

Baca County Colorado



Emergency Medical & Trauma Services System Consultation

November 9 -11, 2016



COLORADO

Health Facilities & Emergency
Medical Services Division

Department of Public Health & Environment



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Health & Environment

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

April 25, 2017

Baca County
Board of County Commissioners
741 Main St. #1
Springfield, CO 81073

Dear Commissioners,

On behalf of the Colorado Department of Public Health and Environment (department), we are attaching the Baca County emergency medical and trauma services system consultative review report. Pursuant to your invitation and support of this project, a group of consultants worked under the general coordination of the Walsh Hospital District and the department to review the current status of the emergency medical and trauma services system in Baca County. The Baca County Board of County Commissioners and the Baca County emergency services community are to be commended for the dedication and foresight you demonstrated by undertaking this important activity. We hope this report will provide the basis from which the community can move forward to ensure that quality patient care and transportation continue to be provided throughout the county.

The department is pleased to have provided the funding for this project and wishes to thank Walsh Hospital District for its willingness to provide additional resources and support to this effort. Understanding that Colorado statute vests each county with the authority to develop, design and implement local emergency medical services systems, this consultative review is intended to provide insight and information from which the Board of County Commissioners, the healthcare community and local EMS services can make the policy decisions necessary to support the development of improved services to patients throughout your jurisdiction. The report itself has been authored by members of the contracted review team and represents their perspectives and recommendations. Understanding that the department has limited regulatory authority regarding services 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 Baca County considers its next steps, if our office can be of further assistance, please reach out and we will look forward to the opportunity to assist any way we can.

Respectfully,

D. Randy Kuykendall, MLS
Director, Health Facilities and EMS Division
Colorado Department of Public Health and Environment

Table of Contents

Introduction and Project Overview	1
Baca County Geography and Demographics.....	2
Emergency Medical and Trauma Service Providers	3
Southeast Colorado Hospital Ambulance	3
Southeast Colorado Hospital District	4
Walsh Ambulance Service	4
Baca County Communications Center	5
Fire Departments	5
Law Enforcement	6
Analysis of Baca County EMS System Elements	7
Legislation and Regulation	7
System Finance	10
Human Resources	14
Medical Direction	18
Clinical Care.....	20
Education Systems	26
Communications and Public Access.....	28
Information Systems	30
Public Education and Prevention	32
Mass Casualty	35
Evaluation.....	37
Integration of Health Services	39
Summary of Recommendations	41
Appendix A: Baca County EMS Statistics 2015	57
Appendix B: List of Stakeholders Interviewed	60
Appendix C: Baca County Service Map.....	61
Appendix D: VHF Signal Propagation Map	62
Appendix E: Assessment Team Biographical Information.....	63
Matthew Lindsay, NR-P	63
Brian Rickman, EMT-Intermediate.....	63
David Ross, DO, FACEP	64
Carl Smith, BPA, AEMT.....	65
Phyllis Uribe, RN, BSN, MS.....	65
Scott Byars, MS, FP-C, NR-P	66
Eric Schmidt, RN, BSN, MBA, EMT-Intermediate.....	66
References:	67

Introduction and Project Overview

In February 2016, the Walsh Hospital District, on behalf of Baca County emergency medical and trauma services stakeholders, requested grant funding from the Colorado Department of Public Health and Environment (department), to provide an assessment and review of the county's emergency medical and trauma services system. The department awarded system improvement funding in July 2016 to support the consultation.

Under Colorado law, the Board of County Commissioners is the ground ambulance licensing authority as defined by C.R.S. § 25-3.5-301. The primary EMS agencies in Baca County are Southeast Colorado Hospital Ambulance and Walsh Ambulance Service. Both ambulance services provide 911 emergency response and interfacility transport services. Fire and rescue services are provided by volunteer departments in Campo, Pritchett, Springfield, Two Buttes, Vilas and Walsh. The only hospital in Baca County is the Southeast Colorado Hospital, which is currently designated as a Level IV trauma center. Dispatch services are provided by the Baca County Communication Center, and mutual aid resources come from surrounding counties in Colorado, Kansas and Oklahoma when requested. The closest critical care ground transport resources are based in Otero County. The county commissioners along with the emergency medical and trauma services stakeholders agreed to participate in this consultation process in order to develop viable, long-term solutions to ensure high-quality emergency services continue to be provided to the citizens and visitors of Baca County.

The Emergency Medical and Trauma Services Branch of the Health Facilities and Emergency Medical Services Division, pursuant its authority to assist local jurisdictions provided in C.R.S. § 25-3.5-102 and 603 respectively, recruited a consultative visit team to evaluate the Baca County emergency medical and trauma services system and make recommendations for system improvement. Analysis of the current system involved a pre-visit survey, interviews with primary stakeholders and a review of available system data. The state of the current system was analyzed using elements derived from the original 14 EMS system components contained in the 1996 *EMS Agenda for the Future*, published by the National Highway Traffic Safety Administration, with the addition of one Colorado-specific component. These attributes serve as the basis for a number of statewide and regional planning activities and are further referenced in 6 CCR 1015-4, Chapter Four. A list of short-, medium- and long-term recommendations with guidance for implementation is provided in this report for consideration to improve the overall Baca County emergency medical and trauma services system, including the treatment, transportation, communication and documentation subsystems addressed in C.R.S. § 25-3.5-101 *et seq.*



A system improvement grant awarded by the department to Walsh Hospital District on behalf of the emergency medical and trauma services stakeholders in Baca County authorized approximately \$25,000 to conduct this review. The department developed a contractual relationship with Walsh Hospital District to serve as the fiscal agent for the project. Project management assistance was provided by Walsh Hospital District. All the team members were

selected based on their expertise in rural EMS and trauma systems and were approved jointly by Walsh Hospital District and the department.

Mutual aid can be 30 to 45 minutes away depending upon weather and resource availability in the surrounding jurisdictions. The pre-visit survey showed that the stakeholders rated the overall effectiveness of the system as above average. It was evident that the community is supportive of the basic life support ambulance service and will do what it takes to sustain EMS. In addition, the dedication that the community members have to the various emergency services is to be commended, as it provides an excellent service to the rural community with continued support.

Baca County Geography and Demographics

Located in the far southeastern corner of Colorado bordering Oklahoma, Kansas and New Mexico, Baca County is neighbored by seven other counties including Bent, Prowers and Las Animas in Colorado, Morton and Stanton in Kansas, Union in New Mexico and Cimarron in



Oklahoma. Baca County is large, encompassing 2,557 square miles, with an average elevation of 4,295 feet. The estimated 2015 population provided by the U.S. Census Bureau is 3,615 residents and a population density of 1.4 people per square mile, designating the county as frontier. According to 2015 estimates, the population of Baca County had decreased 4.6 percent from 2010 while county populations in Colorado increased an average of 8.5 percent

during this period. Since 1930, the population of Baca County has been in decline, with the greatest decline attributed to people leaving the county in large numbers during the great dust bowl era. The over-65 age group in Baca County rose from 24 percent in 2010 to 25.6 percent in 2015. This compares to an over-65 population of 13 percent for the state. This demonstrates the potential for a future increase in the number and percentage of residents over age 65 in Baca County. The median household income within Baca County is \$38,625, compared to \$59,448 for the state, with an estimated percentage in poverty of 20 percent. The median home price is estimated at \$71,500 compared to a state median price of \$239,400. The county lags in the area of health insurance, with an estimated 17 percent uninsured compared to 12 percent for the state. The assessed valuation for Baca County in 2016 was \$89,509,924. This compares to the average assessed valuation of \$1,540,147,910 for the 64 counties in Colorado. The total Baca County budget for 2016 is \$9,580,769 with a 25.883 mill levy. Baca County does not have a county sales tax.

Named after a Colorado territorial legislator Felipe Baca, Baca County was created by the Colorado legislature on April 16, 1889. The landscape of Baca County is open prairie and farmland with canyons located in the west. A portion of the Comanche National Grasslands is

located within the south and west areas of the county, making it an excellent area for exploration. Baca County is largely known as an agricultural community and has been since its inception.

Two major highways with large volumes of commercial truck, tourist and agricultural traffic pass through Baca County, US Highway 160 and US Highway 287, which can prove difficult for EMS given the unpredictable weather conditions that can arise within the county. Because of the distance from definitive care, it is imperative that the county has a reliable, well-trained and competent EMS service.

Emergency Medical and Trauma Service Providers

Southeast Colorado Hospital Ambulance



Southeast Colorado Hospital Ambulance is a department of the Southeast Colorado Hospital District. The ambulances are based at a single station in Springfield and serve a more than 1,559 square mile area that includes the western half of Baca County, southern edge of Prowers County, eastern edge of Las Animas County and a small area in southeastern Bent County. They also operate the quick response team located in the town of Campo, about 21 miles south of Springfield. Southeast Colorado Hospital

Ambulance uses a team that consists of a paid and volunteer staff to provide basic- and advanced-life support service for the community. In addition to emergency responses, they also perform interfacility transfers to hospitals in nearby states and along the Front Range of Colorado. Southeast Colorado Hospital Ambulance typically can have an ambulance enroute within four minutes of dispatch to provide quality care and transport.

In 2015. Southeast Colorado Hospital Ambulance responded to a total of 464 requests for service. Of these, 145 were emergency response with transport, 103 were interfacility transports, 129 were emergency response without transport, 51 were standbys, and 36 were canceled calls. After the loss of a key staff member in November 2015, Southeast Colorado Hospital Ambulance was unable to provide interfacility transports at the same level in 2016. Through the end of October 2016, Southeast Colorado Hospital Ambulance responded to a total of 336 requests for service. Of these, 144 were emergency response with transport, 13 were interfacility transports, 84 were emergency response without transport, 54 were standbys, and 34 canceled calls. The agency plans to hire additional employees and increase the frequency of interfacility transfers in the first quarter of 2017.

Southeast Colorado Hospital District

Southeast Colorado Hospital District is a governmental special district that operates an ambulance service, a critical access hospital licensed for 23 beds, a long-term care center licensed for 56 beds, a rural health clinic, a home care agency and hospice. Typical of small facilities in rural areas, the emergency room is covered by local family practice physicians and the facility staffs at least two registered nurses on every shift. Southeast Colorado Hospital District operates the only hospital in Baca County and is also the county's largest employer.



The district is comprised of 1,559 square miles and has an assessed valuation of \$50,663,315. A 7.00 mill levy for operating expenses generates \$354,694 in property tax revenue. There is no property tax levy for bonded indebtedness. The district has a 2016 projected income of \$11,316,102 after deductions from revenue of \$6,304,120. Ambulance revenues projected for 2016 are \$783,700. On a related note, 2016 swing bed services at the hospital include projected income of \$3,159,120 before revenue deductions. Skilled care accounts for \$1,932,413 and ancillary services revenues are \$1,226,707. The swing beds provide necessary local hospital services for patients after receiving acute care at a distant tertiary care facility. Many of these patients require ambulance transportation both to and from Springfield. The swing bed service appears to be an essential component of the hospital financial picture and interfacility transfers are a key component of that service.

Walsh Ambulance Service

Walsh Ambulance Service is a department of the Walsh Hospital District. The district also operates a long-term care center licensed for 30 beds, assisted living facilities and a rural health clinic. The ambulance in Walsh has an extensive history dating back to 1929 when the ambulance was operated by the local funeral home. Walsh Ambulance Service provides basic- and advanced-life-support service to a nearly 1,100 square mile area in the eastern half of Baca County from the main station in Walsh, a satellite station in Two Buttes, and has plans to establish a quick response team in Vilas. The agency also provides interfacility transports to hospitals in nearby states and along the Front Range of Colorado. Walsh Ambulance Service does well with its 38-member paid on-call team and typically has an ambulance enroute within four minutes of dispatch to provide quality care and transport



The district is comprised of 1080 square miles with an assessed valuation of \$38,846,609. The district's 20 mill levy generated an estimated property tax income of \$776,932 for 2016. Eight percent of this property tax is dedicated to the ambulance service. The District has a total projected income from all sources of \$4,506,377 for 2016 with ambulance revenues of \$316,327 projected for the period.

In 2015, Walsh Ambulance Service responded to 169 requests for service. Of these calls, 71 were emergency response with transport, 16 were interfacility transports, 18 were emergency response without transport, 63 were standby, and there was one cancelled call. Walsh Ambulance Service increased the number of interfacility transports substantially in 2016 to help cover after the loss of key personnel on the ambulance in Springfield. Through the end of October 2016, the ambulance in Walsh responded to a total 192 requests for service. Sixty were emergency response with transport, 58 were interfacility transports, 26 were emergency responses without transport, 42 were standbys and six were cancelled calls. The increased number of emergency calls for service in 2016 is projected to continue although the number of interfacility transports is not expected to grow as fast as it did from 2015 to 2016.

Baca County Communications Center

The Baca County Communications Center serves as the public safety answering point and provides dispatch services for EMS, fire services, law enforcement, and the road and bridge department. The communication center is located at the Baca County Sheriff's Office and is normally staffed by one dispatcher per shift. Jail staff or another person from the Sheriff's Office are available if the communications center needs additional help. All dispatchers are trained in emergency medical dispatch and provide pre-arrival instructions if the caller is willing to assist the patient. The communications center currently has five full-time staff members. Employee turnover has been very low; in fact, the communications center has had the same staff for the last three years. Communications center operations are governed by policies established through the Sheriff's Office. The Town of Springfield contributes about \$15,000 per year for operations with the remainder provided by Baca County through the Sheriff's Office budget. The communications center staff works to provide clear and accurate information to responding agencies, as well as assisting the public with direction for various emergencies.

Fire Departments

The fire departments that serve Baca County are Springfield Fire Department, Walsh Fire Department, Campo Fire Department, Two Buttes Fire Protection District, Vilas Fire Department, and Pritchett Fire Department. Baca County provides a small annual subsidy to each department to ensure extrication and other essential services are available throughout the county.

The fire departments regularly train with their local EMS agencies, as well as recurrent fire operations training to include, structural, wild land, pumper operation, extrication and rapid intervention team training. Because the highway systems that pass through the county are quite busy with commercial and tourist traffic, these fire departments present an invaluable resource that can implement life safety and fire operations quickly and safely with mutual aid close by if needed. Through continued training and commitment, the fire departments of Baca County provide a well-trained and committed service to the community.



Law Enforcement

There are three law enforcement agencies that serve Baca County: Springfield Police Department, Walsh Police Department, and Baca County Sheriff's Office. The Sheriff's Office also provides search and rescue for the county in accordance with Colorado statutes. These law enforcement agencies are available to supplement EMS response, and are supplied with trauma kits which can be invaluable in the rural setting. In addition to responding to 911 emergencies within Baca County, the law enforcement agencies also provide public education and assistance to the residents they serve.

Analysis of Baca County EMS System Elements

Prior to and during the consultative visit, key participants from the countywide EMS response system and local health care facilities were asked to complete a survey rating the current EMS and trauma services and relationships in the county. In addition, county commissioners and EMS and trauma system stakeholders were interviewed during the consultative visit. The following sections take into consideration the pre-visit survey, interviews and factual data from a variety of sources.

Legislation and Regulation

Legislation and Regulation. Please rate the following on a scale of 1 - 5.5 = Strongly Agree1 = Strongly Disagree								
Answer Options	1	2	3	4	5	Don't Know	Rating Average	Response Count
The Baca County EMS resolution is current	0	1	0	3	2	12	4.00	18
The EMS agencies in Baca County EMS are currently compliant with all applicable regulations	1	1	1	6	4	5	3.85	18
The Baca County EMS system is accountable to the public for its performance	2	2	1	2	10	1	3.94	18
							<i>answered question</i>	18
							<i>skipped question</i>	1

Regulatory Overview

The state of Colorado has full regulatory authority for licensing and regulation of hospitals, skilled nursing facilities, air ambulances and most healthcare agencies. Regulatory oversight for ground ambulances is divided between state and county levels. The state has sole authority to set forth rules regulating individual EMS provider education, medical direction and scope of practice, while counties are required by statute to license and regulate ground ambulance services and issue ambulance vehicle permits. Most counties establish their ambulance licensing requirements through resolution or ordinance. Given the continual increase in clinical sophistication and complexity of EMS systems, many counties also formally establish a local, multidisciplinary council to advise the Board of County Commissioners on EMS issues.

Baca County Ambulance Resolution

The Baca County ground ambulance licensing resolution currently in effect was adopted Nov. 18, 1992. The resolution contains the standard elements seen in similar documents enacted around that time, but is unique in that it also sets standards for quick response teams. It appears the resolution has not been updated to comply with several substantial revisions to governing law enacted over the last 25 years. The resolution also requires that the Board of County Commissioners appoint a county council to advise the Board on specific emergency medical services standards although none of the current emergency medical and trauma services stakeholders have been appointed to serve. Baca County also signed an intergovernmental agreement in 2015 to provide reciprocity of ambulance licensing with the

other five counties in the region. Under this agreement, Baca County authorizes ambulances based in the other counties to provide mutual aid or transport patients from time to time.

The Baca County Board of Commissioners are clearly involved and appreciative of the emergency medical and trauma services agencies in Baca County, considering two of the commissioners currently volunteer for a fire or EMS agency and a commissioner represents Baca County on the regional council. Their knowledge and experience are invaluable for strategic planning at a county level. The commissioners did express a concern about interagency relationships and noted that improvement could greatly enhance services throughout the county.

Special Districts

Southeast Colorado Hospital District and Walsh Hospital District are both special districts governed by Title 32 of the Colorado Revised Statutes. As a political subdivision of the state of Colorado, the citizens elect a governing board that is responsible for collecting taxes and providing services as defined in the district's service plan. Functionally, the service plan is an agreement between the special district and the community it serves. Special district service



plans and other foundational documents are routinely reviewed as part of the consultative visit, but both of the hospital districts were formed so long ago that neither was able to provide a copy of their respective service plan and the Colorado Department of Local Affairs did not have the service plans on file. The importance of a current service plan became more significant recently when the Federal Emergency Management

Agency used special district service plans to document legal authorization to provide services and determine eligibility for federal disaster reimbursement.

