close to 20 other fire departments in the San Luis Valley, administered by fire protection districts or municipalities. In some cases, fire district organizations such as the Northern Saguache Fire District, oversee multiple subsidiary volunteer fire department organizations. The City of Alamosa operates a combination department and our team spoke with Chief Bill Stone who was hired by Alamosa after a long career in the Boise, Idaho Fire Department. Alamosa is the busiest fire department in the San Luis Valley running over 500 calls per year. They are working hard to increase capacity, particularly in specialized rescue, and have committed to working with Alamosa EMS on joint training. It is also worth noting that the Colorado Division of Fire Prevention and Control (DFPC) now maintains an engine crew in Alamosa that operates during weekday hours, primarily for wildfire response. These crews often have EMS personnel on staff and they have been willing to assist with local responses when available. In general, most fire departments in the valley have a limited role in EMS response. Interviews revealed that most departments were willing to help when requested, especially for complex calls or when rescue services were also needed. Some departments also provided drivers for ambulances when requested.

Air Medical Services

There are two air ambulance base locations in the Valley, both operated by Guardian Flight, LLC. The Alamosa base provides rotor and fixed-wing aircraft operations The second location operates a fixed-wing service from the airport in Del Norte. Regionally, there is a fixed-wing air ambulance in Pagosa Springs, rotor and fixed-wing air ambulances in Durango, rotor wing air ambulances in Salida, and rotor and fixed-wing air ambulances in Pueblo. The rural and remote nature of the Valley benefit greatly from these services, making them an important part of the system. It was explained during the team visit that the limited availability of staffed ground ambulances for interfacility transports often results in overreliance on aeromedical transport.

Emergency Management

Each county has a dedicated Emergency Management Agency. County Emergency Managers should be notified of a multiple casualty incident (MCI) through normal dispatch channels. When necessary, Emergency Managers will activate their Emergency Operations Center (EOC) or request activation of the Regional EOC to provide the needed support for these incidents. A County-to-County resource request will also be coordinated by the EOC. There

may also be a coordinated request made through the local health department to the State, for additional resources. Along with the direct coordination between agencies, the use of EMSytems and WebEOC in an MCI event is critical and is used by many emergency management offices to help with resource coordination. An Emergency Manager may also request that a hospital liaison be assigned to the EOC, to assist with facility resources and patient tracking. Emergency Managers shall post the incident on WebEOC if appropriate. When Federal resources or support are required, this will be coordinated through Emergency Support Function 8 (ESF8), part of the National Response Framework. Public Health representatives are typically the lead for ESF8 involvement, to provide a coordinated response to health and medical care needs during and following the incident. When an incident is focused in scope to a specific type of a response, such as an MCI, the positions and functions of ESF8 will be assumed by appropriate personnel with expertise pertinent to the incident.

Regional Law Enforcement

There are 21 law enforcement agencies spread throughout the San Luis Valley including Colorado State Patrol, the six county sheriffs departments, Adams State University Police, and federal enforcement through the National Parks Service, US Forest Service, and the Bureau of Land Management. During the consultative visit the team was able to meet with representatives from the Colorado State Patrol and Alamosa Police Department. Colorado State Patrol provides the PSAP services and dispatching for the majority of the region. Many of the patrol vehicles in the region are carrying AEDs, stop the bleed supplies, and naloxone and have staff trained to provide initial care. There is a joint collaboration in the region for tactical law enforcement activities. Alamosa EMS provides medical coverage for SWAT and other tactical team events throughout the region, being the largest ALS services. Several of the law enforcement agencies have participated in joint active shooter exercises and have had EMS involvement at those events.

Analysis of San Luis Valley EMTS System Components

Legislation and Regulation

Most EMS services in the San Luis Valley have made good use of existing Colorado laws to help with the organizing and funding of ambulance services, particularly the authority to organize and operate ambulance service as described in Title 30 (counties) and Title 32 (special districts.) Mineral and Conejos counties currently operate county-based services. Alamosa, Costilla, Rio Grande and Saguache counties have services funded and/or operated by special taxing districts. Three ambulance services in the San Luis Valley are privately operated, Baca Grande Ambulance Service, Del Norte Ambulance Service and Monte Vista Community Ambulance Service. However, Baca Grande Ambulance Service does receive some funding from the Northern Saguache Ambulance District, to serve nearby areas outside of the Baca Grande Property Owners Association footprint. Del Norte Ambulance Service and Monte Vista Community Ambulance Service receive supplemental public funding from the Rio Grande County Ambulance District, a legal entity that was formed to support ambulance service throughout the county. Additionally, the Mineral–Rio Grande

Health Service District, which is administered by Rio Grande Hospital & Clinics, uses a portion of its sales tax funds to support the ambulance district which currently waives its own authorized property tax funding.

As this report is being published, the State of Colorado will be in the process of assuming responsibility for ambulance licensing from the six counties of the San Luis Valley. This is in accordance with SB22-225 and will formally occur on July 1, 2024. This change will likely decrease the administrative burden on local governments to perform the licensing function. Due to the extensive nature of the new regulations, however, many of the services will be required to significantly update their policies and procedures. As such, it may be useful for the RETAC to work with all of the ambulance agencies to develop and implement template policies that comply with the new regulations. CDPHE has also committed to providing technical assistance to local agencies during the 2024–26 initial compliance period, so the RETAC and local agencies should also take advantage of this opportunity.

There was some discussion during the visit about whether the San Luis Valley counties should "opt-in" to issuing county-level authorizations for ambulance services to operate. Considering that the San Luis Valley RETAC has historically facilitated a valley-wide master mutual aid agreement, the opt-in versus opt-out decision will likely have limited or no impact on local services. There is an argument to be made however, that the decision to "opt-in" may serve as an important safeguard in maintaining the financial viability of local EMS services. The decision by a county to not "opt-in" would allow any licensed ambulance service in the state to operate in that county. This open-ended approach may expose the agencies within a county, particularly those that provide interfacility transports to "cream skimming" by agencies outside of the San Luis Valley, allowing them to potentially pick and choose the most profitable long distance transfers. This could ultimately hurt local services that rely on these well-paying long-distance transfers to fund their overall operations. By opting in to require authorization, local counties would have control over selecting mutual aid partners, particularly interfacility transport providers, that will serve as beneficial partners to San Luis Valley communities.

In terms of accountability and potential financial benefit, Rio Grande County in particular may have an opportunity to re-organize their approach to EMS system oversight through the use of the Rio Grande County Ambulance District. Utilizing the district as a contractor for EMS services similar to the "alliance models" currently being used in California may be of some financial utility that will be described further in the System Finance section. Utilizing the ambulance district as an oversight entity would also provide additional accountability for the non-profit services operating within the county, in a similar manner to how the Alamosa Ambulance District contracts with the San Luis Valley Regional Medical Center for services while maintaining oversight authority.

Baca Grande Ambulance Service is currently the only ambulance service in Colorado operated by a property owner's association (POA). While this model provides oversight

by the POA board of directors, the service is ineligible for supplemental payments available to governmental entities as well as for grants available to non-profit charitable organizations. As such, the Baca Grande POA may want to consider another attempt at formation of a special taxing district, potentially in combination with the volunteer fire department. Even if the district does not levy any property or sales taxes, it will still open up additional funding opportunities.

System Finance

All EMS services in the San Luis Valley receive some level of public funding in order to operate. These funds are often supplemented by fee revenues. Almost all services have annual EMS budgets of less than $1M and most are property tax funded in a range from $2.00 - $7.50 per $1,000 of assessed value. Services in Mineral, Rio Grande and Conejos counties are not funded by property taxes and instead receive funding from a portion of local sales tax receipts. Fee revenues vary by each service with most services receiving in the $100,000 - $600,000 range. With the exception of South Fork and Alamosa, all of the services outsource the ambulance billing function to third-party billing services and all of the agencies interviewed reported being pleased with their current billing approach. South Fork FPD stressed the value of local job creation in their choice to keep billing services in-house. Two of the non-governmental ambulance services in the San Luis Valley, Del Norte Ambulance Service and Monte Vista Community Ambulance Service receive pass-through sales tax revenue from the Mineral–Rio Grande Health Service District. The third, Baca Grande Ambulance Service, receives per-call support for responses outside of the POA response area from the Northern Saguache Ambulance District.

