Emergency Medical Services Consultative Visit

Phillips County, Colorado

April 22, 2014

Funded by: Colorado Department of Public Health and Environment

STATE OF COLORADO

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Larry Wolk, MD, MSPH
Executive Director and Chief Medical Officer

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Colorado Department
of Public Health
and Environment

April 22, 2014

Phillips County
Board of County Commissioners
212 S. Interocean Ave.
Holyoke, CO 80734

Dear Commissioners,

On behalf of the Colorado Department of Public Health and Environment (the department) and the Northeast Colorado Regional Emergency Medical and Trauma Advisory Council, we are attaching the Phillips County emergency medical services (EMS) system consultative review report. Pursuant to your invitation and support of this project, a group of EMS system consultants worked under the general coordination of both the Northeast Colorado RETAC and the department to review the current status of the EMS system in Phillips County. The Phillips County Board of County Commissioners and the Phillips 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 the Northeast Colorado RETAC for its willingness to provide additional resources and support to this effort. Understanding that Colo. 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 to all Coloradans.

As the local community considers its next steps, if our office or the Northeast Colorado RETAC can be of further assistance, we will look forward to the opportunity.

Respectfully,

D. Randy Kuykendall

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Director
Health Facilities and EMS Division
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Introduction and Project Overview

In February 2013, a system improvement funding request was submitted by the Haxtun Hospital District to the Emergency Medical and Trauma Services Branch at the Colorado Department of Public Health and Environment (the department). The purpose of the funding request was to finance an emergency medical services (EMS) consultative visit to assess and make recommendations concerning the EMS system in Phillips County, Colorado. Phillips County Board of County Commissioners, Haxtun Hospital District Hospital Board, East Phillips County Hospital District Hospital Board, the administration and medical directors from both hospitals supported the request for the system assessment.

The Emergency Medical and Trauma Services Branch at the department, pursuant to declaration and authority provided in C.R.S. § 25-3.5-102 and 603 respectively, recruited an EMTS consultative visit team to evaluate the Phillips County system and to make recommendations for improvement. Analysis of the system included interviews with all primary stakeholders in the current system. The consultation also included review of available system data and comparison to other EMTS systems within Colorado. Overall, the state of the current system was analyzed using relevant portions of the essential EMS system components contained in the 1996 National *EMS Agenda for the Future*, published by the National Highway Traffic Safety Administration. These components serve as the basis for a number of statewide and regional planning activities and are further referenced in 6 CCR 1015-4, Chapter Four. Finally, short-, medium- and long-term recommendations are provided for improvement to the overall Phillips County EMS and trauma system, including the treatment, transportation, communications and documentation subsystems addressed in C.R.S. § 25-3.5-101 et seq.

The system improvement grant authorized approximately $23,000 to conduct the review. The department developed a contractual relationship with the Northeast Colorado Regional Emergency Medical and Trauma Advisory Council (Northeast Colorado RETAC) to serve as the fiscal agent for the project. Under the project management of the EMTS Branch, a team of five seasoned leaders in emergency medical and trauma services conducted the consultative visit. Team members were selected jointly by the EMTS Branch and Northeast Colorado RETAC for their expertise in hospital administration, rural EMS and trauma systems. In addition to these team members, the Northeast Colorado RETAC coordinator was instrumental to the success and support of the project team.

This report is based on information provided to the project team and interviews conducted during the November 2013 visit. Changes may have occurred in descriptions referenced in this report since that time. No attempt has been made to reflect these changes.

As part of the Northeast Colorado RETAC, Phillips County has resources on which it can draw to assist in implementing these recommendations. The consultative visit is focused on service provision in Phillips County.

Phillips County Geography and Demographics

Phillips County encompasses 687.74 square miles in northeast Colorado. The county is bordered by Sedgwick County to the north, Logan County to the west and Yuma County to the south, with the State of Nebraska on its eastern boundary. In March 1889, the county was created and named in honor of the secretary of the Lincoln Land Company, R.O. Phillips. The county is located in an area of the country called the Great Plains, and the topography is dominated by buffalo grass and low lying sand hills. The county has four towns: Amherst, Haxtun, Paoli and the county seat of Holyoke. The county has two hospitals, one located in Holyoke and one in Haxtun.