Regional Emergency Medical and Trauma Services Advisory Council

Colorado has 11 regional emergency medical and trauma services advisory councils (RETACs) to help provide a coordinated approach to emergency medical and trauma care. Each RETAC consists of five or more counties that participate through an advisory council and is responsible for creating a regional plan to improve the quality and coordination of emergency medical and trauma services in the region. Each RETAC determines the services it will provide based on the priorities established by the council. For example, the Southeastern Colorado RETAC offers continuing medical education for providers, medical direction resources and was instrumental in creation of the 2015 intergovernmental agreement provide reciprocity of ambulance

licensing among counties in the region. Baca County has appointed representatives to the Southeastern Colorado RETAC and they actively participate in council activities.

Recommendations

- ✿ Update the Baca County ambulance licensing resolution to comply with governing law and current practices.
- ✿ Formally establish a local Emergency Services Council to advise the Board of County Commissioners on all aspects of the emergency medical and trauma services system and allocate resources for it to operate successfully. Authorization for the council can be accomplished by resolution or incorporated into a revised county ambulance licensing resolution. This council should advise the Board of County Commissioners on ambulance licensing, recommend priorities for local system development, monitor system quality, prioritize requests for supplemental local funding from Southeastern Colorado RETAC and report on current system status at least annually. This council can also serve as a forum to address operational issues and enhance interagency communication. All agencies providing emergency medical and trauma services in Baca County should be represented including:
 - Each licensed ambulance service with a base of operations in Baca County
 - Independent EMS first response agencies based in Baca County
 - Fire-rescue agencies based in Baca County
 - The search and rescue group authorized by the Baca County Sheriff's Office
 - Law enforcement agencies
 - Public safety communication centers serving Baca County
 - Baca County emergency management
 - Licensed acute care medical facilities in Baca County that receive emergency patients
 - Each state-designated trauma center in Baca County
 - EMS medical direction
 - Baca County Public Health
- ✿ Each hospital district in Baca County should update its service plan and file the service plan with the Colorado Department of Local Affairs. Although the services currently offered are authorized by statute, a plan that includes all current and future services will increase transparency for this level of government and enhance reimbursement if district resources are ever called to assist with a declared federal disaster.

System Finance

System Finance. Please rate the following on a scale of 1 - 5.5 = Strongly Agree 1 = Strongly Disagree								
Answer Options	1	2	3	4	5	Don't Know	Rating Average	Response Count
The EMS system in Baca County is adequately funded	1	2	7	3	2	3	3.20	18
The receiving hospital systems in Baca County are adequately funded	1	0	9	4	2	2	3.38	18
The Baca County EMS and receiving hospital systems are sustainable over the long term	1	2	4	7	3	1	3.53	18
Ambulance rates are reasonable	1	0	8	2	3	4	3.43	18
The public is willing to support EMS funding needs	1	1	3	9	2	2	3.63	18
Receiving hospital fees are reasonable	2	1	6	4	0	5	2.92	18
The receiving hospital systems support EMS funding needs	0	1	3	6	4	4	3.93	18
<i>answered question</i>								18
<i>skipped question</i>								1

System Finance

The emergency medical and trauma services system providers and government officials demonstrated they are clearly motivated and well trained. They were consistently helpful and worked in a collaborative manner with the consultative visit team. All of the emergency medical and trauma services agencies based in Baca County are local governments. The system is funded through the traditional sources including user fees, property tax levies, governmental transfer payments, public or private grants and donations.

Baca County

In 2016, public safety accounted for about 38 percent of the Baca County general operating budget. This included expenditures for the sheriff's office, county jail, courthouse security, county emergency management, fire control and emergency medical services. Expenses attributed to search and rescue and the county communications center are not identified separately; they are incorporated within the sheriff's office budget line. These two functions are primarily funded through the general property tax levy although the Town of Springfield makes an annual contribution of \$15,000 for dispatch services. Annual costs for search and rescue are not usually substantial and funding appears to be adequate to meet baseline needs. Funding for the communications center is marginal based on the current operating model but is clearly inadequate to bring the center up to current standards or provide for future needs.

County emergency management has a separate line in the Baca County general operating budget. The program is funded through the general property tax levy and a number of intergovernmental transfers. Based on the 2016 budget figures, the program appears to be

adequately funded to meet current and anticipated future needs unless there is a dramatic change in risk for specific hazards.

Baca County expends \$51,000 per year to augment local fire service agency budgets and compensate them for extrication, wildland fire suppression and other services provided in the county. In 2016, distributions to fire departments were \$17,500 for Springfield, \$12,500 for Walsh, \$7,500 for Campo and \$4,500 each for Two Buttes, Vilas and Pritchett. This subsidy is primarily funded through the general property tax levy. A review of expenditures at the agency level was not made during the consultative visit.

There is an expenditure in the general operating budget identified for emergency medical services. This line is directly linked to funding from the Southeast Colorado RETAC. In the past, Southeastern Colorado RETAC independently established the amount of funding to support local projects and each county in the region coordinated with the local emergency medical and trauma services agencies to create a plan for allocating these funds to improve services. The Southeastern Colorado RETAC recently migrated to a new model for the current budget cycle where agencies apply directly for project based funding. Local projects must relate to goals outlined in the RETAC biennial plan or one of the 15 emergency medical and trauma services system components. These projects will be reviewed on a case-by-case basis by the Southeastern Colorado RETAC for approval and reporting. Funding support for projects to improve local emergency medical and trauma services was set at \$10,000 per county for the 2017 fiscal year.

[Southeast Colorado Hospital District](#)

The 2016 budget for Southeast Colorado Hospital District was reviewed. The budget documents were well written and specific with respect to revenues and expenses for the full range of services the district provides. It was obvious that the fiscal constraints due to income limitations, particularly with the high number of Medicare and Medicaid patients, are being met with realistic expenditures. Southeast Colorado Hospital District operates on a modest budget and anticipates a small operating surplus for 2016 in contrast to deficits in 2014 and 2015. Expenses attributed to trauma designation are not separated from other hospital operating costs and were not evaluated directly. The relative strength of the district's financial position is related to its designation as a critical access hospital. Under this program, the hospital is not subject to the inpatient prospective payment system or the hospital outpatient prospective payment system and is eligible for reimbursement of most inpatient and outpatient services to Medicare patients at allowable cost plus one percent. Ambulance services provided by a critical access hospital can also be reimbursed at 101 percent of allowable cost but Southeast Colorado Hospital Ambulance is not currently eligible for reimbursement at this rate because another ambulance provider is located within a 35-mile drive. The ambulance service expects revenues for 2016 of about \$489,000 and operating costs are estimated at just over \$300,000. Southeast Colorado Hospital District applies the property tax revenue it receives to general operations. They are not dedicated to subsidize specific programs. The tax subsidy of approximately \$400,000 is a small fraction of more than \$11

million in net revenue generated by the district. Grants compose an even smaller portion of revenues than taxes do and appear to be focused on leveraging local funds to improve the cost effectiveness of improvements for the community. Fees for service make up the bulk of revenues and provide an adequate level of funding for district service at current levels and to meet future needs. Even so, the Southeast Colorado Hospital District had so few financial resources last year that the 50 percent match requirement for its EMTS funding request was waived and reduced to only 10 percent. Ambulance rates were on par with most other agencies in the region and but still less than half those charged by rural services with rates designed to recover the full costs for services. The district recognized the low ambulance rate schedule and has planned a review in 2017. In 2015, Southeast Colorado Hospital Ambulance Service reported a crude collection rate, collections divided by billings, of about 57 percent. After adjustments for contractual allowances and discounts, the adjusted collection rate improved to 100 percent. These collection rates are much higher than expected, especially given the demographics and payer mix of the service area. Billing for all Southeast Colorado Hospital District services is performed internally which can result in close coordination of the billing for ambulance, emergency department and inpatient services. This coordination may contribute to the remarkable 100 percent adjusted collection rate reported in 2015. This close relationship also enhances communication between the billing office and EMS providers to improve documentation from the field personnel.

Walsh Ambulance Service

The 2016 budget for Walsh Hospital District was reviewed. The budget documents were well written and specific regarding both income and expenses identifying all aspects of the district's spending plan for the services provided. It was obvious that the fiscal constraints due to income limitations, particularly with the high number of Medicare and Medicaid patients, are being met with realistic expenditures. Walsh Ambulance Service operates on a very modest budget administered by the Walsh Hospital District. Operating costs for 2016 are estimated at just over \$62,000 and capital outlay of \$225,000 for a fully-equipped ambulance is planned. The service expects net revenues of about \$289,000, including a \$31,000 tax subsidy and approximately \$178,000 in grants and contributions. Walsh Hospital District has dedicated eight percent of its property tax revenue to subsidize ambulance operations. The tax subsidy provides a stable base of funding and, when combined with net collections from ambulance billings, provides an adequate level of funding for operating the service in its current configuration. The reliance on grants for capital projects indicates revenues are insufficient to sustain the service over the long term. In fact, the Walsh Ambulance Service had so few financial resources that the 50 percent match requirement for its FY2017 EMTS funding request was waived and reduced to only 10 percent. Ambulance rates were lower than most other agencies in the region and less than half those charged by rural services with rates designed to recover the full costs for services. The district recognized the low rate schedule undervalued this service to the community and was prepared to revise ambulance rates in conjunction with the annual budget process for implementation in 2017. In 2015, Walsh Ambulance Service reported a crude collection rate of about 32 percent. After adjustments for contractual allowances and discounts, the collection rate improved to about 45 percent. The collection

rates are slightly lower than expected but still realistic given the demographics and payer mix of the service area. Billing for all Walsh Hospital District services is performed internally with one employee dedicated to ambulance billing. This close relationship is beneficial and enhances communication between the billing office and EMS providers to improve documentation by field personnel.

Recommendations

- ✿ Approximately 80 percent of the service population is covered by Medicare or Medicaid. Documentation that complies with the strict requirements established by the Center for Medicare and Medicaid Services is critical to maximize reimbursement for services supplied to these patients. Discussions with the billing personnel did not indicate any significant issue with provider documentation however it is strongly recommended that all providers continue to be well trained on these requirements and updated when new requirements are imposed.
- ✿ Consider establishing annual budget and operational objectives to demonstrate progress towards organizational goals and implementation of the district service plans. The objectives should be developed in conjunction with the providers, particularly the volunteers. An example of an operational goal can be Ambulances shall respond 120 seconds after dispatch, 80 percent of the time. An example of a budget objective can be, 80percent of rural volunteer members will be equipped with AEDs and basic medical kits. Walsh Ambulance Service has an excellent five year strategic plan that outlines a number of budgetary proposals. The transition of these proposals into annual budget objectives is a key component to the plan. Development of these types of objectives in collaboration with the paid and volunteer members identifies current issues, and, most importantly, displays a strong team building effort, particularly for volunteers.
- ✿ Develop a schedule of charges for services defensible to Medicaid, Medicare, private insurance or patients billed directly, compare to current rates as part of the annual budget process and adopt fiscally responsible changes as indicated. Potential increases in fees for service are always a difficult issue, especially for a special district that also levies a property tax. Thorough review of the effects of changes in payer mix, federal or state laws, price levels or other factors in a transparent public process accountable to the voters ensures the community receives sufficient justification. Excellent processes for the development of a defensible rate structure from the consultative visit reports for Chaffee County and Kiowa County are available.
- ✿ Deliberatively investigate the full effect of consolidating ambulance services under an organization owned or operated by the critical access hospital that is eligible to be paid 101 percent of allowable costs for ambulance transports. This reimbursement scheme appears to offer the potential for increased revenues from Medicare and Medicaid. A thorough analysis performed by the collaborative efforts of both Southeast Colorado Hospital District and Walsh Hospital District will help to determine the net gain after ineligible expenses, normalization of tax subsidies and other factors are considered. If the analysis reveals consolidation is feasible and sustainable, the two hospital districts can work together to identify an accountable organizational model that ensures equitable service and representation for all areas to be served. There is significant

mistrust surrounding this specific issue now but other aspects of the relationship between the districts are positive and strong to serve as a basis for this collaboration.

- ✿ Formally establish a local Emergency Services Council to advise the Board of County Commissioners on all aspects of the emergency medical and trauma services system. The council will need some resources for administrative functions to operate successfully. The council should also be required to create a cohesive plan each year for improvements to the emergency medical and trauma service system in Baca County to identify goals and prioritize requests for supplemental local funding from Southeastern Colorado RETAC.

Human Resources

Human Resources. Please rate the following on a scale of 1 - 5.5 = Strongly Agree 1 = Strongly Disagree									
Answer Options	1	2	3	4	5	Don't Know	Rating Average	Response Count	
The ambulance services have adequate numbers of trained EMS providers to meet	4	2	7	5	0	0	2.72	18	
The receiving hospital systems have adequate numbers of trained providers to meet demands	3	1	2	9	2	1	3.35	18	
Resiliency training is provided to EMS providers	2	0	6	6	0	4	3.14	18	
Managers in the Baca County EMS system are effective	1	1	4	4	7	1	3.88	18	
Leadership training is available for EMS managers and supervisors	0	0	1	5	1	11	4.00	18	
EMS providers are held in high regard by the community	1	2	0	3	12	0	4.28	18	
EMS providers have a high turnover rate	3	5	5	2	2	1	2.71	18	
EMS and fire agencies provide emergency vehicle operator training	1	1	2	3	7	4	4.00	18	
Safety concepts are incorporated in equipment, policies and procedures	1	1	1	5	6	4	4.00	18	
								<i>answered question</i>	18
								<i>skipped question</i>	1

Human Resources

The ambulance services in Baca County are staffed by a dedicated crew of volunteer and career providers. Their willingness to serve and personal knowledge of the community stand out as key components of the success of the emergency medical and trauma services system. These factors have been, and will continue to be, the foundation for how these agencies serve their constituents. This is demonstrated in the survey results but was also very obvious during the stakeholder interviews and discussions with members of the community.

Southeast Colorado Hospital Ambulance is staffed by a mixed group of volunteer and paid members. Four paid positions are authorized but only three are currently filled; one by an EMT-Intermediate who also serves as the director for the ambulance service and two by EMTs.

The two EMTs are new hires and recent graduates of an EMT course held at Southeast Colorado Hospital. The vacant position is posted and requires that the candidate hold a certification as an EMT or higher. The volunteer contingent is composed of five first responders, ten EMTs and three EMT-Intermediates. Full time employees are scheduled and paid for a regular forty-hour work week, plus any overtime, call back time or on-call time. Volunteers are not compensated for being on-call but are paid per call when activated. Two ambulance volunteers, one first responder and one EMT-Intermediate, work in other areas of the hospital and serve as a per-diem employees for the ambulance. Seven of the volunteers, five EMTs and two EMT-Intermediates, do not live in the area and have limited availability. The ambulance service will supplement the EMS crew with a registered nurse from the hospital when the level of care required for a particular patient surpasses the scope of practice for the available ambulance crew.

Walsh Ambulance Service is staffed almost entirely by volunteers. There is only one part-time employee, an EMT who serves as the director for the ambulance service. The volunteer staff includes seven drivers with CPR and first aid training, nine first responders, ten EMTs, one paramedic who also is a registered nurse, five registered nurses and one physician. Volunteers are not compensated for being on-call but are paid an hourly rate once activated. The hourly rate varies from \$9 to \$15 depending on the level of certification and includes time for placing the ambulance back in service and completing patient reports.

The small number of advanced EMS providers currently limits the ability to offer higher-level services to the community. Training additional paramedic personnel offers the greatest utility but there are significant impediments to pursuing this alternative. Colorado only has nine state-recognized paramedic education centers, none near Baca County, and the paramedic educational program can take 8-16 months to complete. EMT-Intermediate providers have a slightly smaller scope of practice than paramedics and require more on-line medical direction. This educational program typically takes about six months and can be offered in Baca County through the state-recognized EMT-Intermediate education center at Southeast Colorado Hospital. EMT-Intermediate is a feasible option if enough EMTs are interested in the upgrade and the community wants to have advanced level care available more frequently.

The ambulance services staff, both volunteer and career members, receive compensation for their services. There was no indication that any of the staff were dissatisfied with the amount of compensation they receive but the basis for the particular wage levels is not clear. Best practices dictate at least an annual review of compensation to ensure compliance with changes in wage and hour laws, that employees feel the wage rate, benefits and working conditions are satisfactory and levels of pay are sustainable for the organization.

Recruitment is a challenge in Baca County for a number of employers and the ambulance services. The latest group of EMS employees and volunteers are recent graduates of the local EMT class. The opening at Southeast Colorado Hospital Ambulance has been advertised locally and regionally but they have yet to find an EMT willing to relocate to Springfield and take the

position. Southeast Colorado Hospital administration expressed this has been a consistent issue for a number of positions throughout the hospital. The hiring methodology which has had the most success for licensed or certified positions appears to entail hiring local residents who have pursued additional education to get the license or certification and then stayed in Baca County. This methodology is used frequently in rural and frontier areas throughout the state. Personnel retention is also an ongoing issue. A major impact on retention is the movement of the younger generation, in general, out of Baca County. According to the state demographic office, during the period 2010 to 2020, the 15-30 age range is projected to have a significant net migration from Baca County. The EMS workforce is perhaps even more inclined to migrate from the area. Generalizations regarding groups of people are difficult to document, but experience has demonstrated that many EMS providers seek the excitement and challenges of emergency services. They often move to more urban areas with busier systems where they feel more challenged and attain greater experience. Low call volumes, along with an even smaller number of calls being serious enough to require transport, pose additional challenges for EMTs. The lack of frequency in being able to utilize their skills often leads to a lack of self-confidence and decreased motivation to continue as an EMS provider. Another factor unique to Baca County concerns the accident which occurred in 2015. Some EMS staff members stated it is difficult to be part of a service that has had such a tragic loss.

Both ambulance services have a number of long term EMS volunteers. This core group of individuals helps to retain staff by bringing stability to the organization and assists with recruitment as a respected neighbor, friend, mentor or leader for other members of the community. They also represent a powerful constituency and an essential perspective to consider in any strategic decision-making process for the organization.