Overall, the financial situation of most services in the Valley have improved over the past decade, with almost all services being able to fund at least one scheduled on-shift crew for primary emergency response. A number of services are further working towards additional crews either on-duty or on-call. Alamosa EMS currently staffs two crews and South Fork FPD staffs one interfacility transport and one emergency response crew. Most of this progress is attributable to successful efforts to improve public funding levels. Of particular note was Conejos County, which implemented a first time county-level sales tax, to support the ambulance service and sheriff's department in 2021. Ultimately, the majority of services appear to have maximized their revenues from local government, to the extent that their taxpayers will allow and still result in a minimum level of service.

A few services in the San Luis Valley have benefitted from the Medicaid Supplemental Reimbursement Program (SRP) which is administered through the Colorado Department of Health Care Policy and Financing. This program supplements public agencies for the costs they incur transporting patients covered by the Medicaid program. Essentially, the arrangement counts these local costs as a component of state Medicaid expenditures, allowing for an additional federal match that is distributed to public providers. As of FY2022, San Luis Valley EMS organizations received the following amounts through the program:

Conejos County Ambulance	$58,499
Northern Saguache County Ambulance District	$38,481*
South Fork Fire Protection District	$42,611

*HCPF data shows the NSCAD payment for FY21, no payment in FY22

Based on this data, Alamosa EMS, Costilla County Ambulance District, Center Fire Protection District and Mineral County Ambulance Service are all likely eligible for supplemental payments; however, they were not participating as of the time of this visit. Baca Grande Ambulance Service could potentially become eligible for reimbursement through this program if they were to work out a joint contracting and/or billing arrangement with Northern Saguache County Ambulance District.

Del Norte Ambulance Service and Monte Vista Community Ambulance Service are not eligible as non-governmental organizations for this program; however, as noted above there may be an opportunity for these agencies to explore an "Alliance Model", whereby these organizations enter into a contract with the Rio Grande County Ambulance District, as a provider of EMS services and in return the ambulance district would provide billing services and then payments to the agencies. Similar models are currently in place, on a much larger scale, in San Diego and Contra Costa counties in California.

In terms of capital equipment and facilities, most organizations have adequate facilities available to house their ambulances. The Colorado EMTS Provider Grant program has been instrumental in allowing services throughout the San Luis Valley to ensure they have modern vehicles, radios and durable medical equipment.

Unfortunately, it is clear that EMS services throughout the San Luis Valley have likely reached the limit of what local funding can provide. While some level of administration and a primary crew is of great value to these organizations, there is limited capacity and the individuals that are employed lack competitive pay and benefits, as compared to other parts of the state. Additionally, only limited funds are available to employ ALS providers and as such, the San Luis Valley relies heavily on a limited number of EMT-Intermediates who have been in the system for a significant amount of time. Developing a new generation of ALS providers was identified as an ongoing challenge.

Work by the Colorado EMS Sustainability Task Force, created by Senate Bill 22-225, has modeled the full cost of running an ambulance service (24/7/365) with paid personnel responding to 600 calls per year, to be approximately $1.3M annually. Services of that size could expect to collect about $260,000 in patient billing revenue, leaving a deficit of more than $1M, which would need to be made up by local governments or other outside funds. Although most of the services in the San Luis Valley are this size or smaller, they do not proportionately receive the funding levels needed to cover the gap and provide services with full-time paid personnel. As a

result, agencies in the San Luis Valley continue to utilize creative staffing models, such as on-call arrangements and dual purpose administrative/response personnel. These measures are often coupled with low pay and limited, if any, benefits for personnel. Considering that the EMS Sustainability Task Force will be working to determine necessary funding levels for small and rural communities, the San Luis Valley would appear to be a prime beneficiary of this work.

It should be further noted that the 2009 EMS System Consultative Visit contained a number of recommendations for increased cooperation and shared resources between organizations. Those recommendations remain valid, especially now that local revenues on an agency-by-agency basis have likely been maximized. As a result, the deployment of ALS capability and the ability to field more response units will likely only come from the efficiencies gained through cooperation and shared resources.

Human Resources

The EMTS system in the San Luis Valley requires administrative support, health care providers and educators in order to operate effectively.

From an administrative standpoint, all of the agencies utilize one or more administrative personnel, many of whom also have response duties, to provide leadership and administrative support. Experience levels of administrators vary across the San Luis Valley with a mix of both experienced and relatively new leaders. Many agencies utilize part-time administrative staff who have varying degrees of comfort with administrative functions, such as pay practices, budgeting, ambulance billing, clinical oversight, and legal compliance. Furthermore, due to the large increase in ambulance licensing requirements recently adopted in 6 CCR 1015-3 Chapter 4, the administrative burden is likely to further increase on all services. As such, it is reasonable for San Luis Valley agencies to move toward full-time administrative staff or find creative ways to share these resources. It would also be beneficial for administrative personnel to participate more actively in professional associations such as the EMS Association of Colorado (EMSAC) and the Special District Association of Colorado (SDA). Additionally, leadership personnel may benefit from educational events held around the state such as the EMS Financial Symposium, EMS Safety Summit, or the Northwest RETAC Leaders Conference. Participation in national organizations such as the American Ambulance Association, National Association of EMTs, and the National EMS Management Association may also be very useful to develop the next generation of agency leaders.

Overall, most agencies reported a reasonable number of EMS providers on their crews; however, there was significant concern expressed that the maintenance of EMT-Intermediates was growing more difficult and that pathways to develop or recruit more advanced level providers were needed. On this topic the review team agreed that pursuing the AEMT level and evaluating gaps in care to approach through the Scope of Practice Waiver process, or other pathway, to more effectively fill the roles and care of an EMT-I would prove beneficial to agencies in the San Luis Valley.

Identification of paramedic education programs with a robust distance learning component are also important. EMT training is available locally; however, the success rates of recent programs have been poor and have not led to sufficient numbers of new providers for many agencies. Additional discussion on the strengthening of local educational programs is contained elsewhere in this report. It is important for all to recognize that EMS educational personnel need to be recruited, developed and retained throughout the San Luis Valley to address education needs for the long-term.

As mentioned in the System Finance Section, the most significant barrier to recruitment and retention in the San Luis Valley is the limited ability of local agencies to provide competitive pay and benefits. With most Front Range agencies starting EMT level providers in the $50k range and paramedics in the $80k range plus benefits, agencies in the San Luis Valley will continue to have difficulty attracting and retaining personnel, especially if they do not have previous ties to the area. As a result, this is another opportunity for local agencies to work collectively on mechanisms to share resources, to help offset the disparity in pay and benefits.

Clinical Care

Overview

While an ideal scenario would be ALS level providers on every call for assessment and care of patients, given limitations of interested and qualified providers in the region, this is an unrealistic goal at this time. Instead, the primary focus and objective of the EMS system in the San Luis Valley should be to provide reliable basic life support response and transport 24-hours a day. BLS resources should be stationed in such a way to ensure that 90% of responses are provided in 45 minutes or less with adequate mechanisms in place to ensure simultaneous requests in any location are handled quickly and effectively. BLS care is the essential services that citizens of the SLV require, and can be the difference between a positive and a negative health outcome.

The review team discovered that the vast majority of providers seem to enjoy providing medical care for their communities, took their role and responsibilities seriously, and seem to want to learn and grow as providers. While resources may be limited in some areas, both paid and volunteer providers expressed desires to provide the best care possible within their skill and knowledge, and the committee identified this as a strength of the region.

All primary goals can be accomplished with inputs and focus from agencies and the EMS medical director.