According to the 2010 Census, the population of the county is 4,442. The population size has remained fairly stable since 1960, with a population peak of 5,797 in 1930. Approximately 97 percent of the population is white, and approximately 90 percent of employment in the county is from farm-based activities. The population is comprised of approximately 30 percent under the age of 18 and 20.6 percent over the age of 65, with the median age of 40 years. Population density is 6.5 persons per square mile with over 30 percent of the households with children under the age of 18. Over 11 percent of the population lives under the poverty line.

Phillips County contains approximately 1,015 miles of maintained roads which include U.S. Highway 6, a major east-west highway, U.S. Highway 385, a major north-south highway, Colorado Highway 59 that runs north and south through eastern Colorado, and Colorado Highway 23 that connects northeast Colorado with the panhandle of Nebraska. Phillips County is in close proximity to U.S. Interstate Highway 76, and emergency response is provided through the Haxtun Ambulance Service for a 20 to 30 mile portion of the Interstate that does not have significant population center or services. The Nebraska Kansas Colorado Railway operates 559 miles of track that run through the county carrying coal and agricultural products, including fertilizer.

Emergency Medical and Trauma Services Providers

Haxtun Hospital District

Hospital services have been offered in Haxtun since 1949. The Haxtun Hospital District was formed in 1960 and currently consists of a Critical Access Hospital licensed for 25 beds, a skilled nursing facility for swing bed patients requiring intermediate care and an extended care unit for long term residents. A variety of primary and preventive care services are provided through the Haxtun Family Medicine Center, and specialty services including cardiology, orthopedics and dermatology are periodically available.

Haxtun Hospital District was initially designated as a Level IV trauma center in 1998 and has been re-designated on a triennial basis since then. The facility cares for single system traumatic injury patients and stabilizes and transfers more seriously injured trauma patients to higher level trauma centers. Level I and II trauma centers in Greeley, Loveland and Denver receive the majority of the trauma transfers from Haxtun Hospital.

The Haxtun Ambulance Service is operated as a hospital-based service. The primary service area for ambulance service covers approximately 400 square miles including the towns of Haxtun and Paoli, as well as parts of Phillips, Logan, Sedgwick and Yuma counties. At the time of the consultative visit, Nov. 11-14, 2013, the EMS personnel consisted of three first responders, seven emergency medical technicians and one paramedic. Two Type III ambulances, stationed at the Haxtun Volunteer Fire Department, are available for use.

It was unclear to the review team whether providing EMS services was part of the core services identified on the service plan when the hospital received the hospital district designation or if it is an optional service provided by the hospital.

East Phillips County Hospital District (dba Melissa Memorial Hospital)

Hospital services have been offered since the early 1900s in a variety of locations throughout Holyoke. The current hospital opened in March 2008 and is licensed as a 15-bed Critical Access Hospital. A full service family practice clinic and 14 specialty clinics are also offered.

Melissa Memorial Hospital received its initial designation as a Level IV trauma center in October 1998 and has been re-designated on a triennial basis since that time. The majority of traumatically injured patients requiring higher levels of care are transferred to the Level II trauma center in Greeley.

The East Phillips County Ambulance Service is operated as a hospital-based service. The primary service area for ambulance services covers approximately 380 square miles including the towns of Holyoke and Amherst and extends to the Colorado/Nebraska border. During the consultative visit, representatives estimated that the service consists of 19 EMS personnel with eight-ten first responders, eight-nine emergency medical technicians and one paramedic. There are two Type III ambulances in the fleet, which are stored in an ambulance shed at the site of the former hospital.

Again, it was unclear whether providing EMS services was part of the core services identified on the service plan when the hospital received the hospital district designation or if it is an optional service provided by the hospital.