Baca County is fortunate to have two dedicated individuals to lead the ambulance services. Their dedication and devotion to serve the community are strengths of the system but the reliance on them is also a weakness and potential point of system failure. With such limited numbers of advanced care providers, the one full time paid EMT-Intermediate shoulders most of the responsibility for providing advanced prehospital care and spends a significant amount of time with response and on-call duties. This same person is also the director for a service and must fulfill the important responsibilities associated with that position. Over time, the "working manager" organizational structure in place at Southeast Colorado Hospital Ambulance will not offer sufficient time to develop operating procedures, monitor billing, engage in strategic planning and perform other administrative functions essential to sustain the operation. The part-time director configuration at Walsh Ambulance Service creates a similar circumstance. The director must maintain full-time employment somewhere else leaving insufficient time to manage and sustain the ambulance service. In either case, there is significant potential for the director to suffer from emotional and physical exhaustion from the stress of the excessive workload (i.e. "burnout"). The system also risks the loss of irreplaceable institutional knowledge should one of these individuals separate from the service. The workload is currently manageable for these individuals but it must be regularly monitored to avert a problem in the future. Likewise, both ambulance services need to create

a resilient structure to maintain continuity of the institutional knowledge and assist the agency directors with coordination of services.

Recommendations

- ✿ Enhance EMS provider retention through increased provider confidence and job satisfaction.
 - Create training opportunities for EMS providers focused on critical skills used infrequently on high-acuity patients. Identify critical skills, assess provider confidence with skill performance and design training to develop skill mastery using learning principles developed by other health care disciplines, the military, law enforcement and fire services.
 - Create training opportunities for EMS providers to work collaboratively with other emergency medical professionals with a higher level of training or education. Schedule EMS providers to work in the hospital emergency department to enhance skills, develop professional relationships and better integrate with the continuum of medical care.
 - Consider creating part-time positions in the emergency department at Southeast Colorado Hospital for EMS providers to support the hospital staff during periods of high demand. Emergency departments at hospitals throughout the nation use EMS providers of all levels as a staffing resource. As coworkers, the hospital staff and EMS providers will develop professional relationships, mutually assist and support one another within their scope of practice and enhance skills for EMS providers in a clinical environment under the supervision of higher-level medical staff.
- ✿ Positive recognition of personnel who perform quality work is important but there is an additional dimension with respect to emergency services volunteers. They are called away on a moment's notice and forego sleep, time with loved ones or shift workload to other employees. These volunteers could not serve without the support of their families, friends or coworkers and appreciation for this support system is just as essential. The emergency medical and trauma services agencies should refine current recognition programs and create new offerings to acknowledge the contributions from EMS providers, their families and employers to enhance EMS provider retention.
 - Formal recognition such as Volunteer of the Year, Most Hours On-Call, Most Supportive Family or similar accolades can prove to be beneficial.
 - Collaborate with local mass media to get articles in the newspapers or radio reports about the service and, most importantly, specific individual's contributions.
 - Gatherings such as dinners, potlucks or picnics to recognize agency personnel and their families, and build relationships outside the demands of emergency services.
 - Use newsletters, social media posts and other media to provide information about the service and the people providing service.
 - Maintain a high-quality, current web site including information on agency activities and photos of personnel and equipment.

- Post bar charts with the number of hours on call or other measures and award incentives for reaching certain milestones.
- ✿ Both ambulance service directors have accumulated a substantial volume of institutional knowledge during their respective tenures. It is important for each of them to catalog this knowledge so that it may be passed on to others in case of their absence or separation from the organization. Each ambulance service director should create an accessible record of tasks or procedures and standard operating guidelines to serve as a reference for successors, supervisors and delegates.

Medical Direction

Medical Direction. Please rate the following on a scale of 1 - 5.5 = Strongly Agree 1 = Strongly Disagree								
Answer Options	1	2	3	4	5	Don't Know	Rating Average	Response Count
The medical director actively participates in the EMTS system	1	1	0	10	5	1	4.00	18
The medical director regularly monitors clinical performance	0	2	3	5	2	6	3.58	18
The medical director is directly involved with decisions of the EMTS system	0	1	3	6	5	3	4.00	18
The medical director regularly participates in the program or clinical improvement process	1	1	3	5	3	5	3.62	18
<i>answered question</i>								18
<i>skipped question</i>								1

Medical Direction

Each ambulance service in Baca County currently has its own medical director. Each physician has served in this capacity for about one year. Prior to that, both agencies had the same medical director for more than 25 years. Both of these physicians practice at the medical clinics in Springfield and Walsh in addition to seeing patients at Southeast Colorado Hospital. Dr. Holsworth, the medical director for Walsh Ambulance Service, spends about half of each month in Baca County and works with a medical research company in Denver the rest of the time. Dr. Holsworth regularly attends one training night a month at Walsh Ambulance Service and reviews cases or assists in other training activities. He is also the medical director for the trauma program at Southeast Colorado Hospital. Dr. Wismann, the medical director for Southeast Colorado Hospital Ambulance, practices family medicine in Springfield and Walsh. She also serves as the medical director for the Baca County Public Health Agency. Dr. Wismann participates in at least one training per month with Southeast Colorado Hospital Ambulance. She admits that she is still learning the role of EMS medical director and would like some guidance from other physicians with more experience. The RETAC coordinator and staff from the Emergency Medical and Trauma Services Branch have been good resources, and the regional medical direction will also be a good resource.

Dr. Troup is a family physician from Kansas who serves as the medical director for the clinic in Walsh and provides medical direction for EMS agencies in southwestern Kansas. He has no

formal role in EMS medical direction for Baca County, but is an important resource to Walsh Ambulance Service because of his experience and role in the community.

Recommendations

- ✿ Assure medical oversight and effective quality management for all facets of the emergency medical and trauma services system in Baca County. This includes clinical aspects such as pre-arrival instructions to the public from emergency medical dispatch personnel and treatment protocols for EMS providers but also operational considerations such as determinants to categorize the level of response to calls for service or participation in the selection of personnel.
- ✿ Case review education is often the most beneficial modality to provide training for EMS providers. Medical directors should strive to make this option available as well as attend and lead such activities. The medical directors and EMS leadership should coordinate case review trainings to include providers from Southeast Colorado Hospital, including field providers and facility staff, and Walsh Ambulance Service. As much training as possible should consist of joint opportunities that facilitate both simultaneous learning and comradery between the agencies.
- ✿ Provide expert guidance and support for the agency EMS medical directors. Make use of resources offered by the Southeastern Colorado RETAC regional medical direction program such as the regional meeting for agency medical directors and command staff, information from quarterly newsletters, regional CQI process, rural emergency department physician training on EMS scope of practice, trip sheet reviews and case studies, continuing medical education and protocol development to enhance knowledge and develop a network of colleagues. Connect with the state EMS medical director and make use of support for agency medical directors and other resources available through the department.
- ✿ Consider a single medical director for the EMS system in Baca County. This might serve to provide consistent levels of service, uniform educational opportunities and medical oversight. There are a variety of models for countywide medical direction across the state including consensus among the EMS providers and medical practitioners in the community, selection by a county emergency services council and appointment by the Board of County Commissioners. Consolidating EMS medical direction may increase workload for the EMS medical director, and a variety of models exist to accommodate these demands. Communities with volunteer medical direction sometimes rotate the position among the physicians in a community with each taking on the additional EMS duties for a period of time while other practitioners shoulder increased patient loads. Another alternative is to have one physician serve as the lead and coordinate components of the process assigned to associate EMS medical directors. Compensated models include a base hospital incorporating EMS medical direction into the physician's assigned duties, paying a fixed amount for medical direction during a specified period of time or by some measure of requests for service, or providing access to the agency's benefit package.
- ✿ Neither EMS medical director receives compensation for services. If the current model for medical direction is continued, the EMS community should consider some type of financial stipend. The physicians currently providing medical direction have very busy

practices without their EMS responsibilities. Some sort of stipend would at least convey gratitude for the time they devote to EMS.

Clinical Care

Clinical Care. Please rate the following on a scale of 1 - 5.5 = Strongly Agree1 = Strongly Disagree								
Answer Options	1	2	3	4	5	Don't Know	Rating Average	Response Count
Critical care interfacility transport is available	2	2	3	5	5	1	3.53	18
The quality of EMS clinical care is consistent across Baca County	1	4	4	4	4	1	3.35	18
EMS protocols are current	1	0	2	3	8	4	4.21	18
Protocols are coordinated between EMS agencies	3	1	3	3	1	7	2.82	18
EMS and hospital care providers are well trained	1	2	3	3	7	1	3.81	17
EMS and hospital care providers are experienced	0	1	8	5	3	0	3.59	17
The EMS system meets receiving hospital expectations	0	1	1	7	6	3	4.20	18
<i>answered question</i>								18
<i>skipped question</i>								1

Clinical Care

Stakeholders interviewed generally felt that the EMS clinical care was very good at both the basic- and advanced-life-support levels in both ambulance agencies. Southeast Colorado Hospital Ambulance employs one EMT-Intermediate full-time and has three more on the volunteer roster. Walsh Ambulance Service has one volunteer who is a paramedic and registered nurse. All of the volunteer providers have limited availability due to other employment responsibilities and prehospital care in Baca County is provided predominately at the basic level. No patient care records were evaluated and no direct assessment of clinical care was made at any emergency medical and trauma services agency for this review.

There are frequent training opportunities for EMS providers at both ambulance services however combined trainings for personnel from Springfield and Walsh are rare. Both agencies appear to provide some review of care internally but there are no organized, joint efforts for county-wide clinical quality assessment. There are on-going patient care quality improvement meetings occurring within the hospital as a requirement for maintenance of its Level IV trauma designation. Southeast Colorado Hospital Ambulance has been invited to attend those meetings and contribute to these reviews as needed but joint reviews of non-trauma patient care are not happening. Follow up on EMS patient outcomes was available, if requested the ambulance service.

Southeast Colorado Hospital Ambulance has three full-time employees and is in the process of hiring a fourth. These four positions do not enable the service to have 24/7 coverage for response from the station and volunteer staff provide coverage the majority of time. The full-time staff are scheduled to provide coverage during regular work hours when volunteer staff are not available rather than minimize dispatch to enroute times overall. Stakeholders expressed satisfaction with ambulance response times, quality of care and the level of service. Walsh Ambulance Service is staffed entirely by volunteers who respond to the station from home or work. Stakeholders were very satisfied with ambulance response times, quality of care and the level of service for an all-volunteer agency.

Overall, the dispatch to enroute times and dispatch to on scene times in Baca County are reasonable and on par with volunteer agencies serving similar communities.

Field Activation of Air Medical Services

Field activation of air medical services was a frequent topic of discussion. The availability for scene response by air medical increased significantly when a helicopter ambulance was based in La Junta last year. Flight times to scenes in parts of Baca County are now short enough that air medical can realistically be used to transport critical patients directly from the scene to definitive care. Stakeholders reported it is rare for Southeast Colorado Hospital Ambulance to activate air medical for a scene response. It is more common practice to transport a critically ill or injured patient to the hospital and activate air medical to fly to the hospital. The agency's procedure to request this resource is not clearly understood based on variations in interpretation expressed by different staff members. The Walsh Ambulance Service protocols provide a detailed outline of the indications and procedure for activating a scene response for an air medical helicopter.

Protocols

Southeast Colorado Hospital Ambulance did not provide a copy of their protocols for review. The review team was advised that the protocols were based on the Southeastern Colorado RETAC protocols, but there were some modifications to incorporate elements of regional protocols from other jurisdictions nearby. Walsh Ambulance Service protocols were available and are essentially the RETAC protocols. They are thorough and appear adequate.

Other Emergency Response Agencies

Fire departments throughout Baca County normally are only called to respond for motor vehicle crashes unless requested by the ambulance service for other calls. An ambulance is



called to stand-by at fire scenes or as requested by the fire department for other situations.

In the area served by Southeast Colorado Hospital Ambulance, law enforcement does not respond to EMS calls unless requested. The relationship that the hospital and ambulance service have with the Springfield Police Department and, to a lesser extent, the Baca County

Sheriff's Office, was described as difficult during the stakeholder interviews. Numerous disagreements between these organizations were identified during the stakeholder interviews and led to the current situation. In Walsh, local law enforcement carries an AED and routinely responds to assist the ambulance service on calls.

Interfacility Transports

The majority of interfacility transports from Southeast Colorado Hospital are accomplished by air ambulance. When air transport is not available, or not indicated, ground transport is typically provided by Southeast Colorado Ambulance or Walsh Ambulance Service. A registered nurse will supplement the ambulance crew if a particular patient requires care that surpasses the scope of practice for the available EMS providers. Transport decisions appear to be based more on the availability of a particular resource rather than through a collaborative process involving the transport agencies. In the past year, Walsh Ambulance Service has provided a larger proportion of these ground transports. Some stakeholders indicated this was due to a greater availability of experienced crews from Walsh. There is a paramedic ambulance service based in Otero County that offers interfacility transport services but they are seldom called due to the length of time it takes to drive from Rocky Ford. As noted above, the majority of EMS care is provided at the basic level including ground interfacility transport.

EMS Dispatch

EMS dispatch services are handled by the Baca County Communications Center. An emergency medical dispatch protocol is utilized that arrives at a determinant to identify appropriate EMS resources and mode of response needed for the incident. The emergency response agencies in Baca County have not assigned resources and a mode of response to these dispatch determinants to guide responding agencies. The communications center is also prepared to offer citizen bystander CPR instructions in those cases that are presumed cardiac arrest. Stakeholders estimated the reporting party does not want to do CPR about 90 percent of the time. There is no retrospective review of dispatch records by an appropriate healthcare

professional to assess compliance with emergency medical dispatch protocols. Incoming 911 calls and communications between dispatch and response units in the field are recorded. Radio and wireless telephone communications between field providers and the physician at the hospital are not recorded.

Use of Lights or Siren during Response or Transport

An estimated 75-80 percent of scene responses for Southeast Colorado Hospital Ambulance and all scene responses for Walsh Ambulance Service involve an emergency (lights and siren) response. Emergent returns to the hospital are less than 25 percent of calls for both ambulance services. Operating an emergency vehicle with lights or siren during response or patient transport is associated with a higher risk of being involved in a traffic crash. Both services are to be commended for utilizing non-emergent transport mode the majority of the time, but there are ample opportunities for reducing the use of lights or sirens overall through a collaborative effort between the communications center, ambulance services and medical direction.

EMS Vehicles

Southeast Colorado Hospital Ambulance operates a fleet of five vehicles. Two are conventional Type I ambulances, two are large sport utility vehicles that have been modified for patient transport and a one is Type I ambulance that is used as a quick response vehicle. The converted sport utility vehicles have primarily been used for transporting patients from the hospital in Springfield to distant tertiary care centers. The low roof does not allow a patient to sit upright or permit full gravity flow of intravenous fluids. The cabinet and seating configuration restrict access to the patient and limit the range of treatments that can be administered during transport. Walsh Ambulance Service operates a fleet of three conventional ambulances; one Type I and two Type III units. An additional Type I unit is on order and will be added to the fleet by the second quarter of 2017.

AED Availability

Early defibrillation is associated with increased survivability of sudden cardiac arrest. AEDs are located in the schools and a number of other public buildings where they are accessible to the community. The law enforcement agency in Walsh is equipped with AEDs and regularly responds on EMS calls to assist the medical units. The other law enforcement agencies do not carry AEDs but their personnel have been trained to use them and would be amenable to having AEDs in their vehicles.

Recommendations

- Increase joint training opportunities for EMS providers in both Springfield and Walsh. This will build familiarity with each service and enhance comradery, as well as education. Combining the monthly education offerings at each service and perhaps alternating the location between both agencies will be beneficial.
- Increase formal educational interactions between the hospital and both ambulance services. This could be done in conjunction with the combined educational offerings described above. Training involving the hospital should include patient follow-up for

patients transported by EMS. Case review formats are an excellent vehicle to identify training needs and to ensure interest on the part of the learners, since they involve patients that EMS provided care for.

- ✿ Establish a local Emergency Services Council to advise the Board of County Commissioners on the emergency medical and trauma services system and provide a platform for on-going evaluation of the system including dispatch coordination with EMS operations, general information on quality improvement oversight of EMD, quality improvement issues related to the provision of EMS in the county, protocol changes, issues affecting the relationships between emergency services agencies.
- ✿ Work collaboratively with all emergency services agencies in Baca County to enhance participation in EMS calls. Fire departments are an important resource in scene management and law enforcement officers, with appropriate equipment and oversight, can provide early defibrillation or other lifesaving emergency interventions.
- ✿ Work toward some increase in the number of advanced life support providers in Baca County. While it appears that basic care is adequate in the majority of cases, an increase in advanced care may be beneficial for select patient complaints. EMT-Intermediate would be sufficient for most prehospital situations but the expanded scope for paramedic providers could be advantageous when interfacility ground transport is necessary. The potential for deterioration of these patients and benefits from paramedic-level interventions may be greater in the interfacility arena. Establish a consistent policy for interfacility transports using a collaborative decision model that incorporates perspectives of the facilities, physicians, nursing staff and EMS providers potentially involved in the specific transport to ensure the patient can be transported safely and receive appropriate care. In addition, each transport is reviewed for appropriate utilization by a multidisciplinary team through a joint quality management process. The framework developed by the Northwest RETAC (attach as an appendix) can be adapted for use based on the specific resources available in Baca County.
- ✿ Depending on volume of ground interfacility transports, longer term consideration might be given to the establishment of a critical care ground transport program based in Baca County.
- ✿ Synchronize EMS protocols for both Southeast Colorado Hospital Ambulance and Walsh Ambulance Service as much as possible. This would better serve to provide consistent levels of service, uniform educational opportunities and concurrent medical direction.
- ✿ Develop a standard protocol for field activation of air medical services for use by all emergency response agencies in Baca County, provide consistent training for its application and review each activation for appropriate utilization by a multidisciplinary team through a joint quality management process. The Southeastern Colorado RETAC protocols should serve as the basis and modified, if appropriate for the benefit of patients, based on the circumstances specific to Baca County.
- ✿ Unrestrained vehicle occupants are at significantly greater risk of injury or death, and pose a risk to other vehicle occupants, in the event of a crash. Southeast Colorado Hospital Ambulance and Walsh Ambulance Service should have written policies and ensure that occupants in the front seat of any emergency vehicle are restrained by a seat belt and shoulder harness any time the vehicle is in motion. Further, any patient or other person riding in an emergency vehicle be properly restrained any time the vehicle is in motion. This includes the use of all cot straps as designed by the

manufacturer. Finally, both services should develop a culture of safety that emphasizes use of shoulder and seat belt restraints for any provider in the patient care compartment as much as possible. This culture emphasis should include promoting the concept of implementing the vast majority of patient care interventions when the emergency vehicle is stationary, facilitating the use of restraints when the vehicle is in motion.