All secondary goals can be accomplished with inputs/support from the RETAC and focus from agencies and EMS medical director

Tertiary goals can be accomplished with inputs/support from the state, other EMS systems in the state, the RETAC, as well as focus from agencies and the EMS medical director

- Primary Goals - Critical for Success
    - Focus on region wide BLS coverage as primary goal

        - Focus on building assessment skills and considerations in differential diagnosis
    - Secondary Goals - Build upon primary focus
        - Implement/teach the “one minute clinical preceptor” to help more experienced providers teach clinical skills and concepts to less experienced learners
        - Build relationships with with local physicians and hospitals to develop a physician shadowing program
    - Tertiary goals - continue to grow the system
        - Consider incorporating an EMS residency program to develop a core curriculum for new hires

Focus on Assessment Skills and Differential Diagnosis

There should be a strong and ongoing focus on assessment skills, differential diagnosis, and the pathophysiologic basis of disease for BLS level providers. While these providers cannot perform ALS level skills and administer ALS level medications, there is no reason why their assessment skills and differential diagnosis cannot be on par with an ALS provider. There is no state scope of practice limitation on history, examination, and differential diagnosis.

This focus on assessment and differential will only be successful if it becomes the dominant culture of the agencies and the region. This requires ongoing focus from the RETAC, the agencies, and medical direction. Building this focus into the culture is the critical and most difficult step, and requires support from leadership. Once this becomes culture, it is easy, as providers understand that “this is how we do it here, and we do things right”. This level of assessment becomes a source of pride, which is important not only for clinical care but for provider longevity.

This focus on assessment and differential diagnosis is beneficial in multiple ways:

- In order for a provider to make the most appropriate diagnosis, the provider must consider the differential diagnoses. This emphasis needs to come from all levels, including medical direction, agency leadership and professional peers. A rising tide raises all boats, and the EMS system as a whole will improve as each individual provider improves.
- The provider who has a focus on potential differential diagnoses is more likely to consider serious causes of a specific presentation.
    - Rare causes of disease that can be life threatening (aortic dissection, esophageal rupture, etc)
    - This can help better utilize limited ALS resources and facilitate a better working relationship between agencies with BLS providers and agencies providing ALS level mutual aid
    - This focus on assessment and differential diagnosis helps the ALS provider understand why they were called to scene. This was identified as an issue when meeting with ALS providers. This helps with ALS burnout and fosters a better working relationship between BLS and ALS level providers
- The provider who has a focus on differential diagnosis is more likely to perform a more comprehensive assessment, including review of systems, to help risk stratify patients.
    - This can be done at a much greater depth due to prolonged transport times and need for reassessment during transport

    - This assessment can help with appropriate destination decision making for a patient with an occult critical illness
- The provider who has a focus on differential diagnosis is less likely to anchor on a diagnosis once evidence is present that suggests an alternative diagnosis
- The provider with a focus on assessment and differential diagnosis can greatly benefit the receiving facility in expediting the work up for the patient
    - Recognizing a potentially serious disease process and communicating this concern to the receiving facility - can be lifesaving if the receiving ED is busy and physician assessment of the patient is delayed

Provider impressions

Given that the majority of the providers that the workgroup met with lived within the communities that they served, and communicated a strong desire to provide care for their friends and neighbors in the community, it is likely that this focus on assessment and differential diagnosis may mean the difference in the life and livelihood of those most important to the provider. This focus on assessment and differential diagnosis cannot be understated, and can be the difference between life and death for the patients who call for help.

After discussion with numerous providers at multiple different agencies, the general consensus was that the average provider was interested in additional knowledge to facilitate growth within the profession. This intellectual curiosity should be encouraged and developed.

There are many resources available to individual providers and EMS agencies to facilitate the development of clinical skills. Many of these resources are free or low cost. The following are a sample of resources:

1. **The One Minute Clinical Preceptor** - This is a way to teach adult learners without giving them an overwhelming amount of information. Oftentimes it can be difficult to teach when in a busy clinical environment. This is designed as a framework for determining a learner's knowledge and providing feedback or clinical pearls while in a clinical setting. The process is rapid and does not require any formal presentation nor preparation.

   Additional information can be found here: https://nursing.unc.edu/wp-content/uploads/2021/07/The-One-Minute-Preceptor-Shaping-the-Teaching-Conversation.pdf

   https://accelerate.uofuhealth.utah.edu/leadership/kathleen-timme-and-pete-hannon-one-minute-preceptor

2. **EM Foundations** - Free framework for teaching providers. The curriculum was designed for emergency medicine residents, but can be easily adapted to use with EMS providers. This curriculum is best utilized at the AEMT, EMT-I and paramedic levels, but can be used at the EMT level as well.

The curriculum includes:

- Foundations 1 - basic overview of the common organ systems and the pathophysiology related to disease processes
- Foundations 2 - advanced level dive into occult presentations, critical care, and resuscitation
- Foundations 3 - special topics, psychiatric disorders, provider wellness, provider finance/insurance, decision making capacity, end of life care etc
- Overview of common 12 lead presentations with examples, providing a step by step framework for interpretation as well as questions and clinical pearls
- Simulation scenarios - prebuilt scenarios that can be used to run providers through a case

  More information can be found here:

  https://foundationsem.com/

3. **A physician shadowing program** - EMS agencies and providers should identify emergency physicians that enjoy teaching prehospital providers and work to build relationships between the agency, the hospital, and the physician to facilitate opportunities for EMS providers to participate in the learning of assessment skills while on shift. The review team identified some limitations with regard to the local hospitals willingness to work with EMS providers for shadowing/skills. The workgroup strongly recommends that the agencies and RETAC leadership work with hospital leadership to discuss solutions to this problem, as a physician shadowing program is critical for skill development and maintenance in low call volume rural areas.

   Working/shadowing in the ED is of benefit to all parties involved:

   - The provider has the opportunity to see varied patient presentations and have an in depth conversation with the physician regarding assessment, exam findings, and work up/treatment
   - The provider has the opportunity to practice assessments and get real time feedback from the physician on presentation, differential diagnosis, and exam findings (heart murmurs, etc that may otherwise be unrecognized).
   - The provider has the opportunity to practice uncommon skills and procedures. Loss of procedural skills can happen in rural and low volume agencies. This is another way to get additional repetitions under expert supervision.
   - The physician has the opportunity to teach and mold the mind of an EMS learner.
   - The physician may get improved job satisfaction from being able to share their skills and knowledge with the learner. This, in turn, can help with physician longevity and burnout.
   - The hospital gets to foster improved relationships between transporting agencies/providers and the facility staff.
   - The hospital also has the opportunity to utilize the learner for tasks (getting the patient a blanket, etc) instead of a more highly specialized employee (physician, RN, etc) that could perform a more specialized task.

4. **An EMS Residency program** - This is similar to physician training, and builds off the physician model. EMS providers who graduate from EMS training have a base level of knowledge but many have not been trained in how to apply this knowledge to dynamic clinical situations. Physicians that graduate from medical training also are in this situation, and this is why residency is a critical part of physician training. There is no reason why we as EMS professionals cannot utilize a similar model for our providers.

   The focus of any residency program is increased autonomy with graded or increasing responsibilities. The new provider would not be expected to manage a complex patient/scene in the first few shifts, and would need guidance and feedback from a more experienced preceptor. Conversely, the more experienced resident would be expected to manage more complicated situations as experience and skills grow. The level of autonomy depends on the learner, and is tailored specifically to facilitate growth.

   The following proverb explains this model:

   > When the student is ready, the teacher appears
   >
   > When the student is ready, the teacher disappears

   There are agencies in the state that have developed programs which have been successfully implemented. Mesa County EMS has an existing residency program and is willing to share with any interested agency or RETAC. Please reach out to Mesa County EMS for more information on the residency program, if interested.

5. **Coordination of ALS Resources**

   Building on the BLS level of care/certification for interested providers would be the next logical step and is a recommendation of this review team. The next most available level of certification would be the advanced EMT (AEMT), which is a useful bridge between the BLS and ALS level of certification. This level of certification would allow additional treatments to be performed without requiring the significant time and financial commitment required by the provider to complete paramedic education.

   Advanced Life Support, as mentioned previously, is not well coordinated or reliably delivered in most of the San Luis Valley. Most agencies have a core group of EMT level providers. This is supplemented by a limited number of AEMTs/EMT-Is and a small number of paramedics. With the exception of Alamosa EMS, it is unlikely that ALS providers at the EMT-I or paramedic level obtain sufficient ongoing clinical experience through emergency response alone. This is not an uncommon issue in rural environments but it is still critical to recognize and take steps to make sure that skills/assessments are maintained within the standard.