Analysis of County EMS System Elements

Prior to the consultative team visiting the county, key participants from the countywide EMS response system and local health care facilities were asked to complete a survey rating their current assessment of the EMS services and relationships in the county. The results from the various components of the survey are provided throughout this section of the report. Please note, this survey was not designed as a scientific instrument and should be considered a subjective assessment of the current EMS and trauma system. Recommendations for changes and improvements specific to the system element being discussed are found at the end of the sections.

System Integration

System Integration	**10 = Strongly Agree 1 = Strongly Disagree**											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Don't Know**	**Rating Average**
Various elements of the EMS and trauma care system are coordinated	0	1	0	0	2	2	**7**	**5**	**5**	3	2	7.52
EMS is well connected to the overall health care system	0	0	0	2	2	2	3	**5**	**7**	**5**	1	7.85
Public safety agencies cooperate effectively	0	1	1	0	**4**	1	5	3	**8**	1	3	7.17

Integration of health care services helps to ensure that the care provided by EMS does not occur in isolation, and that the care provided is enhanced by linkage with other community health resources. Both EMS agencies have limited involvement with healthcare-related activity beyond 9-1-1 emergency responses. Involvement includes participation in health fairs, ambulance presence at public events and bilingual CPR and AED training. Both EMS agencies are staffed utilizing an on-call system. This leaves little or no resources for the EMS agencies to engage in any expansion of services beyond what is currently in place. EMS agencies that have more robust integration with health services in their county or district are funded to have full time paid staff and other ancillary personnel.

Recommendation:

- The priority of EMS in Phillips County is focused on provision of fundamental services to include 9-1-1 responses and interfacility transfers. Until those priorities are adequately addressed, any additional services should not be pursued.

Legislation and Regulation

Legislation and Regulation	10 = Strongly Agree 1 = Strongly Disagree											
	1	2	3	4	5	6	7	8	9	10	Don't Know	Rating Average
The County EMS Resolution provides a solid foundation for the EMS system	3	0	3	0	1	2	1	**8**	2	1	5	6.10
EMS organizations are in compliance with all applicable regulations	0	0	1	0	0	1	3	5	**8**	3	6	8.19
All participants in the EMS and trauma care system understand their role	1	0	0	1	1	2	4	**5**	**6**	4	1	7.67
The EMS system is accountable to the public for its performance	2	0	2	0	3	0	4	1	**8**	5	2	7.24

Under Colorado law, the Phillips County Board of County Commissioners is the ambulance licensing authority as defined by C.R.S. § 25-3.5-301. The county also has the power to organize, own, operate, control, direct, manage, contract for or furnish ambulance services, C.R.S. § 30-11-107(q). The county contracts with a private vendor for the inspections and licensing of the ambulances used in the county. County involvement in the provision of ambulance services, however, is limited to contributing funds for the insurance and replacement of vehicles; operations and management of emergency medical services in the county is under the control of the administration at the two hospitals.

The Phillips County Ambulance Resolution was adopted in January 1986 without any evidence of renewal or review since then. In discussion with those interviewed, the resolution does not define or reflect the way the EMS system is functioning today. The resolution contains references to the Board of Medical Examiners, which no longer has any jurisdiction over EMS. No one questioned during the interviews was able to identify the individual referenced in the resolution as the "Coordinator."

The team was informed that the Phillips County EMS Council meets twice a year and is comprised of representatives from each ambulance service, the administrator from each hospital, a county commissioner and the county administrator. The goal of the council is to collaborate and prioritize goals for the year in order to ensure all the constituents in their service areas receive adequate medical attention. However, when asked about the effectiveness of the council, the EMS staff members interviewed from one of the hospitals were unaware of the existence, purpose or accomplishments of the council.

Recommendations:

- As a priority, the current Phillips County Ambulance Licensing Resolution needs to be updated to reflect current regulations as well as reflect how the agencies operate. This resolution should be the framework providing structure to the county's EMS system. Phillips County has the authority to establish this framework to meet or exceed state requirements.