- ✿ Restrict the use of converted sport utility vehicles for patient transport. Develop written guidelines identifying the limited types of patients that can be transported safely given the constraints imposed by the vehicle configuration and assess utilization as part of the ongoing quality management review. Avoid the use of such vehicles in any interfacility transport or any transport of a presumed critically ill or injured patient because of limited patient access in such vehicles. Consider repurposing the converted sport utility vehicles for use by quick response teams. The patient transport capabilities of these vehicles are more suitable for evacuating patients from remote areas to the closest point of access for an ambulance.
- ✿ Use of emergency lights and siren should be reduced during scene response and patient transport by EMS agencies operating in Baca County. This can be accomplished for scene responses by EMS medical direction and agency leadership working with the communications center to assign an appropriate response mode configuration to each emergency medical dispatch determinant. Response mode configurations should identify the specific agencies that are needed to effectively manage the incident type and the response mode, emergent or routine, appropriate for each unit. Emergency patient transports can be decreased through careful review of current practice to identify the actual frequency of emergent returns and the limited number of patient conditions that would benefit from emergent transport to the hospital. Incorporate dispatch response mode recommendations into the training for providers in all emergency response agencies to reduce unwarranted use of lights or siren. Medical oversight should include dispatch quality management review, compliance with response mode configurations and ongoing evaluation to assess effectiveness of response mode configurations.

Education Systems

Education. Please rate the following on a scale of 1 - 5. 5 = Strongly Agree 1 = Strongly Disagree									
Answer Options	1	2	3	4	5	Don't Know	Rating Average	Response Count	
Quality initial EMS provider education is available	2	3	1	2	8	2	3.69	18	
EMS agencies provide continuing medical education for their employees or volunteers	1	0	1	7	7	2	4.19	18	
EMS agencies have access to high quality training equipment	1	5	5	5	0	2	2.88	18	
There is opportunity for EMS and fire agencies to train together	1	2	1	4	7	3	3.93	18	
There is opportunity for EMS agencies and hospitals to train together	1	1	2	3	10	1	4.18	18	
								<i>answered question</i>	18
								<i>skipped question</i>	1

Rural communities typically struggle to supply initial training and continuing education for emergency medical and trauma services providers. Meager financial resources make it difficult to pay the cost of tuition, instructors and educational materials or purchase and maintain sophisticated training equipment. It is often a challenge just to maintain continuous service to the community during educational sessions with limited staff. Baca County is fortunate to have local access to initial training and continuing education for EMS providers. Southeast Colorado Hospital is a state-recognized EMS education center. Designation as an education center allows them to provide both initial training and continuing education for EMT, Advanced EMT and EMT-Intermediate personnel.

Walsh Ambulance Service recently became a state-recognized EMS education group. This designation allows them to offer continuing education for EMT-Advanced EMT, EMT-Intermediate and paramedic providers. Southeast Colorado Hospital held an EMT course earlier this year. Seven students completed the course and have passed the National Registry practical skills examination. Six of the seven students have also passed the National Registry written exam. The seventh student is scheduled to take this exam soon. This demonstrates a very high rate of success for an EMT course. Local EMS continuing education offerings are adequate for basic level providers. Both programs appear to have a robust continuing education agenda. Course offerings are planned out for at least one year and they appeared to be structured to allow a basic provider to acquire enough hours in the required topic areas during a certification cycle. Continuing education requirements for the three advanced-level EMS providers are more extensive. Standard courses such as ACLS, PALS and ASLS that require renewal every two years are offered locally but are not sufficient for the advanced providers to maintain competency or certification. This small group must travel out of the area to acquire enough hours in the required topic areas but the agencies appear to be supportive of more diverse education opportunities such as attendance at regional, state and even national

conferences. Professional nursing education is not available in Baca County. The closest program is about 45 miles away at Lamar Community College. Southeast Colorado Hospital is a state-approved Nurse Aide education program to provide an entry into the health care professions at a facility. The hospital has allocated resources to ensure their staff is able to maintain competency and required credentials. Southeast Colorado Hospital does not have a structured training program for developing new managers but the management staff has had access to some leadership training. Neither ambulance service director has attended industry-specific leadership or management training. All emergency medical and trauma services agencies in Baca County are eligible for training grants through the CREATE (Colorado Resource for Emergency and Trauma Education) program administered by the Colorado Rural Health Center. None of the eligible agencies have taken advantage of this opportunity. CREATE accepts applications monthly throughout the year to help fund tuition, required fees, books and travel expenses. Grants require a 50 percent cash match unless the applicant requests a waiver and can demonstrate financial need. These grants have helped agencies across the State of Colorado to train new providers, upgrade skills for existing personnel and maintain credentials to comply with regulatory requirements.

Recommendations

- ✿ Link continuing education programs to the quality management process. The existing continuing education processes appear to cover the requirements to maintain credentials reasonably well. Connecting the two processes will advance the agencies to the next level where education can reinforce existing strengths and bolster identified weaknesses in the system as well as for individual providers. This is particularly important for advanced-level providers who may be performing higher-level skills infrequently based on the relatively low volume of patient contacts.
- ✿ Consider coordinating EMS continuing education activities between Southeast Colorado Hospital Ambulance and Walsh Ambulance Service. Shared efforts can enhance the quality of education by using instructors with special expertise to present specific topics regardless of their agency affiliation. Working together on EMS continuing education can also avoid duplicative efforts such as presenting similar topics by two different instructors at about the same time. Coordinated education also creates an opportunity for providers from different agencies to train together and improve operations on responses with multiple agencies.
- ✿ Provide industry-specific leadership and management training for the ambulance service directors. Both ambulance service directors are new and, from all appearances, they have performed well, however, it is important that they each receive the necessary tools to guide and help with the multitude of issues that new and inexperienced ambulance service managers face. Initially consider course offerings like the National Fire Academy-Management of Emergency Medical Services, American Ambulance Association-Ambulance Service Management, Northwest RETAC EMS Leadership Conference and the National Rural EMS Conference and provide funding, travel, backfill or other support necessary for the director to attend.
- ✿ Review scheduled emergency medical and trauma services education and evaluate opportunities for funding assistance. Make use of resources from the Colorado Rural

Health Center, Lamar Community College Financial Aid office and Southeastern Colorado RETAC to help identify grants and scholarships available to providers serving Baca County.

Communications and Public Access

Public Access and Communications Please rate the following on a scale of 1 - 5.5 = Strongly Agree 1 = Strongly Disagree									
Answer Options	1	2	3	4	5	Don't Know	Rating Average	Response Count	
Emergency medical instructions are provided to callers when dialing 9-1-1	0	2	0	2	7	7	4.27	18	
Interfacility ambulance transport is available when needed	2	0	4	5	6	1	3.76	18	
The public can access 9-1-1 in all areas of Baca County	1	1	1	5	6	4	4.00	18	
There are enough EMS response units to provide a quick response to every call	1	5	2	5	4	1	3.35	18	
Local cell phone coverage is adequate	4	2	8	2	1	1	2.65	18	
Public safety agencies have an effective radio system	1	1	6	6	3	1	3.53	18	
Fire and EMS have the ability to communicate over the radio	1	0	0	3	13	1	4.59	18	
Adjoining areas for mutual aid have the ability to communicate with local EMS and fire agencies over the radio	0	3	1	6	5	3	3.87	18	
								<i>answered question</i>	18
								<i>skipped question</i>	1

Communications and Public Access

The Baca County Communications Center is the designated public safety answering point for the county. Enhanced 911 service is available and the communications center can receive automatic number identification and automatic location identification information from all telephones in the county connected to the wired telephone network. Wireless telephone service is considered adequate throughout most of Baca County. Dead zones without service are scattered across the county and vary by mobile telephone carrier. Phase I Wireless Enhanced 911 service, with name, telephone number and location of the cellular tower connected to the caller, is available for all wireless calls but Phase II Wireless Enhanced 911 service varies depending on the ability of the mobile telephone carrier to provide latitude and longitude coordinates for the caller. The communications center enters the address, or coordinates if Phase II information is provided by the caller's mobile telephone carrier, into Google Maps to display a caller's location as a substitute for integrated electronic mapping capability.

Baca County uses the state digital trunked radio system for public safety communications and responder notification. Radio coverage for this system is considered to be adequate, with the exception of the canyon areas in far southwest Baca County. The state digital trunked radio system is the only operational public safety radio system in the county. Response agencies

must rely on the commercial mobile telephone network for communications if the public safety radio system is down. The Baca County Communications Center provides dispatch services for EMS, fire, law enforcement, and the road and bridge department. There is no paging system, voice or text, to notify public safety agencies to respond to an emergency. EMS dispatch and control is assigned to the Baca MAC channel. Baca MAC is also used for multijurisdictional incidents in the county. The communications center does not have the capability to contact emergency response units from Kansas or Oklahoma directly by radio. Information must be relayed through the appropriate dispatch center by telephone. Southeast Colorado Hospital Ambulance and Campo Quick Response Team crews must carry a portable radio and continuously listen for an emergency alert tone on Baca MAC for notification. Personnel for Walsh Ambulance Service are notified using the Zello walkie talkie app on their personal mobile telephone. All ambulances within the county are equipped with a mobile radio to communicate with the communications center, other emergency response units, the hospital or medical control physician.

When an emergency call is received, the dispatcher looks up the location on Google Maps and then refers to a paper map showing response areas to determine which agencies should be notified. This system is prone to errors and many stakeholders complained that responses are frequently assigned to the wrong agency. Records for each call are manually entered into a system developed internally on Microsoft OneNote. The communications center also maintains audio recording of voice communications on the two incoming 911 trunk lines, Baca MAC and the local law enforcement channel.

Communications between field units and the hospital emergency department for medical direction or patient reports use the talk group assigned to Southeast Colorado Hospital on the state digital trunked radio system or a telephone line that rings through directly to the emergency department. The EMS medical director for the ambulance in Springfield also has a portable radio and can communicate on the hospital channel to facilitate consultation with providers in the field or provide direct verbal orders. The communications channels used for on-line medical control are not recorded and cannot be reviewed for educational purposes, compliance audits, case studies or quality management.

Recommendations

- Develop a public safety radio system to provide paging and backup communications for Baca County. A preliminary propagation study (Appendix D) indicates a single 100-watt transmitter with an antenna on the tower at the Sheriff's Office in Springfield could provide adequate coverage for most of the county to bring notification of public safety emergency response agencies up to the current industry standard. The department has an EMTS Telecommunications Coordinator on staff to provide technical assistance and several different agencies offer grant programs to help with funding. Enhanced 911 surcharge fees can also be used to help fund these upgrades for the communications center.

- ✿ Formally establish a local Emergency Services Council that includes representation from the communications center to advise the Board of County Commissioners and serve as a forum to address operational issues and enhance interagency communication.
- ✿ Enhance recording capabilities to capture communications on all telephone lines answered in the communications center, all public safety radio system channels used for EMTS notification or communications in the field and all telephone lines and public safety radio system channels used for communications between field providers and EMS medical direction. Improve capabilities to manage and maintain recordings for quality improvement activities and risk management.
- ✿ Upgrade to a fully-integrated computer aided dispatch system in the communications center including text pagers for field personnel and mobile data terminals for emergency response vehicles to provide incident mapping, vehicle routing and GPS location tools, location history or hazards and pertinent medical information. Automate links between functions to improve efficiency and accuracy of call processing, dispatch and control for field units, records management and electronic patient care reports.
- ✿ Explore the possibility of developing partnerships with other jurisdictions in the region to create a shared system of communications center services. Models for shared services range from a simple contractual arrangement to pay for capacity in an existing center to creation of a new authority accountable to participating jurisdictions operating a consolidated communications center and providing enhanced services to the public. Sharing communication center services offers significant potential for cost savings or service improvements in comparison to operating a stand-alone center.

Information Systems

Information Systems. Please rate the following on a scale of 1 - 5.5 = Strongly Agree 1 = Strongly Disagree									
Answer Options	1	2	3	4	5	Don't Know	Rating Average	Response Count	
Ambulance services collect and upload electronic patient care data to the state system	1	0	0	0	10	6	4.64	17	
EMS system data is regularly collected and analyzed	1	0	0	2	6	8	4.33	17	
The ambulance and hospital electronic health records are integrated	5	1	1	1	2	7	2.40	17	
EMS has good access to broadband internet service	1	1	5	3	2	5	3.33	17	
EMS website is up-to-date	0	1	1	1	4	10	4.14	17	
EMS agencies and receiving hospital systems collaborate on trauma registries	0	1	2	5	2	7	3.80	17	
								<i>answered question</i>	17
								<i>skipped question</i>	2

Information Systems

The Baca County emergency medical and trauma services system is generally using current technology for patient care reporting and data collection. Southeast Colorado Hospital is in the process of moving to the electronic health record from Athena Health. All licensed ambulance services in the county use electronic patient care report systems and are current on state data submission requirements. Southeast Colorado Hospital uses the ImageTrend program provided by the state for patient care reporting although they may migrate to the Athena Health electronic health record if it can be adapted for prehospital use. It is not certain this product can be modified to be used for EMS documentation in the field and to comply with state EMS data reporting requirements. Walsh Ambulance Service uses the iPCR system for patient care reporting. The quick response team in Campo uses handwritten paper reports and provides a copy to the transporting ambulance crew when hand off the patient. Both ambulance services provide a hard copy of the patient care report but neither is able to directly share information electronically with the hospital in Springfield. The Baca County Communications Center records call information in a system that was developed internally using Microsoft OneNote. This system is not linked to the ambulance patient care reporting systems to directly populate the pertinent fields with dispatch information. Access to reliable broadband Internet varies across Baca County with robust connectivity in the more populous areas and sporadic to no access in the more rural areas.

Recommendations

- ✿ Consider increased and enhanced use of information that is currently available. Collect, analyze and monitor data from prehospital patient care reports to identify excellent performance, areas in need of improvement or other trends, and incorporate those findings in the quality management process. This can help focus content for EMS continuing education or skills review sessions.
- ✿ Consider coordinating EMS data. Migrate all EMS agencies to a common patient care reporting system. This will enhance the ability to aggregate information to monitor and evaluate EMS system performance throughout Baca County. This can help to optimize EMS system function and demonstrate the value of EMS to the community.
- ✿ Consider establishing links between data systems for all emergency medical and trauma services agencies. The ability to share data across the spectrum of patient care can be used to monitor the quality of care for individual patients or combined to assess any aspect of system performance. These links can also reduce errors and save time by reducing duplicative data entry.

Public Education and Prevention

Public Education and Prevention. Please rate the following on a scale of 1 - 5.5 = Strongly Agree 1 = Strongly Disagree								
Answer Options	1	2	3	4	5	Don't Know	Rating Average	Response Count
The public understands and supports the local EMS and trauma care system	0	3	2	5	5	2	3.80	17
Regular efforts are made to inform the public about EMS and trauma care	1	2	2	8	2	2	3.53	17
Regular efforts are made to inform policy makers about EMS and trauma care	1	2	1	6	2	5	3.50	17
Local injury and illness data is analyzed regularly	0	1	1	4	2	9	3.88	17
Prevention programs are developed based on local needs	2	0	3	4	2	6	3.36	17
Prevention programs are regularly offered to the community	3	0	3	4	1	6	3.00	17
<i>answered question</i>								17
<i>skipped question</i>								2

Public Education

Baca County emergency medical and trauma services agencies provide public education to the extent possible given the resource constraints. Both ambulance services offer community CPR and first aid classes at no cost to the student. Classes are offered monthly in Springfield and the goal is to make this training available about four times per year in Walsh. The ambulance services also help the school districts in Baca County by providing annual CPR and AED training. Walsh Ambulance Service also has staff trained to offer Wilderness First Aid, Wilderness Emergency Care, Child and Babysitting Safety and Emergency Medical Responder courses. Southeast Colorado Hospital District has cultivated a good working relationship with the local newspaper and periodically provides public information about topics of current interest. Walsh Ambulance Service holds an annual EMT craft show to promote interaction with the community and recruit new members. Both hospital districts in Baca County provide support the Channel 9 Health Fair each year and typically have a booth with public education materials. Baca County Public Health focuses its public education efforts towards immunizations and other population-based health issues.

Southeast Colorado Hospital District has a website with variety of information about the district, services, facilities, a patient portal, employment opportunities, upcoming events and links to other organizations in the community. The site is easy to navigate and content is similar to websites at other hospitals in the state. The website has a short page with general information about the ambulance service but does not specify how to contact the ambulance service directly. There are also a few entries related to emergency medical and trauma

services on the page for hospital news. Springfield EMS Association, an auxiliary organization formed to offer additional support for the ambulance in Springfield, has several pages on its website that provide more information about the ambulance service, including a detailed history. The page for community outreach education on their website is still under construction. Walsh Ambulance Service has a robust website that provides an array of information about the ambulance service, three years of statistics, contact forms and telephone numbers, volunteer opportunities, a patient portal, upcoming events, trainings and links to other organizations in the community. The site also includes an outstanding five-year strategic plan that was developed by the ambulance service and adopted by the district Board of Directors. The Walsh Ambulance Service website is linked directly from the home page for Walsh Hospital District although there is no link from the ambulance page back to the parent organization.

Prevention

Similar to public education, resource constraints limit injury and disease prevention activities throughout Baca County and programs are not coordinated. Local incidence data on injury mechanisms is not yet available since Southeast Colorado Hospital has only been designated as a trauma center for the last year. As a result, prevention offers several opportunities for improvement. Southeast Colorado Hospital District has provided the More Than Sad suicide prevention training to the community. With more than one-fourth of the population age 65 or older, fall prevention programs could have a significant positive effect in Baca County. According to the CDC falls are the leading cause of fatal and nonfatal injuries for this age group. Given that EMS agencies must access patients' homes during a response, and medical providers have expertise in assessing a patient's fall risk, the hospital and EMS agencies could successfully implement an initiative such as the STEADI program to benefit the community. The long term care facilities may also be partners to augment existing fall prevention efforts. Motor vehicle crashes are the leading cause of death among children in the United States. Numerous studies, including a 2010 NHTSA study *Children Injured in Motor Vehicle Traffic Crashes*, conclude that use of child safety seats are effective in reducing the incidence rates of incapacitating injuries in any type of motor vehicle traffic crash. According to the Colorado Department of Transportation website, there are no car seat inspection stations in Baca County. In other parts of the region, the Colorado State Patrol provides these inspections by appointment although the distance to Springfield may preclude this as a feasible option. Training personnel to provide car seat inspection services through another law enforcement agency, the EMS agencies, the hospital trauma program or local public health agency is worth consideration. More than 500 deaths occur each year as a result of preventable carbon monoxide poisoning according to the U.S. Fire Administration and the Fire and Life Safety Educators. The technology is now available to monitor the environment of any home or business for deadly levels of carbon monoxide gas. A community-wide awareness and carbon monoxide detector program could be launched through fire or EMS agencies in Baca County. This type of program is not only highly effective but offers the opportunity for agencies to work together on a goal such as having every household in Baca County protected with a carbon monoxide detector. Private foundations such as The Lauren Project

(<http://www.laurensproject.org/>) offer grants and assistance to emergency services agencies, and funding may also be available through programs from carbon monoxide detector manufacturers. The community can benefit greatly from these projects or others targeted toward agricultural injuries, fire safety, sports injuries, occupant protection or other problems identified through incidence data.