   We were pleased to find that paramedics with Alamosa EMS routinely provide care in the emergency department at San Luis Valley RMC, while receiving a high level of physician oversight. We strongly believe this level of clinical experience, ongoing maintenance of skills, and physician oversight is essential in the context of the low volume of calls throughout the Valley.

   We therefore recommend that a unified ALS program be created. With the exception of the city of Alamosa, we believe this program should involve the placement of non-

transport ALS response units in at least 3 locations throughout the San Luis Valley. These non-transport units would be shared between all EMS agencies. ALS volunteers, as well as paid personnel, both now and in the future, would complete a formal orientation, work under shared protocols and respond to incidents in accordance with developed procedures. In addition to existing Alamosa EMS ALS transport units, we recommend that the region attempt to continuously staff ALS units in the following areas:

- Conejos & Costilla Counties
- Rio Grande County (also covers Mineral County)
- Saguache County

It would also be beneficial to allow ALS response personnel the opportunity to provide paid clinical care in a hospital setting for at least one or two shifts per month. Based on geography, we would propose the SLV Regional Medical Center, Conejos County Hospital, Rio Grande Hospital and potentially the clinic in Del Norte (for women's health assessments), participate in this ALS provider program. The ALS providers should be trained at minimum to the Paramedic level, follow standardized/uniform ALS medical protocols and receive Medical Oversight and Direction from a valley-wide ALS/EMS Medical Director. Considering the ALS program would be shared amongst a number of agencies, we think this program would be an excellent fit for placement into a proposed Regional Service Authority.

Medical Direction

For the San Luis Valley EMS system to become a model for rural America, EMS Medical Directors in the Valley will need to become leaders in developing a cooperative, valley-wide system of medical direction that includes shared continuing education, unified protocols, system-wide medical oversight, and collaborative interagency operations.

The review team identified the set of guidelines/protocols as a strength of the SLV RETAC. The team also discovered that the medical directors have good support from the agencies, and if there is a serious issue, the medical directors have the autonomy to make necessary changes. Additionally, the medical directors utilize education and remediation if issues arise and do not place a focus on punitive measures. The recommendations outlined below build upon these strengths.

To begin the process, medical directors for all agencies providing care in the region will need to collaborate under the SLV Regional Medical Director (RMD), with support from the RETAC. The initial goals of the medical direction team should be:

- To encourage better communication between medical directors and agencies. This would be accomplished through regular (monthly, bimonthly or quarterly) meetings to discuss medical oversight and system issues.
    - Regular communications between medical directors will also ensure that all medical directors are up-to-date on changes relative to Colorado Acts Allowed

in 6 CCR 1015-3, chapter 2 and National Model EMS Clinical Guidelines and will facilitate oversight of quality of care issues throughout the valley.
    - Regular meetings allow discussion of issues and allow a proactive approach to addressing issues, rather than being reactive when problems arise
    - Using a group model allows input/insight from multiple perspectives, allowing for a more comprehensive approach to solving issues that arise

- Develop a region-wide continuing education program to increase efficiency. Providing continuing education for EMS providers and agencies is always a challenge. It is not unusual for the same lecture content to be delivered to very small groups multiple times at multiple sites. This requires significant physician time and energy and may contribute to physician medical director burnout.
    - A valley-wide continuing education system should be developed to encourage shared delivery of EMS education; including the use of remote learning, recorded lectures, and interactive case-based formats.

- Continue to support the RMD program. The SLV RMD serves as the leader of the regional EMS system and is tasked with several responsibilities:

    - Encouraging better communication between medical directors, to include regular check ins to provide support and guidance.
    - Continuing to develop and hone the region-wide set of guidelines/protocols
    - Developing a region-wide continuing education program. Recommendations and a framework are described above.
    - Encouraging continuing medical director education, utilizing resources such as the National Association of EMS Physicians and mentorship from experienced medical directors in the state.

  In addition to the above, the RMD will provide medical oversight and guidance for the other agency medical directors in the region. The RMD will ensure that all medical directors throughout the valley are fulfilling their roles and meeting responsibilities expected of them by the Colorado Medical Board and as outlined in Chapter 2 of the EMS rules (6 CCR 1015-3). The RMD works closely with the SLV RETAC and the SLV medical director to provide medical oversight of the entire regional EMS system and to facilitate the improvement of quality of care.

  Every agency deserves to have an EMS medical director who is active and knowledgeable in delivery of EMS services. If the agency medical director needs assistance, the RMD can supply that assistance. However, if the medical director is unable or unwilling to meet their required roles and responsibilities, the RMD can take over for that agency until they are able to find a permanent replacement. As an alternative, if the agency chooses, an agreement can be developed for the regional medical director to take on the primary medical director responsibilities for that agency.

  Fortunately the review team found that, despite their many other responsibilities and obligations, the medical directors for the agencies in the region seem to be engaged and active in monitoring their services and fostering the growth of the EMS system.

EMTS Research

Research is a process of systematic investigation designed to discover factual information and contribute to increased knowledge or understanding. No formal research is currently being conducted within the San Luis Valley EMS system. There is potential for conducting scientifically rigorous research in the future considering all EMS transport agencies, both air and ground, are submitting data from patient care reports to the state database. Submitting standard data to the Cardiac Arrest Registry to Enhance Survival (CARES) also enhances opportunities for meaningful research to improve care of patients experiencing out-of-hospital cardiac arrest.

It is recommended that agencies continue to maintain compliance with state data reporting requirements and use this information to better understand processes and practices that positively affect patient outcomes. Agencies should also consider becoming involved in research initiatives led by local hospitals, the RETAC or other organizations, to help gain a deeper understanding of issues affecting the local and regional EMS system. A continued engagement with local and regional medical direction, as well as hospital based resources is necessary to maintain the required level of care and will become even more useful as approaches to coordination of efforts and sharing of resources is explored.

Public Access

The universal 9-1-1 emergency access number is currently available in all portions of the San Luis Valley. All 9-1-1 calls are answered by one public safety answering point (PSAP) located at the Colorado State Patrol-Alamosa Regional Communications Center (Troop 5B). The State Patrol provides dispatch services for all but three EMS agencies in the Valley. The dispatch processes for Center Fire Protection District, Rio Grande County (Del Norte Ambulance Service) and Northern Saguache County Ambulance are described in their respective sections above. As of our visit, the State Patrol is in talks with Center Fire Protection District to begin providing dispatch services for them.

This PSAP is located at the Colorado State Patrol Headquarters in Alamosa. It was also revealed that in addition to 9-1-1, it is not uncommon for a number of communities to utilize local ten-digit emergency numbers to access some county or municipal communications centers. While this contact method for requesting services will get resources dispatched, it does not include Emergency Medical Dispatch (EMD). For this reason, the use of 9-1-1 should be encouraged, especially for medical emergencies. EMD is a valuable tool, especially in rural areas, because it allows for the provision of some emergency care from bystanders prior to the arrival of EMS response resources. It also helps determine the proper resource response; including resource types, the number of resources needed, and how they are to respond (emergent or non-emergent).

Utilizing multiple dispatch centers may also be problematic, in that they could be dispatching resources without the knowledge of other system participants, which could complicate automatic and mutual aid requests.

We recommend that the Center Fire Protection District continue their talks with the Colorado State Patrol and that Northern Saguache County Ambulance and Del Norte Ambulance Service consider discussions of their own. This would give all EMS organizations within the Valley the same method of dispatch and communications.

The PSAP is currently funded by a $0.72 surcharge on phone lines in the area. A surcharge of $1.72 is common throughout the State. An increase to this amount would help fund the additional utilization costs of the Colorado State Patrol and would not need PUC approval.

Communications Systems

The San Luis Valley has an adequate emergency communications system, with the statewide digital trunked radio system (DTRS) being established in all locations within the valley. In addition to the DTRS system, a network of UHF paging towers also exists. While multiple agencies indicated coverage issues with one or the other systems, it appeared that at least one system was usually operable in most locations.