The Northeast Colorado RETAC should be in a position to assist the Board of County Commissioners with this process. As defined in the Ambulance Resolution, the "coordinator" should be identified along with the duties of the position, so all agency members are aware of who the individual is, should the agencies require information or assistance.

- The Board of County Commissioners should formalize the EMS Council and its membership. The council should be charged with the duty of keeping the board apprised of the issues surrounding EMS in the county. The council should also be a forum to discuss the following issues:

  Hospital interface
  Disaster preparedness
  Mutual aid
  Communication and paging issues
  Standardization between agencies
  Long distance transport issues
  Collaborative grant writing
  EMS master planning within the county

All agencies that interface with EMS, including the coroner, should have voting membership on the council. The council should be required to report to the Board of County Commissioners on EMS issues on a regular basis.

System Finance

System Finance	**10 = Strongly Agree 1 = Strongly Disagree**											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Don't Know**	**Rating Average**
The EMS system is adequately funded	2	0	**4**	**4**	2	2	0	3	1	2	7	5.25
The local EMS is sustainable over the long term	**4**	0	2	1	**5**	2	2	2	2	1	5	5.19
The public is willing to support EMS funding needs	2	1	1	1	1	1	**4**	**4**	1	**4**	7	6.55
Ambulance rates are reasonable	1	2	0	0	**4**	1	1	2	3	2	11	6.31

Emergency medical service systems, similar to all public and private organizations, must be financially viable. In an environment of constant economic flux, it is critical for a solid financial foundation. Phillips County EMS coverage is provided by two separate and distinct hospital-based ambulance services. A consistent theme voiced during all interviews was the lack of adequate funding needed for long term stability of the programs. The average score of the pre-visit survey for the four questions related to system finance and sustainability ranges from 5.19 to 6.55, with 27.9 percent of the respondents indicating that they did not know. This feeling of

uncertainty regarding financial stability of the EMS services in Phillips County supports the team's impression that there is notable risk to the long term financial survival of the EMS programs. Both agencies reported an operating loss in the financial documents reviewed.

Operational funding for the ambulance agencies comes from transport revenues. One of the agencies showed an increase in ambulance revenues from 2010-2011 as a result of adjustments in rates to be consistent with other like services in northeast Colorado. There is disparity between the crude collection rates reported by the two agencies. Ambulance billing is done by the billing offices of the two hospitals. A detailed review of ambulance billing procedures was beyond the scope of this specific consultative visit. However, there appears to be an opportunity to improve collections for Haxtun ambulance services.

Both agencies provide interfacility transports as part of their service. Interfacility transfers provide an opportunity to enhance revenues. The challenges with staffing long distance transfers have resulted in East Phillips County Ambulance utilizing EMS providers from Wray and Yuma for a reported 40 percent of interfacility transfers. This solves the staffing barriers but also results in loss of revenue for the East Phillips County Hospital District.

The collaborative arrangement between both agencies and the county in the state grant funds process for ambulance replacement is viewed as a significant strength in providing capital resources. In addition, the county provides ambulance insurance. There was some difference in input received by the review team regarding the level of coverage provided by the county. Specifically, did it include vehicle only or driver liability? This should be clarified. As Critical Access Hospitals, Medicare allowable costs can be calculated into the charge structure. In discussion with the Board of County Commissioners, they indicated they would be open to discuss the transfer of ownership of the ambulances to the districts. This may offer the opportunity to enhance collections by adjusting for Medicare allowable costs.

The long term financial viability of the ambulance services would likely require a significant change in foundational funding. Even though the two services are funded by the districts, they provide service for the entire county and portions of adjoining counties. The development of a specific ambulance district for EMS in Phillips County, separate from the hospitals and funded by tax revenue specifically for EMS, could address the long term financial stability. This approach would require further in depth evaluation and cooperation between the districts and the Board of County Commissioners.

Recommendations:

- Seek consultative services to assess ambulance billing and collection practices to ensure that usual, customary and reasonable charges are in place and that each district is maximizing the reimbursement potential for EMS services. Other resources in the Northeast Colorado RETAC have provided billing services for EMS providers within and outside of the RETAC.