Recommendations

- ✿ Use surveys, trauma incidence data from the hospital and other sources to identify problems or areas of interest to the community and develop specific prevention or public education to benefit the community.
- ✿ Augment the community CPR and first aid classes with EMS-specific content to demonstrate the public's role on the health care team, encourage the proper use of emergency services and identify potential recruits
- ✿ Consider creating a countywide safety event, like the annual Safety Jam in Pueblo, to educate the community about ongoing safety issues, such as fall prevention for seniors, fire safety, or agricultural safety. This type of event provides the opportunity for all emergency organizations in the county to work across jurisdictions and provide the public with valuable information.
- ✿ Public education is an integral part of the emergency medical and trauma services system but if medical training is provided to benefit a specific entity, not the general public, consider seeking reimbursement to recover costs.
- ✿ Enhance the Southeast Colorado Hospital District website to provide additional information for the public and EMS staff regarding events, trainings and other useful content.

Mass Casualty

Mass Casualty Please rate the following on a scale of 1 - 5.5 = Strongly Agree 1 = Strongly Disagree								
Answer Options	1	2	3	4	5	Don't Know	Rating Average	Response Count
MCI exercises are performed at least once a year	2	1	3	4	4	3	3.50	17
EMS, fire agencies and receiving hospitals participate in annual MCI exercises	3	2	3	4	3	2	3.13	17
EMS, fire agencies and receiving hospitals have written mass casualty response plans	1	1	2	4	6	3	3.93	17
EMS, fire and hospital managers are aware of local and state emergency management efforts and programs	1	1	1	7	4	3	3.86	17
<i>answered question</i>								17
<i>skipped question</i>								2

Mass Casualty

The majority of emergency medical and trauma services stakeholders expressed the high traffic volumes on US 287 create a significant risk for transportation accidents that could contribute to a mass casualty event.

The Baca County Office of Emergency Management has the lead role in planning for all hazards, including mass casualty incidents. The county emergency manager updates and maintains the county emergency operations plan and serves as chair for the Local Emergency Planning Committee. The Local Emergency Planning Committee was organized by the county and is required to develop plans for responding to a chemical emergency and educate the public about chemical risks. The committee currently meets the minimum requirement to convene twice each year but the stakeholders expressed that committee meetings need to occur on a much more frequent basis would like to see greater involvement from the county emergency manager in the local system for emergency response. The Town of Springfield also has an emergency manager that is responsible for planning and emergency management for the town. The town emergency manager updates the town emergency operations plan and conducts an exercise annually. The town also holds a separate emergency planning committee meeting on a monthly basis with about 15 participants from throughout the county routinely in attendance. Copies of the emergency operations plans for the town and county were not available for the consultative visit team to review. Significant effort has been devoted to mass casualty planning at the regional level. The Southeast Colorado All-Hazards Region and Southeastern Colorado RETAC produced the southeastern Colorado MCI plan in 2016. This is a well-designed plan and can be initiated quickly by any of the emergency medical and trauma services providers in the region. Walsh Ambulance Service maintains an agency-level plan for

response to mass casualty incidents. The plan is designed to articulate with county and regional plans and the ambulance service conducts an exercise to test it annually. Most emergency response agencies lack the resources to manage a mass-casualty incident on their own and establish mutual aid agreements to prepare for this contingency. Some jurisdictions also have areas that are remote or difficult to access and develop automatic aid agreements to improve services for those locales. These formal agreements provide both explicit authority to provide services and clear expectations for both parties to strengthen overall system integrity. The network of mutual aid agreements superimposed on the Baca County emergency medical and trauma services system appears to provide access to virtually all of the emergency response resources in the region. Both ambulance services and five fire agencies from Baca County are parties to the southeastern Colorado mutual aid agreement for emergency services from 2001 along with EMS and fire agencies in Bent, Crowley, Kiowa, Otero and Prowers Counties. Baca, Bent, Crowley, Kiowa, Otero and Prowers Counties established a separate mutual aid agreement for emergency services in 2012 and enacted an intergovernmental agreement to provide reciprocity of ambulance licensing in 2015. These regional agreements articulate directly with the southeastern Colorado MCI plan developed by the Southeast Colorado All-Hazards Region and the Southeastern Colorado RETAC. In addition to the regional agreements in Colorado, Walsh Ambulance Service recently signed an agreement with the City of Keyes EMS in Oklahoma to provide mutual aid as well as automatic aid in the far southern portions of the Walsh Hospital District Walsh Ambulance Service also established an automatic aid agreement with Morton County Ambulance Service in Kansas for responses along the eastern edge of the Walsh Hospital District in 2015.

Recommendations

- Reassess the Local Emergency Planning Committee to align its function with the mission and determine the appropriate frequency for meetings.
- Formally establish a local Emergency Services Council to advise the Board of County Commissioners and serve as a forum to address operational issues and enhance interagency communication.
- Collaborate between the local Emergency Services Council, Southeastern Colorado RETAC and Southeast Colorado All Hazards Region to review regional mutual aid agreements and ensure they articulate with regional emergency operations plans and local agreements. Develop a formal process for regular review and updates.

Evaluation

Evaluation. Please rate the following on a scale of 1 - 5. 5 = Strongly Agree 1 = Strongly Disagree								
Answer Options	1	2	3	4	5	Don't Know	Rating Average	Response Count
Each EMS agency has a defined and ongoing performance improvement program	0	1	2	4	2	8	3.78	17
Performance improvement findings are integrated into the EMS and receiving hospitals care systems	1	2	1	6	0	7	3.20	17
Performance improvement activities are coordinated and communicated between services	1	1	3	2	2	8	3.33	17
The EMS system has established performance standards	1	2	1	4	5	4	3.77	17
The receiving hospital systems have established performance standards	1	1	2	3	3	7	3.60	17
EMS agencies participate in performance improvement programs at the receiving hospital systems	1	3	1	2	4	6	3.45	17
The EMS system has an evaluation process in place	1	1	3	1	5	6	3.73	17
<i>answered question</i>								17
<i>skipped question</i>								2

Evaluation

The hospital and both ambulance services in Baca County all report they have established quality improvement programs. Quality improvement processes for Southeast Colorado Hospital are similar to other small facilities in Colorado with level IV trauma designation and appear to comply with applicable standards. The hospital also reported difficulty accessing information from other hospitals for patients transferred out of the community to higher-level care. Southeast Colorado Hospital Ambulance uses a separate quality improvement process designed to meet the basic requirements for an EMS agency. The ambulance service interacts with the hospital quality improvement process with respect to trauma, but this does not appear to extend to other patient clinical conditions. Walsh Ambulance Service has its own quality improvement process to meet its basic needs as an EMS agency but there is no interaction with quality improvement processes for Southeast Colorado Hospital. The Baca County Communication Center uses an emergency medical dispatch system but does not appear to have retrospective review or other quality improvement processes in place. None of the EMS agencies report the use of a structured quality improvement rubric. Development of formal quality improvement tools and coordination between the various agency quality improvement processes would permit comprehensive analysis of the emergency medical and trauma services system as a whole. In addition, the Colorado legislature recently extended protections to exclude EMS quality management activities from being legally discoverable and

offer immunity from civil lawsuit for quality management participants, providing the activities meet a minimum set of quality management standards and participants act in good faith. To date, none of the EMS agencies in Baca County have implemented a quality management program that meets the requirements of this statute. The elements specified in the statute are taken from quality assurance and quality improvement programs used by hospitals and other health care entities. Implementing the guidelines may help Baca County to enhance current quality improvement programs.

Recommendations

- ✿ Develop, implement and maintain a formal quality management program compliant with 25-3.5-904 C.R.S. for the Baca County Communications Center.
- ✿ Enhance existing quality management programs at other EMS agencies to comply with 25-3.5-904 C.R.S.
- ✿ Coordinate quality management activities among the emergency medical and trauma services organizations within Baca County to improve services and optimize outcomes by assessing each agency's contribution to patient care.
- ✿ Develop, implement and maintain a program for the county emergency services council to formally monitor, evaluate and report on aggregate quality and performance measures for the local emergency medical and trauma services system.
- ✿ Develop consistent quality improvement criteria for all EMS agencies and assess for compliance with applicable protocols, policies, procedures, practices, guidelines or other performance standards. Initially, EMS agencies should consider assessing compliance with trauma activation criteria, ST elevation myocardial infarction alerts, stroke alerts, sepsis alerts, current standards in cardiopulmonary arrest management, non-invasive assisted ventilation cases, use of a backup airway device or endotracheal intubation and a random screen of 10-50 percent of all patient care reports for quality of care and adherence to protocol.
- ✿ Develop a response configuration identifying the agency and response mode appropriate for each emergency medical dispatch determinant, create a standard quality improvement review process and assess for compliance with response mode guideline to prehospital scenes.
- ✿ Develop indications for emergent (using red lights or siren) ground transports to the hospital, create a standard quality improvement review process and assess for compliance during patient transport to hospitals.
- ✿ Develop indications for ground transports by quick response teams, create a standard quality improvement review process and assess for compliance on responses involving a quick response team.
- ✿ Develop criteria for air medical utilization, including the provider responsible for activation or cancellation of the air medical resource, create a standard quality improvement review process and assess for compliance with utilization criteria, whether the request is for scenes, or to the hospital.

- ✱ Develop mechanisms to demonstrate that appropriate training, remediation or other corrective action has been taken when issues are identified in the quality improvement process.

Integration of Health Services

Integration of Health Services. Please rate the following on a scale of 1 - 5. 5 = Strongly Agree 1 = Strongly Disagree								
Answer Options	1	2	3	4	5	Don't Know	Rating Average	Response Count
EMS agencies and the receiving hospital systems work well together	2	1	2	5	6	1	3.75	17
EMS is well connected to the overall healthcare system	0	2	3	5	6	1	3.94	17
EMS and fire agencies work well together	1	3	1	2	8	2	3.87	17
All participants in the EMS and receiving hospital systems collaborate for training and improved patient care outcomes	1	2	2	5	4	3	3.64	17
<i>answered question</i>								17
<i>skipped question</i>								2

Integration of Health Services

Integration of services and continuation of care can be one of the most challenging areas to accomplish within the health care system. It requires coordination between a broad array of



people, processes and organizations across the continuum of care to function in unison for the benefit of every patient. Highly-integrated systems provide effective bidirectional linkages to transfer information. Quality communication with downstream providers is essential to understand each patient's condition and continue appropriate interventions as patients are relayed to definitive care. Information must flow upstream as well

to educate providers and evaluate system and provider performance. Although the process can be daunting, integration of systems can be extremely beneficial to those involved providing expanded communication, continued training, as well as process and procedural improvement.

Overall, the emergency medical and trauma services system provides quality care and the components work well together. This perspective is consistent with the generally positive opinions expressed during the stakeholder interviews and the favorable rating for this factor in the pre-visit survey. A few stakeholders expressed a lack of trust between particular agencies or groups of providers. On further inquiry, it appears a significant portion of this distrust is

rooted in deep-seated differences of opinion. Some, like service delivery model or appropriate level of taxation to subsidize emergency medical and trauma services in the community, are fundamental and others, such as thresholds for requesting additional resources, determination of patient destination or utilization of air medical, are more operational. The dissent represents a clear opportunity for the communications center, fire departments, quick response teams, search and rescue, law enforcement agencies, ambulance services, the hospital and air medical to work together and improve services to the community.

Recommendations

- ✿ Formally establish a local Emergency Services Council to advise the Board of County Commissioners on all aspects of the emergency medical and trauma services system and The council can provide a platform to resolve differences and enhance integration of services including coordination of operations, monitoring system quality across the continuum of emergency medical and trauma care, creating an annual plan to recommend priorities for local system development and ranking requests for supplemental local funding from Southeastern Colorado RETAC.
- ✿ Coordinate training programs and create joint training opportunities for all emergency medical and trauma services providers to work collaboratively across disciplines and improve integration of services across the continuum of care. These shared efforts enhance the quality and relevance of education by using instructors with special expertise to present specific topics regardless of their agency affiliation and incorporating information on patient outcome in case studies. Professional relationships developed through cooperative learning experiences improve communications, clinical skills and understanding of roles for each member of the healthcare team. Further benefits can be seen through the building of trust amongst the providers with the knowledge that they all share a common knowledge base that contributes to consistent patient outcomes.
- ✿ Work collaboratively with all emergency services agencies in Baca County to enhance participation in EMS calls. Make use of expertise from fire departments and law enforcement agencies to manage incident scenes, mitigate hazards, provide specialized rescue services and provide early defibrillation or other lifesaving emergency interventions. Emergency medical responder training for these personnel improves first response capabilities, reducing the time to initiate care and potentially improve patient outcome.
- ✿ Develop, implement and maintain a multidisciplinary quality management program to formally monitor and evaluate performance of the local emergency medical and trauma services system. Assessing each agency's contribution to patient care, from dispatch through definitive care, is essential to improve services and optimize outcomes.
- ✿ Establish links between data systems for all organizations providing emergency medical and trauma services in the county. The ability to share data across the full spectrum of care, from pre-arrival care instructions by dispatch through the hospital's comprehensive electronic medical record, can ensure each patient's care is effectively communicated among providers as well as reduce errors and save time by eliminating duplicative data entry.

Summary of Recommendations

In your opinion, how effective are the local EMS and receiving hospital systems in meeting the needs of the community, (1 means does not meet community needs at all, and 10 means meets all community needs completely)?

Answer Options	1	2	3	4	5	6	7	8	9	10	Rating Average	Response Count
Rating	0	0	1	0	1	1	8	4	3	1	7.32	19
	<i>answered question</i>											19
	<i>skipped question</i>											0

Baca County Government Recommendations

Short-term (1 to 2 years)

- Update the Baca County ambulance licensing resolution to comply with governing law and current practices.
- Formally establish a local Emergency Services Council to advise the Board of County Commissioners on all aspects of the emergency medical and trauma services system and allocate resources for it to operate successfully. Authorization for the council can be accomplished by resolution or incorporated into a revised county ambulance licensing resolution. This council should advise the Board of County Commissioners on ambulance licensing, recommend priorities for local system development, monitor system quality, prioritize requests for supplemental local funding from Southeastern Colorado RETAC and report on current system status at least annually. This council can also serve as a forum to address operational issues and enhance interagency communication. All agencies providing emergency medical and trauma services in Baca County should be represented including:
 - Each ambulance service with a base of operations in Baca County
 - Independent EMS first response agencies based in Baca County
 - Fire-rescue agencies based in Baca County
 - The search and rescue group authorized by the Baca County Sheriff's Office
 - Law enforcement agencies
 - Public safety communication centers serving Baca County
 - Baca County emergency management
 - Licensed acute care medical facilities in Baca County that receive emergency patients
 - Each state-designated trauma center in Baca County
 - EMS medical direction
 - Baca County Public Health

Medium-term (3 to 5 years)

- Work collaboratively with all emergency services agencies in Baca County to enhance participation in EMS calls. Make use of expertise from fire departments and law enforcement agencies to manage incident scenes, mitigate hazards, provide specialized rescue services and provide early defibrillation or other lifesaving emergency interventions. Emergency medical responder training for these personnel improves first response capabilities, reducing the time to initiate care and potentially improve patient outcome.
- Establish links between data systems for all organizations providing emergency medical and trauma services in the county. The ability to share data across the full spectrum of care, from pre-arrival care instructions by dispatch through the hospital's comprehensive electronic medical record, can ensure each patient's care is effectively communicated among providers as well as reduce errors and save time by eliminating duplicative data entry.
- Consider coordinating EMS data. Migrate all EMS agencies to a common patient care reporting system. This will enhance the ability to aggregate information to monitor and evaluate EMS system performance throughout Baca County. This can help to optimize EMS system function and demonstrate the value of EMS to the community.
- Reassess the Local Emergency Planning Committee to align its function with the mission and determine the appropriate frequency for meetings.
- Collaborate between the local Emergency Services Council, Southeastern Colorado RETAC and Southeast Colorado All Hazards Region to review regional mutual aid agreements and ensure they articulate with regional emergency operations plans and local agreements. Develop a formal process for regular review and updates.
- Develop, implement and maintain a multidisciplinary quality management program to formally monitor and evaluate performance of the local emergency medical and trauma services system. Assessing each agency's contribution to patient care, from dispatch through definitive care, is essential to improve services and optimize outcomes.

Long-term (5 years)

- Consider a single medical director for the EMS system in Baca County. This might serve to provide consistent levels of service, uniform educational opportunities and medical oversight. There are a variety of models for countywide medical direction across the state including consensus among the EMS providers and medical practitioners in the community, selection by a county emergency services council and appointment by the Board of County Commissioners. Consolidating EMS medical direction may increase workload for the EMS medical director, and a variety of models exist to accommodate these demands. Communities with volunteer medical direction sometimes rotate the position among the physicians in a community with each taking on the additional EMS duties for a period of time while other practitioners shoulder increased patient loads. Another alternative is to have one physician serve as the lead and coordinate components of the process assigned to associate EMS medical directors. Compensated models include a base hospital incorporating EMS medical direction into the physician's assigned duties, paying a fixed amount for medical direction during a specified period of time or by some measure of requests for service, or providing access to the agency's benefit package.