It also appeared that most San Luis Valley residents had reasonably reliable cell phone coverage. As mentioned above, emergency calls in the San Luis Valley may be received by multiple communications centers that provide dispatching services. Once units are dispatched, most are then tracked by Colorado State Patrol. The three EMS agencies mentioned above are tracked by local dispatch centers.

It appears that most of the radio problems outlined in the 2009 Consultative Visit report have been addressed. There is a well-defined schematic of the radio channels and who should use them. During our visit, most agencies were operating well with the radio systems in the area. The only complaint we received was from Del Norte Ambulance Service. Apparently the Sheriff in Rio Grande County insists that the Del Norte Ambulance Service uses the radio sparingly and limits their time on-air. This can be very risky for EMS personnel and could create life-threatening situations for responders, patients and the public. We would recommend that Del Norte Ambulance Service have their own talk group that is monitored by the Rio Grande Sheriff's dispatch center.

It was also recommended in 2009 that a valley-wide EMS dispatch talk group be created on the DTR system. This system should be simulcast on the UHF paging system, and be patched into any other legacy UHF or VHF radio channels that are being used for EMS dispatch purposes in the San Luis Valley. We did not see where this has occurred, possibly because the current radio schematic seems to be working well with all agencies.

Information Systems

All EMS agencies submit data to the state database through the ImageTrend program. The compliance rate on data submission from the San Luis Valley EMS services to the state ranges from 90-100%. Training on data retrieval through the ImageTrend program has been provided by the San Luis Valley RMD program for EMS service directors. This will allow them to pull agency statistics for process and quality improvement programs. The San Luis Valley RMD program is in the preliminary stages of developing their CQI program. The goal for this program is to develop individual and regional goals, to monitor trends, and to tailor the educational needs of EMS providers in the San Luis Valley.

Each of the trauma facilities within the San Luis Valley submit trauma data to the state database as well as the national trauma database systems through the ImageTrend program. The data collected is also utilized by each facility's Process Improvement program.

Additionally, each facility also participates in a process improvement research program through Centura Health, focusing on trauma care in rural Colorado. The process improvement programs have helped with streamlining processes between the three hospitals in the San Luis Valley and have identified areas to improve care and even expand services.

Education Systems

There is only one initial EMS Education center in the San Luis Valley, a satellite campus of Trinidad State Community College. This program is recognized as an EMT, AEMT and Paramedic training center. The Paramedic program has been operating under a letter of recognition from the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP) and has been seeking accreditation from the Commission on Accreditation of Allied Health Education Programs (CAAHEP) since 2019. Accreditation is currently delayed due in large part to the absence of a qualified program director. The issues with gaining this accreditation may be beyond the scope of the College which has a better developed nursing program and has not risen the level of its EMS Education programs to be a qualified paramedic center.

During the site visits members of the EMS community expressed concerns that maintaining a paramedic education center within the region is not a sustainable model based on their staffing needs. The paramedic education program outcomes report shows that they had a total of five students complete the program in 2021, two students in 2022, and reported information that two students are currently in the program. Additionally, the current program director/ lead instructor is scheduled to resign from the program when the current cohort is complete. Trinidad State College has been seeking a replacement for this position and has not had any qualified candidates for the position. This position will require a strong candidate to steer the program to better meet the needs of the EMS community. It is likely that this position remains vacant due to inadequate advertising, inadequate pay and autonomy granted to the position, and to a global shortage of appropriately qualified individuals. Challenges in filling this position may stem from a lack of candidates in the immediate area that hold the necessary degrees required. Outside advertising may also be unattractive given what the college is ready to pay for filling the position.

Similarly, initial EMT education in the valley is through Trinidad State Community College. Several agencies expressed that there is a need for more consistent courses as several courses on campus have been canceled due to low enrollment. The program does provide outreach to offer the EMT course locally by sponsoring a class when requested by an agency and a staff member from the agency affiliates with the education program as an adjunct instructor to teach the class. The method outlined by one of the recent instructors was that each course is developed by that agency staff having to take responsibility for curriculum, testing, and clinical rotations. The barriers outlined in the interviews was that this model has led to inconsistent course quality at a high cost for each student and difficulty getting people into an EMT or paramedic class. A synchronized course made up of multiple satellite classes has not been attempted.

The college was able to utilize the Care Forward Colorado funding for EMS training; however, the utilization was limited due to low enrollment and class availability. Most of those attending these subsidized classes were not interested in employment as EMS providers in the Valley. Given the staffing shortages experienced across the board, this was indeed

unfortunate, and it appears there was little or no prescreening of applicants for initial EMS Education, a hallmark of high performance EMT programs. Future efforts of lowering the cost of initial education may be assisted with a combination of CREATE funds, SLV RETAC coordination and contractual support from the agencies that recruit from this pool with still some financial commitment from the student to keep their "skin in the game."

Several agencies in the valley have sought initial education from other programs that offer hybrid EMT, AEMT, and paramedic courses including Pueblo Community College (PCC). PCC also offers a bachelor's degree program in EMS and has demonstrated an interest in meeting the needs in the Valley. This offers some needed flexibility in the didactic courses, but still requires the student to commit to traveling for skills and clinical rotations either in Pueblo, Salida or further. Some providers are taking an online program offered out-of-state and traveling to that State to complete the skills labs in a condensed time frame.

Finding suitable clinical sites for completion remains a challenge. Both alternatives require significant time commitments. Since many agencies operate on a volunteer basis, the student would need to take time away from their full-time jobs to be able to complete the programs. At the paid agencies there are valid concerns with difficulty backfilling the position due to staffing levels. The availability of clinical rotations within the valley is limited to a crowded schedule, mostly in Alamosa where preceptors are in high demand for both EMS and Nursing programs.

The continuing education of EMS providers in the valley is provided in cooperation with SLV RETAC. Each agency holds training and continuing education classes and submits records to the RETAC which verifies the CE and skills with the RMD to approve the provider's renewal applications within Colorado. Most of the continuing education offerings have been small in-house training sessions with low attendance. This could be improved with agency cooperation so that personnel can travel a short distance to attend the training of neighbors. This model has been in place for several years and recently more work has been done to further develop the posted scheduling and information sharing. It was expressed that many students will not attend classes unless mandated by their agency or medical director.

The SLV RETAC recently renewed its EMS education group recognition. This has made for more work for the RETAC coordinator and is requiring her to work hours greater than one FTE. A part of full-time administrative assistant may serve to better manage this load. Collaborating with the College to recruit a lead EMS educator and Program Director should be a SLV RETAC goal and objective. Filling this position may also lower the time demands on RETAC staff. IF collaboration is not a good option it may be beneficial for SLV RETAC to become an education center and manage the staffing internally. Many agency representatives extolled the contribution of a recently retired educator who previously supported both initial education and continuing EMS education throughout the valley. If a good candidate can be found, they should be paid appropriately and if the barrier is a higher degree that should be accommodated by a reasonable timeframe to complete the degree while working and with paid tuition. Both the need for more FTE support at SLV RETAC and the recruitment of the educator speaks to the need for greater funding needed to adequately pay for these positions.

RECOMMENDATIONS:

1. Develop an TSCC / SLV RETAC collaboration in hiring a qualified lead educator/EMS program director. The challenge of finding a candidate with an appropriate degree

could be suspended with a time interval granted to allow the selected individual to gain their degree at TSCC with a tuition voucher. The lack of a degree should only affect the Paramedic Program, which we have already seen as less critical so long as Pueblo and other programs can meet the needs remotely.
2. Continue to utilize remote education programs both for initial education and recertification requirements but with local facilitation and skill training by qualified instructors overseen by the Regional Medical Director.
3. Host EMS Educator training in the valley to include Skill instructor training to better support the continuing education done at the agencies.
4. Maintain and utilize an education calendar that lets students and agencies coordinate a continuing education schedule shared across the valley. The same calendar can include scheduled synchronous classes in AEMT and Paramedic lectures which could serve dual purpose as both initial and refresher classes in the valley.
5. Engage the RMD program to generate better engagement and participation in the continuing education sessions as well as overseeing CQI of the education calendar.
6. Collaboration with TSCC and other schools to assure that there are both college credit and non-credit classes so that agencies and students can attend what they need at the most affordable cost. If the colleges cannot offer lower cost non-credit courses then the SLV RETAC should take over the delivery of EMT courses.
7. Bring EMR education to the high schools and give students college credit for attending these courses thus creating a pool of both future EMT students and EMS College majors.
8. Develop a job-sharing program among the paid EMS agencies such that a greater pool of qualified staff can be tapped to backfill positions left vacant while staff are at schools or away for clinicals.
9. The SLV RETAC, due to its heavy involvement in EMS Education, should expand staff accordingly and seek additional funding support from the Counties and the State.