- ✿ Coordinate training programs and create joint training opportunities for all emergency medical and trauma services providers to work collaboratively across disciplines and improve integration of services across the continuum of care. These shared efforts enhance the quality and relevance of education by using instructors with special expertise to present specific topics regardless of their agency affiliation and incorporating information on patient outcome in case studies. Professional relationships developed through cooperative learning experiences improve communications, clinical skills and understanding of roles for each member of the healthcare team. Further benefits can be seen through the building of trust amongst the providers with the knowledge that they all share a common knowledge base that contributes to consistent patient outcomes.

Baca County Communications Center Recommendations

Short-term (1 to 2 years)

- ✿ Enhance recording capabilities to capture communications on all telephone lines answered in the communications center, all public safety radio system channels used for EMTS notification or communications in the field and all telephone lines and public safety radio system channels used for communications between field providers and EMS medical direction. Improve capabilities to manage and maintain recordings for quality improvement activities and risk management.
- ✿ Develop a response configuration identifying the agency and response mode appropriate for each emergency medical dispatch determinant, create a standard quality improvement review process and assess for compliance with response mode guideline to prehospital scenes.
- ✿ Assure medical oversight and effective quality management for all facets of the emergency medical and trauma services system in Baca County. This includes clinical aspects such as pre-arrival instructions to the public from emergency medical dispatch personnel and treatment protocols for EMS providers but also operational considerations such as determinants to categorize the level of response to calls for service or participation in the selection of personnel.
- ✿ Develop, implement and maintain a formal quality management program compliant with 25-3.5-904 C.R.S. for the Baca County Communications Center.

Medium-term (3 to 5 years)

- ✿ Develop a public safety radio system to provide paging and backup communications for Baca County. A preliminary propagation study (Appendix D) indicates a single 100-watt transmitter with an antenna on the tower at the Sheriff's Office in Springfield could provide adequate coverage for most of the county to bring notification of public safety emergency response agencies up to the current industry standard. The department has an EMTS Telecommunications Coordinator on staff to provide technical assistance and several different agencies offer grant programs to help with funding. Enhanced 911 surcharge fees can also be used to help fund these upgrades for the communications center.
- ✿ Upgrade to a fully-integrated computer aided dispatch system in the communications center including text pagers for field personnel and mobile data terminals for

emergency response vehicles to provide incident mapping, vehicle routing and GPS location tools, location history or hazards and pertinent medical information. Automate links between functions to improve efficiency and accuracy of call processing, dispatch and control for field units, records management and electronic patient care reports.

- Consider establishing links between data systems for all emergency medical and trauma services agencies. The ability to share data across the spectrum of patient care can be used to monitor the quality of care for individual patients or combined to assess any aspect of system performance. These links can also reduce errors and save time by reducing duplicative data entry.

Long-term (5 years)

- Explore the possibility of developing partnerships with other jurisdictions in the region to create a shared system of communications center services. Models for shared services range from a simple contractual arrangement to pay for capacity in an existing center to creation of a new authority accountable to participating jurisdictions operating a consolidated communications center and providing enhanced services to the public. Sharing communication center services offers significant potential for cost savings or service improvements in comparison to operating a stand-alone center.

Southeast Colorado Hospital Ambulance Recommendations

Short-term (1 to 2 years)

- Unrestrained vehicle occupants are at significantly greater risk of injury or death, and pose a risk to other vehicle occupants, in the event of a crash. Southeast Colorado Hospital Ambulance and Walsh Ambulance Service should have written policies and ensure that occupants in the front seat of any emergency vehicle are restrained by a seat belt and shoulder harness any time the vehicle is in motion. Further, any patient or other person riding in an emergency vehicle be properly restrained any time the vehicle is in motion. This includes the use of all cot straps as designed by the manufacturer. Finally, both services should develop a culture of safety that emphasizes use of shoulder and seat belt restraints for any provider in the patient care compartment as much as possible. This culture emphasis should include promoting the concept of implementing the vast majority of patient care interventions when the emergency vehicle is stationary, facilitating the use of restraints when the vehicle is in motion.
- Use of emergency lights and siren should be reduced during scene response and patient transport by EMS agencies operating in Baca County. This can be accomplished for scene responses by EMS medical direction and agency leadership working with the communications center to assign an appropriate response mode configuration to each emergency medical dispatch determinant. Response mode configurations should identify the specific agencies that are needed to effectively manage the incident type and the response mode, emergent or routine, appropriate for each unit. Emergency patient transports can be decreased through careful review of current practice to identify the actual frequency of emergent returns and the limited number of patient conditions that would benefit from emergent transport to the hospital. Incorporate dispatch response mode recommendations into the training for providers in all emergency response agencies to reduce unwarranted use of lights or siren. Medical

oversight should include dispatch quality management review, compliance with response mode configurations and ongoing evaluation to assess effectiveness of response mode configurations.

- ✿ Develop indications for emergent (using red lights or siren) ground transports to the hospital, create a standard quality improvement review process and assess for compliance during patient transport to hospitals.
- ✿ Develop indications for ground transports by quick response teams, create a standard quality improvement review process and assess for compliance on responses involving a quick response team.
- ✿ Develop criteria for air medical utilization, including the provider responsible for activation or cancellation of the air medical resource, create a standard quality improvement review process and assess for compliance with utilization criteria, whether the request is for scenes, or to the hospital.
- ✿ Develop a standard protocol for field activation of air medical services for use by all emergency response agencies in Baca County, provide consistent training for its application and review each activation for appropriate utilization by a multidisciplinary team through a joint quality management process. The Southeastern Colorado RETAC protocols should serve as the basis and modified, if appropriate for the benefit of patients, based on the circumstances specific to Baca County.
- ✿ Restrict the use of converted sport utility vehicles for patient transport. Develop written guidelines identifying the limited types of patients that can be transported safely given the constraints imposed by the vehicle configuration and assess utilization as part of the ongoing quality management review. Avoid the use of such vehicles in any interfacility transport or any transport of a presumed critically ill or injured patient because of limited patient access in such vehicles. Consider repurposing the converted sport utility vehicles for use by quick response teams. The patient transport capabilities of these vehicles are more suitable for evacuating patients from remote areas to the closest point of access for an ambulance.
- ✿ Positive recognition of personnel who perform quality work is important but there is an additional dimension with respect to emergency services volunteers. They are called away on a moment's notice and forego sleep, time with loved ones or shift workload to other employees. These volunteers could not serve without the support of their families, friends or coworkers and appreciation for this support system is just as essential. The emergency medical and trauma services agencies should refine current recognition programs and create new offerings to acknowledge the contributions from EMS providers, their families and employers to enhance EMS provider retention.
 - Formal recognition such as Volunteer of the Year, Most Hours On-Call, Most Supportive Family or similar accolades can prove to be beneficial.
 - Collaborate with local mass media to get articles in the newspapers or radio reports about the service and, most importantly, specific individual's contributions.
 - Gatherings such as dinners, potlucks or picnics to recognize agency personnel and their families, and build relationships outside the demands of emergency services.

- Use newsletters, social media posts and other media to provide information about the service and the people providing service.
 - Maintain a high-quality, current web site including information on agency activities and photos of personnel and equipment.
 - Post bar charts with the number of hours on call or other measures and award incentives for reaching certain milestones.
- ✿ Develop a schedule of charges for services defensible to Medicaid, Medicare, private insurance or patients billed directly, compare to current rates as part of the annual budget process and adopt fiscally responsible changes as indicated. Potential increases in fees for service are always a difficult issue, especially for a special district that also levies a property tax. Thorough review of the effects of changes in payer mix, federal or state laws, price levels or other factors in a transparent public process accountable to the voters ensures the community receives sufficient justification. Excellent processes for the development of a defensible rate structure from the consultative visit reports for Chaffee County and Kiowa County are available.
 - ✿ Review scheduled emergency medical and trauma services education and evaluate opportunities for funding assistance. Make use of resources from the Colorado Rural Health Center, Lamar Community College Financial Aid office and Southeastern Colorado RETAC to help identify grants and scholarships available to providers serving Baca County.
 - ✿ Public education is an integral part of the emergency medical and trauma services system but if medical training is provided to benefit a specific entity, not the general public, consider seeking reimbursement to recover costs.
 - ✿ Augment the community CPR and first aid classes with EMS-specific content to demonstrate the public's role on the health care team, encourage the proper use of emergency services and identify potential recruits.
 - ✿ Provide expert guidance and support for the agency EMS medical directors. Make use of resources offered by the Southeastern Colorado RETAC regional medical direction program such as the regional meeting for agency medical directors and command staff, information from quarterly newsletters, regional CQI process, rural emergency department physician training on EMS scope of practice, trip sheet reviews and case studies, continuing medical education and protocol development to enhance knowledge and develop a network of colleagues. Connect with the state EMS medical director and make use of support for agency medical directors and other resources available through the department.
 - ✿ Enhance existing quality management programs at other EMS agencies to comply with 25-3.5-904 C.R.S.
 - ✿ Synchronize EMS protocols for both Southeast Colorado Hospital Ambulance and Walsh Ambulance Service as much as possible. This would better serve to provide consistent levels of service, uniform educational opportunities and concurrent medical direction.
 - ✿ Link continuing education programs to the quality management process. The existing continuing education processes appear to cover the requirements to maintain credentials reasonably well. Connecting the two processes will advance the agencies to the next level where education can reinforce existing strengths and bolster identified weaknesses in the system as well as for individual providers. This is particularly

important for advanced-level providers who may be performing higher-level skills infrequently based on the relatively low volume of patient contacts.

- ✿ Case review education is often the most beneficial modality to provide training for EMS providers. Medical directors should strive to make this option available as well as attend and lead such activities. The medical directors and EMS leadership should coordinate case review trainings to include providers from Southeast Colorado Hospital, including field providers and facility staff, and Walsh Ambulance Service. As much training as possible should consist of joint opportunities that facilitate both simultaneous learning and comradery between the agencies.
- ✿ Develop mechanisms to demonstrate that appropriate training, remediation or other corrective action has been taken when issues are identified in the quality improvement process.

Medium-term (3 to 5 years)

- ✿ Work collaboratively with all emergency services agencies in Baca County to enhance participation in EMS calls. Fire departments are an important resource in scene management and law enforcement officers, with appropriate equipment and oversight, can provide early defibrillation or other lifesaving emergency interventions.
- ✿ Develop consistent quality improvement criteria for all EMS agencies and assess for compliance with applicable protocols, policies, procedures, practices, guidelines or other performance standards. Initially, EMS agencies should consider assessing compliance with trauma activation criteria, ST elevation myocardial infarction alerts, stroke alerts, sepsis alerts, current standards in cardiopulmonary arrest management, non-invasive assisted ventilation cases, use of a backup airway device or endotracheal intubation and a random screen of 10-50 percent of all patient care reports for quality of care and adherence to protocol.
- ✿ Provide industry-specific leadership and management training for the ambulance service directors. Both ambulance service directors are new and, from all appearances, they have performed well, however, it is important that they each receive the necessary tools to guide and help with the multitude of issues that new and inexperienced ambulance service managers face. Initially consider course offerings like the National Fire Academy-Management of Emergency Medical Services, American Ambulance Association-Ambulance Service Management, Northwest RETAC EMS Leadership Conference and the National Rural EMS Conference and provide funding, travel, backfill or other support necessary for the director to attend.
- ✿ Both ambulance service directors have accumulated a substantial volume of institutional knowledge during their respective tenures. It is important for each of them to catalog this knowledge so that it may be passed on to others in case of their absence or separation from the organization. Each ambulance service director should create an accessible record of tasks or procedures and standard operating guidelines to serve as a reference for successors, supervisors and delegates.
- ✿ Consider coordinating EMS continuing education activities between Southeast Colorado Hospital Ambulance and Walsh Ambulance Service. Shared efforts can enhance the quality of education by using instructors with special expertise to present specific topics regardless of their agency affiliation. Working together on EMS continuing education can also avoid duplicative efforts such as presenting similar topics by two

different instructors at about the same time. Coordinated education also creates an opportunity for providers from different agencies to train together and improve operations on responses with multiple agencies.

- ✿ Increase joint training opportunities for EMS providers in both Springfield and Walsh. This will build familiarity with each service and enhance comradery, as well as education. Combining the monthly education offerings at each service and perhaps alternating the location between both agencies will be beneficial.
- ✿ Neither EMS medical director receives compensation for services. If the current model for medical direction is continued, the EMS community should consider some type of financial stipend. The physicians currently providing medical direction have very busy practices without their EMS responsibilities. Some sort of stipend would at least convey gratitude for the time they devote to EMS.
- ✿ Consider increased and enhanced use of information that is currently available. Collect, analyze and monitor data from prehospital patient care reports to identify excellent performance, areas in need of improvement or other trends, and incorporate those findings in the quality management process. This can help focus content for EMS continuing education or skills review sessions.
- ✿ Consider establishing links between data systems for all emergency medical and trauma services agencies. The ability to share data across the spectrum of patient care can be used to monitor the quality of care for individual patients or combined to assess any aspect of system performance. These links can also reduce errors and save time by reducing duplicative data entry.
- ✿ Use surveys, trauma incidence data from the hospital and other sources to identify problems or areas of interest to the community and develop specific prevention or public education to benefit the community.
- ✿ Consider creating a countywide safety event, like the annual Safety Jam in Pueblo, to educate the community about ongoing safety issues, such as fall prevention for seniors, fire safety, or agricultural safety. This type of event provides the opportunity for all emergency organizations in the county to work across jurisdictions and provide the public with valuable information.
- ✿ Consider establishing annual budget and operational objectives to demonstrate progress towards organizational goals and implementation of the district service plans. The objectives should be developed in conjunction with the providers, particularly the volunteers. An example of an operational goal can be ambulances shall respond 120 seconds after dispatch, 80 percent of the time. An example of a budget objective can be, 80percent of rural volunteer members will be equipped with AEDs and basic medical kits. Walsh Ambulance Service has an excellent five year strategic plan that outlines a number of budgetary proposals. The transition of these proposals into annual budget objectives is a key component to the plan. Development of these types of objectives in collaboration with the paid and volunteer members identifies current issues, and, most importantly, displays a strong team building effort, particularly for volunteers.

Long-term (5 years)

- ✿ Work toward some increase in the number of advanced life support providers in Baca County. While it appears that basic care is adequate in the majority of cases, an

increase in advanced care may be beneficial for select patient complaints. EMT-Intermediate would be sufficient for most prehospital situations but the expanded scope for paramedic providers could be advantageous when interfacility ground transport is necessary. The potential for deterioration of these patients and benefits from paramedic-level interventions may be greater in the interfacility arena. Establish a consistent policy for interfacility transports using a collaborative decision model that incorporates perspectives of the facilities, physicians, nursing staff and EMS providers potentially involved in the specific transport to ensure the patient can be transported safely and receive appropriate care. In addition, each transport is reviewed for appropriate utilization by a multidisciplinary team through a joint quality management process. The framework developed by the Northwest RETAC (attach as an appendix) can be adapted for use based on the specific resources available in Baca County.

- Depending on volume of ground interfacility transports, longer term consideration might be given to the establishment of a critical care ground transport program based in Baca County.

Southeast Colorado Hospital District Recommendations

Short-term (1 to 2 years)

- Each hospital district in Baca County should update its service plan and file the service plan with the Colorado Department of Local Affairs. Although the services currently offered are authorized by statute, a plan that includes all current and future services will increase transparency for this level of government and enhance reimbursement if district resources are ever called to assist with a declared federal disaster.
- Approximately 80 percent of the service population is covered by Medicare or Medicaid. Documentation that complies with the strict requirements established by the Center for Medicare and Medicaid Services is critical to maximize reimbursement for services supplied to these patients. Discussions with the billing personnel did not indicate any significant issue with provider documentation however it is strongly recommended that all providers continue to be well trained on these requirements and updated when new requirements are imposed.
- Increase formal educational interactions between the hospital and both ambulance services. This could be done in conjunction with the combined educational offerings described above. Training involving the hospital should include patient follow-up for patients transported by EMS. Case review formats are an excellent vehicle to identify training needs and to ensure interest on the part of the learners, since they involve patients that EMS provided care for.
- Review scheduled emergency medical and trauma services education and evaluate opportunities for funding assistance. Make use of resources from the Colorado Rural Health Center, Lamar Community College Financial Aid office and Southeastern Colorado RETAC to help identify grants and scholarships available to providers serving Baca County.

Medium-term (3 to 5 years)

- Deliberatively investigate the full effect of consolidating ambulance services under an organization owned or operated by the critical access hospital that is eligible to be paid

101 percent of allowable costs for ambulance transports. This reimbursement scheme appears to offer the potential for increased revenues from Medicare and Medicaid. A thorough analysis performed by the collaborative efforts of both Southeast Colorado Hospital District and Walsh Hospital District will help to determine the net gain after ineligible expenses, normalization of tax subsidies and other factors are considered. If the analysis reveals consolidation is feasible and sustainable, the two hospital districts can work together to identify an accountable organizational model that ensures equitable service and representation for all areas to be served. There is significant mistrust surrounding this specific issue now but other aspects of the relationship between the districts are positive and strong to serve as a basis for this collaboration.

- ✿ Enhance EMS provider retention through increased provider confidence and job satisfaction.
 - Create training opportunities for EMS providers focused on critical skills used infrequently on high-acuity patients. Identify critical skills, assess provider confidence with skill performance and design training to develop skill mastery using learning principles developed by other health care disciplines, the military, law enforcement and fire services.
 - Create training opportunities for EMS providers to work collaboratively with other emergency medical professionals with a higher level of training or education. Schedule EMS providers to work in the hospital emergency department to enhance skills, develop professional relationships and better integrate with the continuum of medical care.
 - Consider creating part-time positions in the emergency department at Southeast Colorado Hospital for EMS providers to support the hospital staff during periods of high demand. Emergency departments at hospitals throughout the nation use EMS providers of all levels as a staffing resource. As coworkers, the hospital staff and EMS providers will develop professional relationships, mutually assist and support one another within their scope of practice and enhance skills for EMS providers in a clinical environment under the supervision of higher-level medical staff.
- ✿ Use surveys, trauma incidence data from the hospital and other sources to identify problems or areas of interest to the community and develop specific prevention or public education to benefit the community.
- ✿ Consider creating a countywide safety event, like the annual Safety Jam in Pueblo, to educate the community about ongoing safety issues, such as fall prevention for seniors, fire safety, or agricultural safety. This type of event provides the opportunity for all emergency organizations in the county to work across jurisdictions and provide the public with valuable information.
- ✿ Enhance the Southeast Colorado Hospital District website to provide additional information for the public and EMS staff regarding events, trainings and other useful content.

Walsh Ambulance Service Recommendations

Short-term (1 to 2 years)

- ✿ Unrestrained vehicle occupants are at significantly greater risk of injury or death, and pose a risk to other vehicle occupants, in the event of a crash. Southeast Colorado Hospital Ambulance and Walsh Ambulance Service should have written policies and ensure that occupants in the front seat of any emergency vehicle are restrained by a seat belt and shoulder harness any time the vehicle is in motion. Further, any patient or other person riding in an emergency vehicle be properly restrained any time the vehicle is in motion. This includes the use of all cot straps as designed by the manufacturer. Finally, both services should develop a culture of safety that emphasizes use of shoulder and seat belt restraints for any provider in the patient care compartment as much as possible. This culture emphasis should include promoting the concept of implementing the vast majority of patient care interventions when the emergency vehicle is stationary, facilitating the use of restraints when the vehicle is in motion.
- ✿ Use of emergency lights and siren should be reduced during scene response and patient transport by EMS agencies operating in Baca County. This can be accomplished for scene responses by EMS medical direction and agency leadership working with the communications center to assign an appropriate response mode configuration to each emergency medical dispatch determinant. Response mode configurations should identify the specific agencies that are needed to effectively manage the incident type and the response mode, emergent or routine, appropriate for each unit. Emergency patient transports can be decreased through careful review of current practice to identify the actual frequency of emergent returns and the limited number of patient conditions that would benefit from emergent transport to the hospital. Incorporate dispatch response mode recommendations into the training for providers in all emergency response agencies to reduce unwarranted use of lights or siren. Medical oversight should include dispatch quality management review, compliance with response mode configurations and ongoing evaluation to assess effectiveness of response mode configurations.
- ✿ Develop indications for emergent (using red lights or siren) ground transports to the hospital, create a standard quality improvement review process and assess for compliance during patient transport to hospitals.
- ✿ Develop indications for ground transports by quick response teams, create a standard quality improvement review process and assess for compliance on responses involving a quick response team.
- ✿ Develop criteria for air medical utilization, including the provider responsible for activation or cancellation of the air medical resource, create a standard quality improvement review process and assess for compliance with utilization criteria, whether the request is for scenes, or to the hospital.
- ✿ Develop a standard protocol for field activation of air medical services for use by all emergency response agencies in Baca County, provide consistent training for its application and review each activation for appropriate utilization by a multidisciplinary team through a joint quality management process. The Southeastern Colorado RETAC

protocols should serve as the basis and modified, if appropriate for the benefit of patients, based on the circumstances specific to Baca County.

- * Positive recognition of personnel who perform quality work is important but there is an additional dimension with respect to emergency services volunteers. They are called away on a moment's notice and forego sleep, time with loved ones or shift workload to other employees. These volunteers could not serve without the support of their families, friends or coworkers and appreciation for this support system is just as essential. The emergency medical and trauma services agencies should refine current recognition programs and create new offerings to acknowledge the contributions from EMS providers, their families and employers to enhance EMS provider retention.
 - Formal recognition such as Volunteer of the Year, Most Hours On-Call, Most Supportive Family or similar accolades can prove to be beneficial.
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- * Public education is an integral part of the emergency medical and trauma services system but if medical training is provided to benefit a specific entity, not the general public, consider seeking reimbursement to recover costs.
- * Augment the community CPR and first aid classes with EMS-specific content to demonstrate the public's role on the health care team, encourage the proper use of emergency services and identify potential recruits.

- ✿ Provide expert guidance and support for the agency EMS medical directors. Make use of resources offered by the Southeastern Colorado RETAC regional medical direction program such as the regional meeting for agency medical directors and command staff, information from quarterly newsletters, regional COI process, rural emergency department physician training on EMS scope of practice, trip sheet reviews and case studies, continuing medical education and protocol development to enhance knowledge and develop a network of colleagues. Connect with the state EMS medical director and make use of support for agency medical directors and other resources available through the department.
- ✿ Enhance existing quality management programs at other EMS agencies to comply with 25-3.5-904 C.R.S.
- ✿ Synchronize EMS protocols for both Southeast Colorado Hospital Ambulance and Walsh Ambulance Service as much as possible. This would better serve to provide consistent levels of service, uniform educational opportunities and concurrent medical direction.
- ✿ Link continuing education programs to the quality management process. The existing continuing education processes appear to cover the requirements to maintain credentials reasonably well. Connecting the two processes will advance the agencies to the next level where education can reinforce existing strengths and bolster identified weaknesses in the system as well as for individual providers. This is particularly important for advanced-level providers who may be performing higher-level skills infrequently based on the relatively low volume of patient contacts.
- ✿ Case review education is often the most beneficial modality to provide training for EMS providers. Medical directors should strive to make this option available as well as attend and lead such activities. The medical directors and EMS leadership should coordinate case review trainings to include providers from Southeast Colorado Hospital, including field providers and facility staff, and Walsh Ambulance Service. As much training as possible should consist of joint opportunities that facilitate both simultaneous learning and comradery between the agencies.
- ✿ Develop mechanisms to demonstrate that appropriate training, remediation or other corrective action has been taken when issues are identified in the quality improvement process.

Medium-term (3 to 5 years)

- ✿ Work collaboratively with all emergency services agencies in Baca County to enhance participation in EMS calls. Fire departments are an important resource in scene management and law enforcement officers, with appropriate equipment and oversight, can provide early defibrillation or other lifesaving emergency interventions.
- ✿ Develop consistent quality improvement criteria for all EMS agencies and assess for compliance with applicable protocols, policies, procedures, practices, guidelines or other performance standards. Initially, EMS agencies should consider assessing compliance with trauma activation criteria, ST elevation myocardial infarction alerts, stroke alerts, sepsis alerts, current standards in cardiopulmonary arrest management, non-invasive assisted ventilation cases, use of a backup airway device or endotracheal intubation and a random screen of 10-50 percent of all patient care reports for quality of care and adherence to protocol.

- ✿ Provide industry-specific leadership and management training for the ambulance service directors. Both ambulance service directors are new and, from all appearances, they have performed well, however, it is important that they each receive the necessary tools to guide and help with the multitude of issues that new and inexperienced ambulance service managers face. Initially consider course offerings like the National Fire Academy-Management of Emergency Medical Services, American Ambulance Association-Ambulance Service Management, Northwest RETAC EMS Leadership Conference and the National Rural EMS Conference and provide funding, travel, backfill or other support necessary for the director to attend.
- ✿ Both ambulance service directors have accumulated a substantial volume of institutional knowledge during their respective tenures. It is important for each of them to catalog this knowledge so that it may be passed on to others in case of their absence or separation from the organization. Each ambulance service director should create an accessible record of tasks or procedures and standard operating guidelines to serve as a reference for successors, supervisors and delegates.
- ✿ Consider coordinating EMS continuing education activities between Southeast Colorado Hospital Ambulance and Walsh Ambulance Service. Shared efforts can enhance the quality of education by using instructors with special expertise to present specific topics regardless of their agency affiliation. Working together on EMS continuing education can also avoid duplicative efforts such as presenting similar topics by two different instructors at about the same time. Coordinated education also creates an opportunity for providers from different agencies to train together and improve operations on responses with multiple agencies.
- ✿ Increase joint training opportunities for EMS providers in both Springfield and Walsh. This will build familiarity with each service and enhance comradery, as well as education. Combining the monthly education offerings at each service and perhaps alternating the location between both agencies will be beneficial.
- ✿ Neither EMS medical director receives compensation for services. If the current model for medical direction is continued, the EMS community should consider some type of financial stipend. The physicians currently providing medical direction have very busy practices without their EMS responsibilities. Some sort of stipend would at least convey gratitude for the time they devote to EMS.
- ✿ Consider increased and enhanced use of information that is currently available. Collect, analyze and monitor data from prehospital patient care reports to identify excellent performance, areas in need of improvement or other trends, and incorporate those findings in the quality management process. This can help focus content for EMS continuing education or skills review sessions.
- ✿ Consider establishing links between data systems for all emergency medical and trauma services agencies. The ability to share data across the spectrum of patient care can be used to monitor the quality of care for individual patients or combined to assess any aspect of system performance. These links can also reduce errors and save time by reducing duplicative data entry.
- ✿ Use surveys, trauma incidence data from the hospital and other sources to identify problems or areas of interest to the community and develop specific prevention or public education to benefit the community.

- ✿ Consider creating a countywide safety event, like the annual Safety Jam in Pueblo, to educate the community about ongoing safety issues, such as fall prevention for seniors, fire safety, or agricultural safety. This type of event provides the opportunity for all emergency organizations in the county to work across jurisdictions and provide the public with valuable information.
- ✿ Consider establishing annual budget and operational objectives to demonstrate progress towards organizational goals and implementation of the district service plans. The objectives should be developed in conjunction with the providers, particularly the volunteers. An example of an operational goal can be ambulances shall respond 120 seconds after dispatch, 80 percent of the time. An example of a budget objective can be, 80percent of rural volunteer members will be equipped with AEDs and basic medical kits. Walsh Ambulance Service has an excellent five year strategic plan that outlines a number of budgetary proposals. The transition of these proposals into annual budget objectives is a key component to the plan. Development of these types of objectives in collaboration with the paid and volunteer members identifies current issues, and, most importantly, displays a strong team building effort, particularly for volunteers.

Long-term (5 years)

- ✿ Work toward some increase in the number of advanced life support providers in Baca County. While it appears that basic care is adequate in the majority of cases, an increase in advanced care may be beneficial for select patient complaints. EMT-Intermediate would be sufficient for most prehospital situations but the expanded scope for paramedic providers could be advantageous when interfacility ground transport is necessary. The potential for deterioration of these patients and benefits from paramedic-level interventions may be greater in the interfacility arena. Establish a consistent policy for interfacility transports using a collaborative decision model that incorporates perspectives of the facilities, physicians, nursing staff and EMS providers potentially involved in the specific transport to ensure the patient can be transported safely and receive appropriate care. In addition, each transport is reviewed for appropriate utilization by a multidisciplinary team through a joint quality management process. The framework developed by the Northwest RETAC (attach as an appendix) can be adapted for use based on the specific resources available in Baca County.
- ✿ Depending on volume of ground interfacility transports, longer term consideration might be given to the establishment of a critical care ground transport program based in Baca County.

Walsh Hospital District Recommendations

Short-term (1 to 2 years)

- Each hospital district in Baca County should update its service plan and file the service plan with the Colorado Department of Local Affairs. Although the services currently offered are authorized by statute, a plan that includes all current and future services will increase transparency for this level of government and enhance reimbursement if district resources are ever called to assist with a declared federal disaster.
- Approximately 80 percent of the service population is covered by Medicare or Medicaid. Documentation that complies with the strict requirements established by the Center for Medicare and Medicaid Services is critical to maximize reimbursement for services supplied to these patients. Discussions with the billing personnel did not indicate any significant issue with provider documentation however it is strongly recommended that all providers continue to be well trained on these requirements and updated when new requirements are imposed.

Medium-term (3 to 5 years)

- Deliberatively investigate the full effect of consolidating ambulance services under an organization owned or operated by the critical access hospital that is eligible to be paid 101 percent of allowable costs for ambulance transports. This reimbursement scheme appears to offer the potential for increased revenues from Medicare and Medicaid. A thorough analysis performed by the collaborative efforts of both Southeast Colorado Hospital District and Walsh Hospital District will help to determine the net gain after ineligible expenses, normalization of tax subsidies and other factors are considered. If the analysis reveals consolidation is feasible and sustainable, the two hospital districts can work together to identify an accountable organizational model that ensures equitable service and representation for all areas to be served. There is significant mistrust surrounding this specific issue now but other aspects of the relationship between the districts are positive and strong to serve as a basis for this collaboration.

Appendix A: Baca County EMS Statistics 2015

These statistics are based upon what was reported to the state for NEMSIS reporting

Response Requests

Response Request	# of Requests	% of Total Requests
911 Response (Scene)	473	81.55%
Interfacility Transfer (Scheduled)	67	11.55%
Interfacility Transfer (Unscheduled)	38	6.55%
Mutual Aid	2	0.34%
Unknown	0	0.00%
Total	580	100%

Request for Service Time Frames

Time Period	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Total	%
00:00 - 03:00	3	6	2	3	4	8	3	29	3.73%
03:00 - 06:00	5	9	8	7	7	12	6	54	6.95%
06:00 - 09:00	4	10	15	15	14	11	10	79	10.17%
09:00 - 12:00	17	21	27	25	17	13	24	144	18.53%
12:00 - 15:00	12	26	13	15	21	13	23	123	15.83%
15:00 - 18:00	23	18	28	16	30	21	20	156	20.08%
18:00 - 21:00	18	19	14	15	13	22	23	124	15.96%
21:00 - 24:00	12	2	6	9	7	13	18	67	8.62%
Unknown	0	0	0	0	0	0	1	1	0.13%
Total	94	111	113	105	113	113	128	777	100%

Run Times

Average Run Times	
Enroute	00:12:20
To Scene	00:16:58
At Scene	00:29:50
To Destination	00:45:44
Back in Service	01:31:38
Total	03:16:30

Enroute (Responding - Unit Notified Dispatched)		
Minutes	# of Runs	% of Runs
0 - 1	136	17.55%
2 - 3	131	16.90%
4 - 5	130	16.77%
> 5	362	46.71%
Unknown	16	2.06%
Total	775	100%

Response Time (Arrive Scene - Enroute)		
Minutes	# of Runs	% of Runs
0 - 5	451	58.19%
6 - 10	67	8.65%
11 - 15	48	6.19%
> 15	174	22.45%
Unknown	35	4.52%
Total	775	100%

Scene Time (Depart Scene - Arrive Scene)		
Minutes	# of Runs	% of Runs
0 - 10	122	15.74%
11 - 20	210	27.10%
21 - 30	128	16.52%
> 30	192	24.77%
Unknown	123	15.87%
Total	775	100%

Run Times (continued)

Hospital Time (Depart Hospital - Arrive Hospital)		
Minutes	# of Runs	% of Runs
0 - 5	17	2.19%
6 - 10	20	2.58%
11 - 15	11	1.42%
> 15	427	55.10%
Unknown	300	38.71%
Total	775	100%

Response Mode

Response Mode to Scene	# of Times	% of Times
Initial Lights and Sirens, Downgraded to no Lights or Sirens	5	0.65%
Lights and Sirens	244	31.48%
Lights, no siren	249	32.13%
No Lights and Sirens	264	34.06%
Not Applicable	11	1.42%
Unknown	2	0.26%
Total	775	100%

Transport Mode

Transport Mode from Scene	# of Times	% of Times
Initial Lights and Sirens, Downgraded to No Lights or Sirens	6	0.77%
Initial No Lights or Sirens, Upgraded to Lights and Sirens	4	0.52%
Lights and Sirens	77	9.94%
Lights Only - No Sirens	185	23.87%
No Lights or Sirens	128	16.52%
Not Applicable	91	11.74%
Unknown	284	36.65%
Total	775	100%

Average Run Mileage

To Scene		
Miles	# of Runs	% of Runs
0 - 5	512	65.89%
6 - 10	100	12.87%
11 - 15	41	5.28%
16 - 20	31	3.99%
> 20	86	11.07%
Unknown	7	0.90%
Total	777	100%

Average Run Mileage (continued)

To Destination		
Miles	# of Runs	% of Runs
0 - 5	468	60.23%
6 - 10	20	2.57%
11 - 15	21	2.70%
16 - 20	46	5.92%
> 20	199	25.61%
Unknown	23	2.96%
Total	777	100%

Disposition

Response Disposition	# of Times	% of Times
Cancelled	43	5.53%
Crew Shuttle Only - No Patient	2	0.26%
Dead at Scene	6	0.77%
No Patient Found	8	1.03%
No Treatment Required	74	9.52%
Patient Refused Care	144	18.53%
Standby Only - No Patient Contacts	69	8.88%
Transported, Treatment by Other Agency	56	7.21%
Treated and Refused Transport	7	0.90%
Treated and Released	5	0.64%
Treated, No Transport - Death	1	0.13%
Treated, Transferred Care	15	1.93%
Treated, Transported by EMS	105	13.51%
Treated, Transported by EMS (ALS)	137	17.63%
Treated, Transported by EMS (BLS)	103	13.26%
Treated, Transported by Private Vehicle	2	0.26%
Unknown	0	0.00%
Total	777	100%