Integration of Health Services

The integration of health services in the San Luis Valley highlights a complex challenge faced by many rural regions across the country, particularly in ensuring accessible and comprehensive ALS care. The main obstacles identified suggest a multifaceted problem, requiring multifaceted solutions; including structural, financial, and educational reforms.

Key challenges identified:

- Lack of ALS coverage: The sparse availability of ALS care exacerbates health inequities, as not all residents have equal access to these crucial services. This issue is compounded by the geographical vastness and sparse population density of the region. Multiple agencies decried the phaseout of testing and certification of new EMT-Is from the NREMT that started in 2013, with the final transition with NREMT with regards to the EMT-Intermediate in 2019. The EMT-I was an excellent solution for the lack of ALS care in rural areas.
- Interfacility transport delays/issues: The considerable distances to tertiary care centers in Colorado Springs or Pueblo introduce significant delays in critical care, impacting patient outcomes.
- Clinical training and skills maintenance: The limited volume of ambulance calls and the lack of clinical time at the local hospitals - San Luis Valley Health Regional Medical

Center, Rio Grande Hospital, and San Luis Valley Health Conejos County Hospital - restrict opportunities for EMS personnel to maintain and enhance their skills.

- Education barriers: The challenges with initial and ongoing EMS education underscore the need for a dedicated training center that could serve as a regional hub for EMS education and certification.
- Hospital destination restrictions: In the northern part of the region, there are patients that have had their primary medical care in Salida. The ambulances in that region have occasionally been instructed to transport to Alamosa instead of Salida which creates a burden for those patients.

Potential solutions:

- Establishing a Regional Service Authority: As proposed in the previous consultative visit, a centralized regional authority such as a Regional Service Authority (RSA) as allowed in CRS Title 32, Article 7 could streamline operations, foster integration, and address the logistical and administrative challenges of interfacility transfers as well as emergency response calls. This authority could also spearhead efforts to secure funding and resources for ALS coverage expansion.
- Expanding the existing Health Services District: Leveraging the Mineral-Rio Grande Health Service District to cover a broader area could provide a stable funding stream. This funding through property and sales taxes could support full-time ALS providers and facilitate a rotational system, ensuring that all areas have access to skilled providers. It might also make sense to use the existing property tax monies instead of reverting them back.
- Interfacility transport program enhancement: Building on the efforts of the South Fork Fire Department, enhancing the interfacility transport program with critical care paramedics or nurses could address both the volume and acuity of calls across the region, reducing reliance on costly medical flights.
- Education and training initiatives: The establishment of a regional training center, ideally by the RETAC, and possibly in conjunction with the proposed Regional Service Authority, could address ongoing educational needs. This could help by offering initial EMT and AEMT training along with continuous skills training and competency assessments, crucial for maintaining high-quality care. Additionally, the opportunities for ongoing competency training at the local hospitals should be reestablished. This was mentioned by multiple agencies.
- CIHCS/Community Paramedics: Exploring CIHCS/community paramedicine could provide preventive care and reduce unnecessary emergency visits and transports, a critical step toward a more integrated healthcare system. Ensuring a compensation mechanism for these services is essential for sustainability and may require state and/or federal legislation.
- Enhanced cooperation and coordination: Continuing to foster cooperation among medical directors and standardizing protocols across agencies can significantly improve the efficiency and quality of EMS services.
- Waivers for AEMT scope of practice: With the sunsetting of EMT-I certification, evaluating the need for increased scope of practice for AEMTs is critical in rural areas.
- Transportation of patients to appropriate facilities: If there is no life threat, ambulance services in the northern part of the region should be allowed to transport patients to their preferred location in Salida. The transport times are roughly equivalent as transport to Alamosa and the patient's needs are better served.

The challenges faced by the San Luis Valley in integrating health services are substantial, reflecting broader issues in rural healthcare delivery. However, the solutions proposed, particularly the creation of a Regional Service Authority and the expansion of existing infrastructure, offer a path forward. These solutions emphasize the need for coordinated efforts at the local, state, and potentially federal levels to overcome financial, logistical, and educational barriers. Achieving integrated health services in rural areas like the San Luis Valley is not only about improving emergency medical services but also about ensuring equitable healthcare access for all residents.

Public Education, Prevention & Mass Casualty Response

These remaining system components are supported and coordinated by the RETAC. The region benefits from a dedicated stakeholder community to ensure widespread availability and implementation of these activities. The need for these activities is heightened in the more rural and remote areas of the valley and could be further developed and utilized. This will take additional funding for the RETAC itself, as well as more fully resourced agencies throughout the valley. The recommendations for strengthening many of the other system components will lend themselves to these improvements.

Summary of Finding and Recommendations

Financial Stability

There is an obvious financial aspect to all of the system components. Limited revenues and funding options have a direct effect on the entire healthcare industry; the EMTS system, individual agencies and EMS professionals are no exception. The agencies and counties utilize a creative array of funding and support mechanisms. While most of these funding approaches have reached their maximum potential, there are few considerations for the near-term. Additionally, this evaluation and understanding will prove beneficial as the EMS System Sustainability Task Force continues its work and develops recommendations for improvement.

There is always an opportunity to evaluate the public funding mechanisms, through property and sales tax; however, such fixes entail a somewhat lengthy process and are often found not to be viable options. There is a potential for some agencies to increase revenues through billing for services, including participation in the Medicaid Supplemental Reimbursement Program. Apart from increasing funding and revenues, the most immediate consideration for agencies, counties and the region should be maximized resource utilization; through strategic planning and partnerships, a system-wide coordination of efforts and a shared vision of collaboration in the interest of better patient care.

Staffing and Recruitment

There are a number of developing dynamics that limit the ability of EMTS systems and agencies to attract and maintain the growing number of professionals needed to meet the increasing demand for these services. Increasingly the capacity of volunteers to respond 24 hours a day becomes difficult to balance with home life and paid job and career demands to

ensure an adequate response. This concern is further supported by EMS data for the region demonstrating the peak call times are between noon and 6 p.m.

While additional funding can help alleviate many of the identified staffing issues, it is not the only solution. Attracting individuals to the profession and to the region also needs to be considered. Leadership development for providers that have recently moved into leadership roles would help provide the administrative and leadership support to develop recruitment and retention efforts. Developing career and volunteer advancement opportunities can help prevent burnout and maintain interest in the industry. Further recruitment opportunities can be sought through educational opportunities either as job fairs for students completing their education who are not affiliated with an agency and consideration of opportunities for developing and training providers in high school provides career opportunities before graduation.

Education and Professional Development

The proper staffing of agencies providing EMTS requires a specified level of initial education along with ongoing maintenance of knowledge and clinical abilities. Manageable access to recognized institutions to receive this education and training is a significant barrier to those seeking to be certified at any of the provider levels. The rural and remote nature of a significant portion of the Valley often equates to a relatively low call volume, resulting in a lack of clinical experience and maintenance of clinical skills.

The options in the SLV are limited when it comes to obtaining the needed initial education to properly staff agencies and support the overall system. We recommend continued efforts to find creative options, such as hybrid and distance education programs and those with accelerated or condensed learning schedules. Increasing high quality continuing education opportunities can help prevent burnout, aid retention, and provide opportunities for advancement as field providers. One such example would be utilization of the pediatric training opportunities and readiness programs with the Colorado EMS for Children programs resources. The program's available resources include Colorado Pediatric Preparedness for the Emergency Room (COPPER). Hospital EDs who score 87 points or higher on the National Pediatric Readiness Assessment have reduced pediatric mortality rates (76% for medical and 60% for trauma). Additional resources exist for prehospital providers in the Colorado Pediatric Emergency Care Coordinators (COPECC), the Mobile simulation lab, and PECC seminars. The program can be contacted at emsc.colorado@cuanschutz.edu. Finally, education and mentorship opportunities focused on leadership development, EMS management, and professional instructor development will be foundational to sustaining the industry in the San Luis Valley.