Appendix B: List of Stakeholders Interviewed

Baca County Administrator

Baca County Board of Commissioners

Baca County Emergency Management

Baca County Communication Center

Springfield Police Department

Springfield Emergency Management

Baca County Sheriff's Office

Walsh Police Department

Walsh Ambulance Service Director

Walsh Ambulance Service Staff

Walsh District Hospital Board of Directors

Southeast Colorado Hospital CEO

Southeast Colorado Hospital Trauma Coordinator

Southeast Colorado Hospital Chief Nursing Officer

Southeast Colorado Hospital Ambulance Director

Southeast Colorado Hospital Ambulance Staff

Campo Quick Response Team Staff

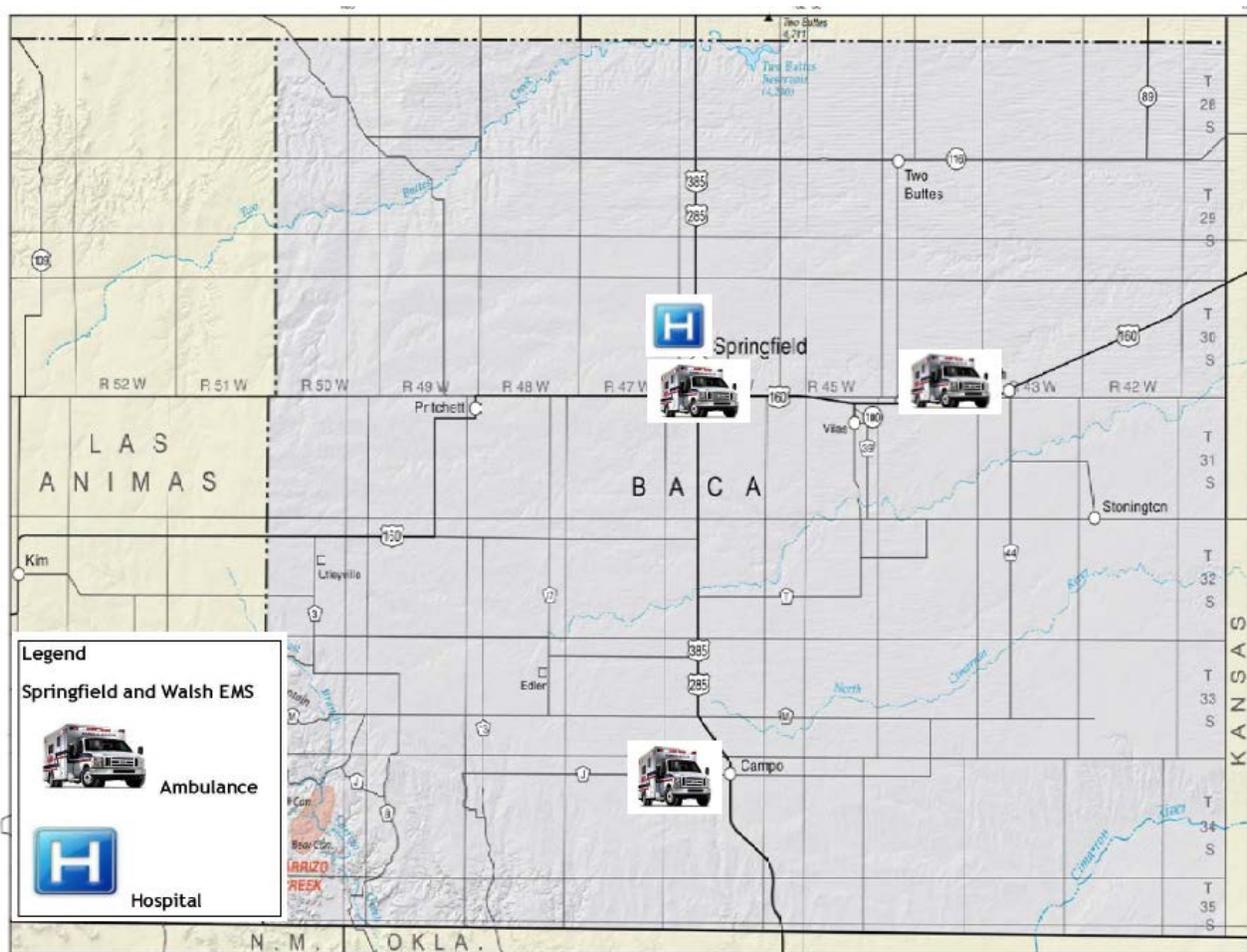
Baca County Public Health

Walsh Ambulance Service EMS Medical Director

Stanton County (Kansas) Ambulance Service EMS Medical Director

Southeast Colorado Hospital Ambulance EMS Medical Director

Appendix C: Baca County Service Map



Ambulance stations

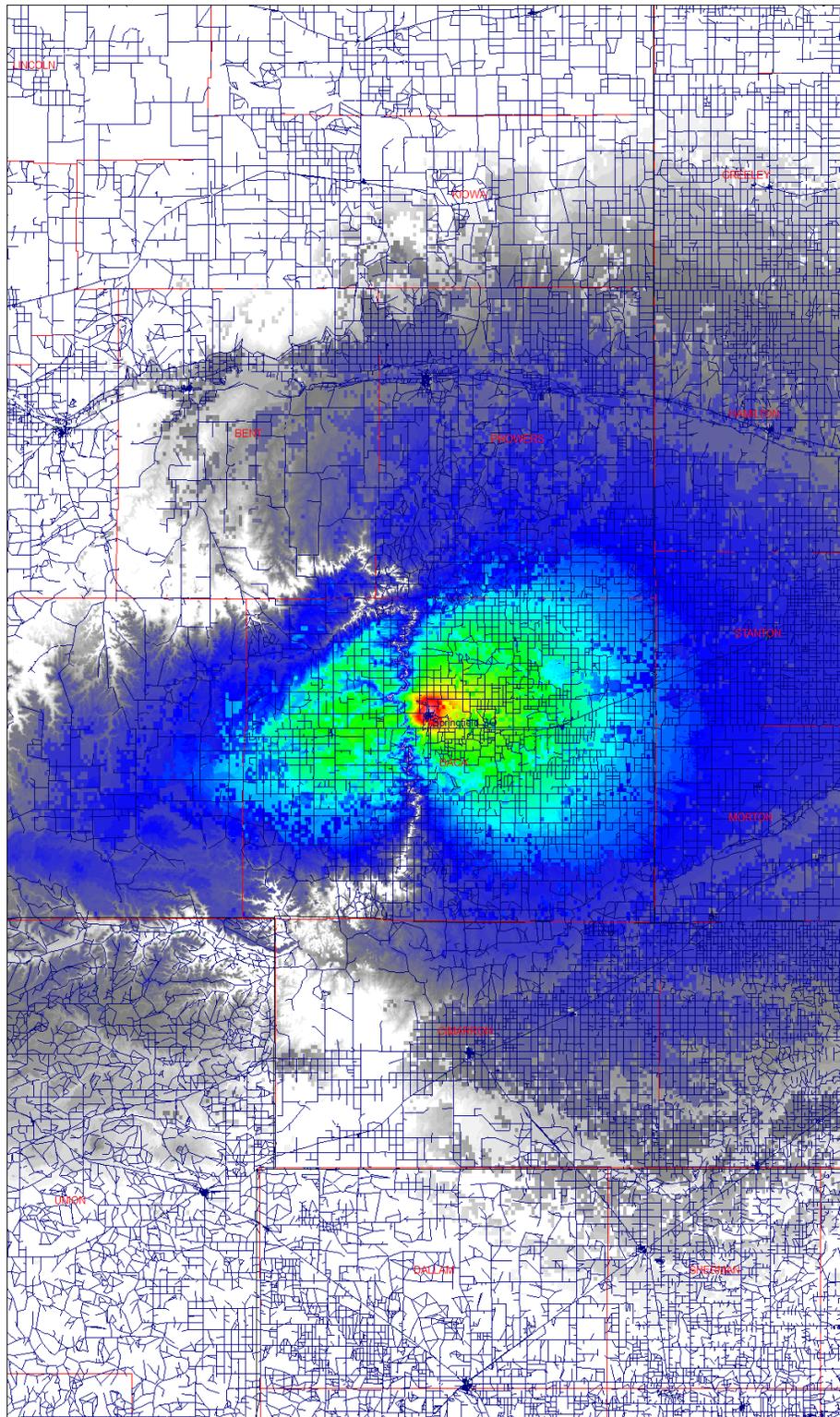
Southeast Colorado Hospital Ambulance

-  Base 1 : Town of Springfield
-  Base 2 : Campo QRT

Walsh Ambulance Service

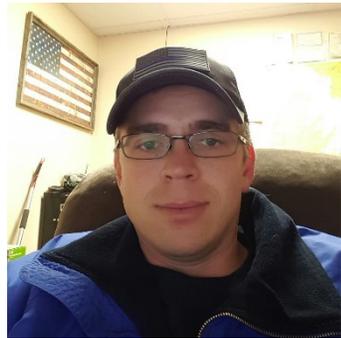
-  Base 1: Town of Walsh

Appendix D: VHF Signal Propagation Map



Appendix E: Assessment Team Biographical Information

Matthew Lindsay, NR-P



Matt Lindsay is the EMS Chief from Southwest Health System in Cortez, CO. He started in fire/EMS as a volunteer with the Cortez Fire Protection District September of 2001 and continues to be active there to date. In 2004 he was hired to work full time for Southwest Health System ambulance service as an EMT-Intermediate. In 2006 Matthew received his Paramedic certification and in 2008 was named the EMS Coordinator for Southwest Health Systems. In 2012 Matthew was promoted to EMS Chief for Southwest Health Systems. In 2013 Matthew worked with the state of Colorado to establish Southwest Health Systems as the local EMS Training Center and is currently the program director. Also in 2013 Matthew worked closely with the State of Colorado Home Health Department to establish a Community Paramedic Program for Montezuma County. When not working full time for Southwest Health System Matthew is the Montezuma County representative to the Southwest Regional Emergency Medical and Trauma Advisory Council and was recently elected Vice Chairman. Matthew has been an active member of the Montezuma County EMS Council since 2004 and is currently serving his fourth term as board President. Matthew also works PRN for the Ute Mountain Ute Tribe Fire/Rescue and has worked, as a PRN flight paramedic for San Juan Regional Air-Care 2012-2015.

Brian Rickman, EMT-Intermediate



Bryan Rickman is the retired Fire Chief from the West Routt Fire Protection District in Hayden, CO. He retired in January of 2014. Bryan was the paid Fire Chief for 23 years. Prior to that, he was the volunteer chief for several years. Bryan began his career in 1974, and took an EMT class in 1975. In 1981, the fire district took over the ambulance service as a transport agency. In 1990, Bryan was hired as the first paid fire chief in Routt County, because the call volume was overwhelming the volunteer service. Also in 1990, Bryan was recognized as the EMT-Basic of the year by EMSAC. In 1994, Bryan enrolled in an EMT-I class offered by St Mary's Hospital. In the late 1990's, Bryan was elected as the Vice President of EMSAC. Bryan taught numerous Farm Medic classes throughout the State in the late 1980's and into the 90's. Bryan is the Past President of the Routt County EMS council. Bryan flew as a Flight Medic for the Yampa Valley Air Ambulance from 2000 until 2005. Bryan also worked as an ARFF fire fighter at Yampa Valley Regional Airport for 18 years, until he retired this spring. He was adjunct faculty for the Colorado Northwestern Community College EMS program since 1986.

David Ross, DO, FACEP

David Ross, DO FACEP received his doctor of osteopathic medicine degree at Western University of the Health Sciences, College of Osteopathic Medicine of the Pacific, in Pomona, CA.



After his internship at the Chicago College of Osteopathic Medicine, he served in the United States Air Force on active duty and later in the reserves, as a flight surgeon. This was followed by an emergency medicine residency at Louisiana State University School of Medicine, Charity Hospital, in New Orleans, and then a fellowship in hyperbaric medicine at the same location.

He then spent 22 years in the practice of emergency medicine with a physician group staffing Penrose Hospital and St. Francis Medical Center in Colorado Springs, CO. During that time, he became the medical director of a helicopter EMS program (Flight for Life, Colorado Springs) as well as the medical director of approximately 40 ground ambulance services and fire departments located across eastern and central Colorado. He is board certified in both emergency medicine and emergency medical services (EMS). In 2015, he was employed as an urgent care physician with Colorado Springs Health Partners in Colorado Springs.

He is currently a full-time member of the faculty at Rocky Vista University, College of Osteopathic Medicine (RVUCOM) in Parker, CO. At RVUCOM, he is the Director of the Rural and Wilderness Medicine Honors Track and the Associate Director of the Military Medicine Track. He is also Assistant Professor of Specialty Medicine.

Dr. Ross serves as a site reviewer for the Commission on Accreditation of Ambulance Services (CAAS). In this role, he has evaluated ambulance services and fire departments providing EMS care across the United States. He has been very active in the promotion and education of concepts related to EMS safety both in Colorado and rest of the United States. He has served on the planning committee and as conference moderator for all nine EMS Safety Summits that have been held in Colorado. He also has a special interest in health policy and related political advocacy with the goal of improving the medical care environment for patients, physicians and other providers, including EMS.

Carl Smith, BPA, AEMT

Carl Smith is first a husband, father and grandfather. Carl has extensive experience in fire and EMS services. He began working on the Aurora Fire Department in 1970, and rose through the



ranks from Firefighter to Deputy Chief of Operations. As Deputy Chief, one of the areas of his responsibility was oversight of EMS operations with paramedic engines, as well as to contract for ambulance services. From 1993 to 2010, Carl also served on the Glenwood Springs and Carbondale Fire Departments, where he played a key role in the development of the paramedic programs for the two departments' ambulance services, as well as extensive experience in structural and wild land firefighting. In 2010 he retired from Carbondale Fire as the

Deputy Chief of Operations. He currently serves as a volunteer firefighter and EMT Intermediate, and as an elected member of the board for the Carbondale and Rural Fire Protection District. Carl originally obtained his EMT in 1976, and his EMT-Intermediate in 1993. Carl has two Associate degrees in Fire Science, and a Bachelor's degree in Public Administration. He has attended the National Fire Academy for multiple classes on leadership, management, emergency response and Emergency Medical Services. Carl has served as both instructor and lead instructor for multiple EMT classes at Colorado Mountain College. For over ten years he served as a member and officer of the Emergency Medical and Trauma Services Councils for Garfield and Pitkin Counties and the Northwest Regional Emergency Medical and Trauma Advisory Council. In 2012 he was appointed to the State Emergency Medical and Trauma Services Advisory Council (SEMTAC) by Governor Hickenlooper as a representative of the general public from rural Colorado. He was reappointed in 2015 and continues to serve. As with all members of SEMTAC, he annually reviews numerous grant applications from EMTS organizations across the state. He also serves on several subcommittees, including Public Policy and Finance, State Trauma Advisory Committee, and the CREATE Financial Waiver Committee.

Phyllis Uribe, RN, BSN, MS

Phyllis Uribe has been a registered nurse for over forty years. Her clinical background includes



neurosurgical nursing, Emergency Department, and critical care as both a caregiver and a manager. She worked at Swedish Medical Center from 1982 through 2014, supervising the trauma program from 1992 - 2014.

She was responsible for the transition process taking Swedish from a Level II to a Level I Trauma Center verified by the American College of Surgeons and designated by the Colorado Department of Public Health and Environment (CDPHE). Within the HealthONE system, Phyllis also assisted with development and successful designation of Level II, III, and IV trauma centers. Phyllis has experience in quality improvement on the clinical and the system level, and served as a site reviewer for

trauma centers for CDPHE and as an appointed member of the Designation Review Committee. She has participated in gap analysis and process analysis projects for both trauma systems and

individual trauma programs. Phyllis is currently Affiliate Faculty in the nursing program at Regis University, a national ATLS Educator and ATLS Course Coordinator, teaches and directs TNCC courses for EdCor, and works for MedPartners HIM and Philips Blue Jay consulting in a variety of consulting and interim program manager roles.

Scott Byars, MS, FP-C, NR-P

Scott Byars is the Data and EMS Systems Section Manager at the Colorado Department of Public



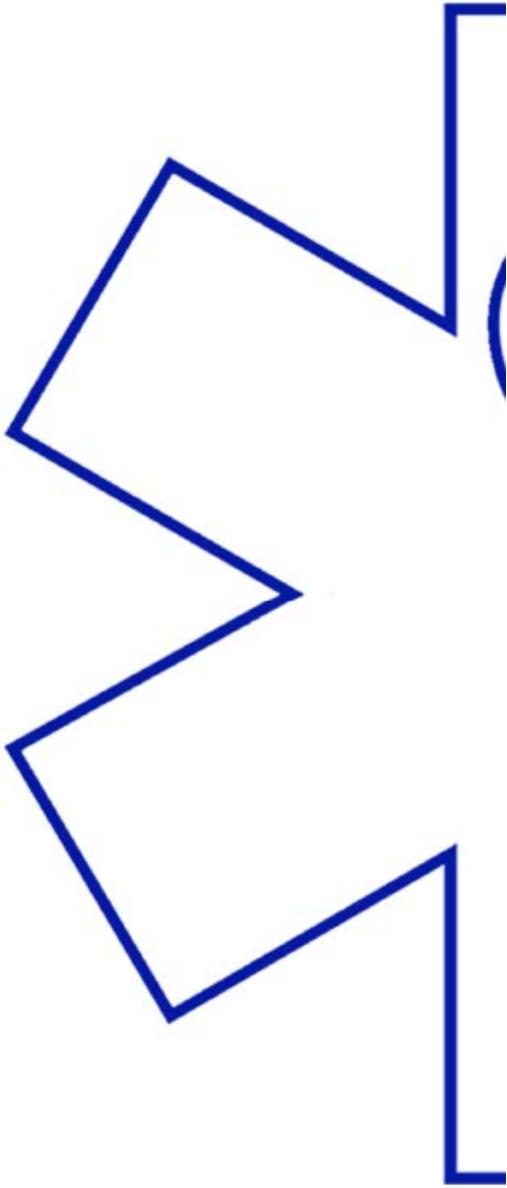
Health and Environment. He has worked within EMS nearly two decades, serving in the position of Paramedic, FF-Paramedic, and most recently he was the Chief Flight Paramedic for a rotor wing service operating in the State of Colorado. He also has previous experience within military emergency medical systems, as well as worked within level I and II trauma centers. His further experience includes high risk obstetrical transport, ground critical care transport and neonatology. Scott was the project leader for the consultative visit.

Eric Schmidt, RN, BSN, MBA, EMT-Intermediate

Eric is a Colorado native and began his career in emergency services more than 40 years ago after a call to the community for volunteers to fight a wildland fire southwest of Boulder. He is currently the funding section manager at the Colorado Department of Public Health and Environment, Emergency Medical and Trauma Services Branch. He has provided EMS consulting services, technical assistance to local governments and ambulance inspection services for ten counties in Colorado through his firm, EMS Services, since 1992. His consulting services are supported by a broad array of experiences in emergency medical and trauma services. He contracted with the Northwest RETAC to serve as regional coordinator, was a trauma nurse coordinator for Penrose Hospital, a Level II trauma center in Colorado Springs, and served as the EMS Officer for El Paso County where his duties included management of a high performance ambulance contract for the El Paso County Emergency Services Agency, administration of the county's ambulance licensing program and EMS system coordination. He has also served as the manager for a hospital district that operated an ambulance service and built a community clinic and emergency center during his tenure, directed the EMS training program for Colorado Northwestern Community College, administered federal pass-through grants as a program manager for the Colorado Department of Transportation, collected prehospital data for system analysis as an information system specialist at the Colorado Department of Public Health and Environment, held paid and volunteer positions as an EMT at several rural EMS agencies and served as a volunteer firefighter in Colorado and Wyoming. He earned Bachelor of Science degrees in Nursing, Business Administration and Mechanical Engineering from the University of Colorado, and a Master of Business Administration from the University of Oregon. Eric currently holds a Colorado Registered Nurse license, Colorado EMT-Intermediate certification and a technician level Amateur Radio license from the Federal Communications Commission.

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