Integration and Coordination

A combination of the findings above often results in a fragmented system and an inefficient use of all available resources, which leads to a duplication of efforts and a heightened competition for limited funds. While a significant goal for the region should be to achieve ALS coverage system-wide, this should first be built on a robust network of BLS coverage throughout the Valley. This will take collaboration between agencies and local governing bodies and require new ways of thinking about the EMS system as a whole. Efforts with agency medical directors and the RMD have been successful and beneficial at developing regionalized protocols and supporting continuing education across the Valley and could serve as an example for other collaborative efforts throughout the system.

The challenges posed in the integration of healthcare services for the mostly rural counties that make up the San Luis Valley, require a structured approach to cooperation and a coordination of resources. Making the most of existing infrastructure and establishing a Regional Service Authority, mentioned under the Integration of Health Service section, remains a beneficial consideration. This could help address a number of common service components, especially ALS care availability and interfacility transports, as well as evolving aspects like Community Paramedicine and the Colorado EMS for Children program. The buy-in from each county, along with guidance and leadership from the RETAC are paramount to the success of any cooperative efforts and will be the key to success.

Appendix A: San Luis Valley EMS Statistics

Type of Service Requested	Number of Runs	Percent of Total Runs
911 Response	4,666	59%
Public Assistance/Other	1,703	22%
Hospital to Hospital/Interfacility	988	12%
Medical Transport/Non-Hospital Transfer	521	7%
Mutual Aid	31	0%
Total	7,909	

Time of Day	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total	Percent
00:00 - 02:59	92	71	78	101	65	89	80	576	7%
03:00 - 05:59	61	50	52	53	60	62	80	418	5%
06:00 - 08:59	86	109	100	125	115	113	113	761	10%
09:00 - 11:59	133	163	180	153	179	183	165	1,156	15%
12:00 - 14:59	185	237	207	182	200	217	203	1,431	18%
15:00 - 17:59	174	212	211	224	206	239	178	1,444	18%
18:00 - 20:59	167	169	158	159	200	213	210	1,276	16%
21:00 - 23:59	111	100	126	116	118	147	129	847	11%
Totals	1,009	1,111	1,112	1,113	1,143	1,263	1,158	7,909	

Response Mode To Scene	Number of Runs	Percent of Total Runs
Emergent (Immediate Response)	6,407	81%
Non-Emergent	1,425	18%
Emergent Downgraded to Non-Emergent	72	1%
Non-Emergent Upgraded to Emergent	5	0%

Disposition Transport Mode From Scene	Number of Runs	Percent of Total Runs
Non-Emergent	3,759	48%
Emergent (Immediate Response)	1,660	21%
Not Applicable	1,015	13%
Not Recorded	872	11%
	350	4%
Emergent Downgraded to Non-Emergent	233	3%
Non-Emergent Upgraded to Emergent	20	0%

Disposition	Count	Percent
No Patient Contact	1,099	14%
Patient Contact Made, No Transport	1,689	21%
Patient Contact Made with Transport	5,121	65%
Total	7,909	

Run Times - Unit Notified by Dispatch to Unit Enroute in Minutes	Number of Runs	Percent of Total Runs
	289	4%
0 to <1	4,611	58%
1 to <2	374	5%
2 to <3	230	3%
3 to <4	183	2%
4 to 5	160	2%
> 5	2,062	26%

Run Times - Unit Enroute to Unit Arrived on Scene in Minutes	Number of Runs	Percent of Total Runs
	436	6%
0 to <5	3,007	38%
5 to <10	2,394	30%
10 to 15	911	12%
> 15	1,161	15%

Run Times - Unit Left Scene to Patient Arrived at Destination in Minutes	Number of Runs	Percent of Total Runs
	2,337	30%
0 to <5	899	11%
5 to <10	1,464	19%
10 to 15	578	7%
> 15	2,631	33%

Appendix B: List of Stakeholders Interviewed

South Fork Fire Rescue - Tyler Off - EMS director, Dr. Grant Hurley - Medical director for agency.

Mineral County EMS - Don Dustin - EMS director, Dr. Grant Hurley - Medical director of agency.

Pueblo Community college - Dawn Mathis

Rio Grande Hospital - Dr. Pat Thompson

Trinidad State College - Lori Rae - Dean of Instruction

Monte Vista EMS - Andrew Valdez - EMS director, Arlyn Oakes - office manager, Dr. Grant Hurley - medical director of agency

Del Norte EMS - Kayla Black EMT - staff (no longer in an authority role)

Saguache EMS - Mackenzie Hammel - EMS director

Center EMS - Rylan Good - EMS director, Kimberlee Schuett

Baca Crestone EMS- Joanna Dokson - EMS Director

RMD- Dr. Patrick MacDougall - Regional Medical Director, Dr. Grant Hurley - Associate Medical Director

Alamosa EMS/San Luis Valley Health- Darrick Garcia - EMS director, Julie Ramstetter - trauma coordinator

Alamosa Police department – Bill Stone - Fire Chief

Alamosa Fire department - Capt. Samuel Maestas

Alamosa County Commissioners - Lori Laski, Arlan Vay Ry, and Roni Wisdom

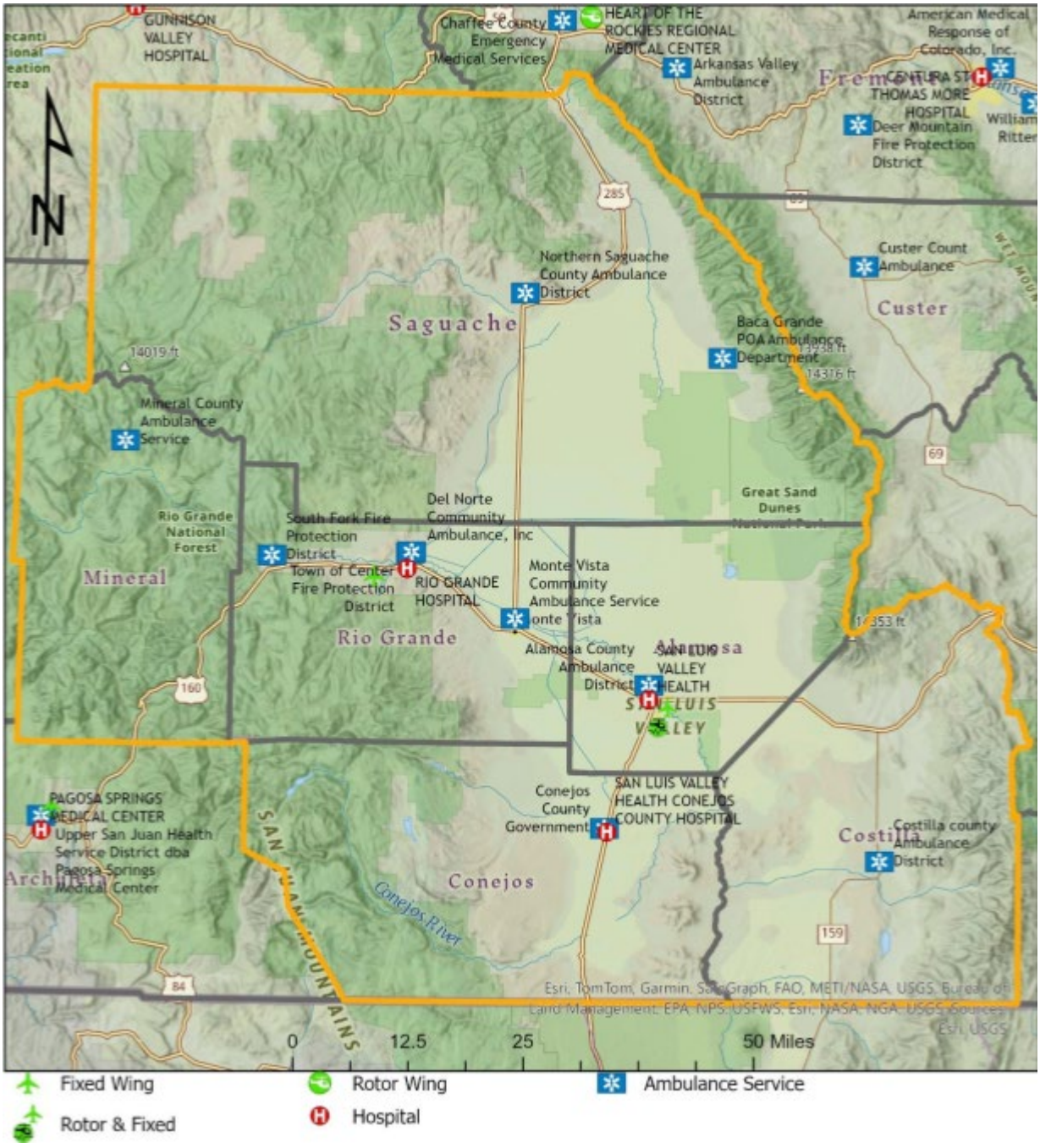
Conejos EMS - Ernest Abeyta - EMS director, Dr. Donna Nelson - Medical Director, Natalie Watters - AEMT

Costilla EMS - Kathy Christenson - EMS operations manager

Colorado State Patrol Dispatch- Cameron Decker - dispatch regional manager

San Luis Valley RETAC - Julie Ramstetter - board chair, Reyna Martinez - coordinator

Appendix C: San Luis Valley Service Map



Appendix D: Assessment Team Biographical Information

Danial Barela, BAS, NRP

Danny has been a paramedic since 1979. He has been committed to emergency care as a provider, an agency director, an educator and as a flight paramedic. He has worked in coal mines, construction sites, in rural and urban EMS systems and in critical care transport. He directed the creation of the paramedic program at Colorado Mesa University. He worked 28 years as a flight paramedic for CareFlight. He has served on several policy boards and task forces and is currently the Executive Director of Western Colorado RETAC. Danny is the past president of the Colorado EMS Educators Association (CEMSEA). He describes himself as a proud new grandfather, a husband, a father, a caregiver, an explorer and, when needed, and a leader. He has a passion for wilderness appreciation, American history, and life-long learning.

Glenn Burket III, DO

Dr. Glenn Burket is the medical director for Mesa County EMS, Dr. Burket completed medical school at Lake Erie College of Osteopathic Medicine and underwent Emergency Medicine Residency training at Lehigh Valley Health Network in Allentown PA. He then attended the University of North Carolina for EMS fellowship, where he was exposed to a variety of EMS systems, both urban and rural, in addition to working directly with the North Carolina State Highway Patrol providing operational and occupational medical support. He is dually board certified in both Emergency Medicine and Emergency Medical Services by the American Board of Emergency Medicine and has a special interest in airway management, high fidelity simulation, performance under stress, and provider education.

Sean Caffrey

Sean Caffrey is an Emergency Medical Services professional with over 35 years of experience. Sean has been certified as a paramedic since 1990 and graduated with a BS in emergency services administration from George Washington University in 1992. Sean has served in senior leadership positions in private sector, local government and volunteer EMS services. He completed his Masters in Business Administration in 2000 at the University of Denver and served as the Director of Ambulance Services in Summit County, Colorado until December of 2009. Sean participates in the leadership of the National EMS Management Association and the EMS Association of Colorado. Sean also served in a regulatory role for over 3 years with the Colorado Department of Public Health and Environment and 5 years a a program manager for the Colorado EMS for Children program. Sean is currently the CEO of the Crested Butte Fire Protection District providing EMS and fire protection portions of Gunnison County, Colorado while maintaining his paramedic credentials. Sean lives with his wife Sarah and their 17-year old son Tiernan in Mt. Crested Butte.

Kirby Clock, MBA, NRP, FP-C

Kirby Clock is the Chief of the Delta County Ambulance District (DCAD). He has been in this position since March of 2011. He lives in Paonia where he was raised. Kirby and his wife Lynette have twenty-seven-year-old triplets – two daughters, Tiffany and Tia, and a son Tyrell. All three work in the medical field. Kirby has a Bachelor of Science in Business Administration degree and a Master of Business Administration degree from the University of

Denver. He owned and operated a call-center/answering service from 1988 through 2011 in Hotchkiss, CO prior to his current position as Chief at DCAD. Kirby started in EMS as a volunteer EMT for the North Fork Ambulance Association in 1991. In 1994 he became an EMT–Intermediate and began working as an ALS provider for the Delta Ambulance Service. He became a Nationally Registered paramedic in 2012 and a Certified Flight Paramedic in 2021. He also served on the Paonia Volunteer Fire Department from 1991 through 2023. During his tenure as Chief of DCAD he has overseen the implementation of critical care transport services, a robust community paramedic/MIH program, a secure behavioral health transport program and a progressive EMS system. Outside of EMS he enjoys hunting, fishing, and riding his horses in the mountains. He has also officiated high school basketball and baseball every winter and spring for the last 35 years.

Randy Lesher, Paramedic

Randy is the retired Chief of Thompson Valley Emergency Medical Services, a health services district located in Loveland, Colorado. Randy started his EMS career at an ambulance service operating out of a funeral home in Cañon City. He owned and operated his own ambulance service for 15 years in Fremont County. He served on the State Emergency Medical and Trauma Services Advisory Council and was chairman of the Public Policy and Finance Committee. Randy is a member of the Northeast Colorado RETAC representing Larimer County, sits on the Larimer Emergency Telephone Authority and the Fremont County E-911 Board. He also served as president of the EMS Association of Colorado, a non-profit professional organization representing EMS providers and ambulance services statewide.

James Robinson

Chief James Robinson is a Colorado native and 35-year veteran of emergency medical services (EMS), serving as an EMS provider and leader in volunteer, private and public EMS. He is currently the Chief of Thompson Valley EMS in Loveland, Colorado. Previously, he served twenty-six years with the Denver Paramedic Division, the last fourteen years as the Chief of Operations and Special Operations, with responsibility for all aspects of the 911 emergency medical services system for the City and County of Denver and some surrounding areas. James is a founding member and Past President of the International Association of EMS Chiefs (IAEMSC) and as a passionate advocate for EMS and its role in preparedness, James has been and continues to be engaged in numerous local, regional, state and national-level EMS, medical preparedness, public health, and emergency management initiatives. James holds a master's degree in national security studies from the Naval Postgraduate School's Center for Homeland Defense and Security, and is a graduate of Cohort VI of the National Preparedness Leadership Initiative (NPLI) at the Harvard Kennedy School of Government and Chan School of Public Health.

CDPHE representative

Eric Lucas, MPH, NRP, CCP-C

Eric Lucas is the EMS Operations Specialist in the Emergency Medical and Trauma Services Branch at the Colorado Department of Public Health and Environment where he coordinates EMS education, provider scope of practice, and emergency preparedness and response initiatives. He believes in a data-driven approach for supporting EMS as the profession

continues to grow in healthcare and public health fields. Previously he was the EMS Data Coordinator for the EMTS branch, where he worked to improve the quality of NEMSIS reporting and use of that data to help inform decision-making in prehospital care. Eric has been an active paramedic in Colorado and New Mexico since 2008, and has worked or volunteered with several EMS and fire departments since 2000 as a firefighter/medic, paramedic, and QA/QI coordinator. Eric is also a part-time EMS instructor and has worked with several EMS and paramedic education programs in Colorado and New Mexico. Eric holds a Master of Public Health degree in Epidemiology and Environmental & Occupational Health from the Colorado School of Public Health at CU-Anschutz, a Bachelor of Arts in Public Health with minor in Biology and a certificate in Geographic Information Systems from Fort Lewis College in Durango, and an Associate of Applied Science degree in Emergency Medical Services from Eastern New Mexico University. As a Colorado native Eric's volunteer activities have focused on efforts to help increase awareness about the natural resources in the state, including teaching outdoor stewardship by leading crews on trail construction and maintenance with Volunteers for Outdoor Colorado.