- Evaluate the benefits of shifting ambulance vehicle ownership from the county to the individual hospital districts to potentially enhance collections through adjusting for Medicare allowable costs.

- Explore the potential of developing an EMS special district, under C.R.S., Title 32, to create a long term funding source.

Human Resources

Human Resources	**10 = Strongly Agree 1 = Strongly Disagree**											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Don't Know**	**Rating Average**
Our community has adequate numbers of EMS providers	**6**	2	4	**5**	1	2	0	**5**	1	1	0	4.37
Adequate numbers of EMS response units are available	2	0	1	0	2	2	4	**9**	3	4	0	7.19
EMS providers are held in high regard by the community	0	0	0	1	3	0	4	**8**	5	5	1	7.92
People want to work or volunteer for EMS organizations	4	0	**5**	1	**5**	3	**5**	2	1	1	0	5.04
EMS providers are overworked	1	0	1	4	3	4	3	3	0	**5**	2	6.42
EMS providers have a high turnover rate	1	1	3	2	3	3	**4**	2	3	2	3	6.00

The EMS services at both hospitals are staffed completely by per diem staff with the exception of a first responder in Holyoke who works at the hospital and completes the duties as the EMS coordinator. The consultative visit team was very impressed with the dedication and commitment of all the well-trained members of the Phillips County emergency services community who were interviewed. It should also be noted that the willingness of all EMS providers to respond, advance their knowledge and skills whenever possible and to care for their families, friends, neighbors and strangers passing through their community is quite laudable; they all have other responsibilities and yet give a significant commitment of time.

There was a great deal of well-deserved pride expressed that the EMS providers were consistently meeting the current 9-1-1 service needs for the communities. However, given the dwindling human resources, this success is not sustainable and appears to mask a number of issues that may eventually cause both systems to fail.

The two EMS agencies have taken differing approaches for staffing personnel. Haxtun providers sign up to cover weekend shifts from 6 a.m. Saturday through 6 a.m. Monday. There is no scheduled coverage during the week; the expectation is that whoever is available to answer the request for EMS services will respond to the page. Providers receive $2.50/hr. for being on call, and an additional flat rate is paid if they transport patients due to a 9-1-1 response or for an interfacility transfer. The amount paid varies based on the distance traveled.

The EMS providers in Holyoke sign up to cover shifts around the clock, 7 a.m. Monday through 5 p.m. Friday. Weekend coverage is provided by those available to respond at the time the page for EMS goes out. Providers receive $1/hr. to be on call and receive an hourly rate if they go on a run. The hourly rate paid the providers varies based on the skill level of the provider. Both EMS services identified a number of challenges for continuing to provide EMS services in the county, including:

- The lack of additional residents in the county willing to train and participate as EMS providers.
- Concern that both systems may be relying on only one or two key leaders. In the event those leaders become unavailable to the community, significant organizational disruption could occur.
- Inadequate numbers of advanced level EMS responders to take the interfacility transports or provide Advanced Life Support (ALS) services for 9-1-1 calls when needed.

Recommendations:

- The hospitals need to decide if they truly are able to continue providing hospital-based EMS in the county. Discussions should take place between the two hospitals as well as with the Board of County Commissioners since the power to operate, control or furnish ambulance services lies with the county.

  If the services remain hospital-based, the county and facilities should support the services with a mix of scheduled and unscheduled/on-call positions. Each facility would need to determine how many EMS positions to pay full and/or part-time and how many to continue paying on an as-needed basis. The scheduled positions should be open to all qualified EMS responders in the county to apply for, thereby eliminating any animosity that might be created due to seemingly unfair advantages provided to some individuals.

- For interfacility transports, the hospitals should consider hiring paramedics to handle transfers for both facilities. Drivers will need to be provided for these transfers, but this role may be able to be filled by retired or semi-retired residents in the county who could be available at all hours without necessarily being paid to be available. These drivers would be paid by the hour while on the transfer. When not on transports, the paid paramedics could work in the hospitals and clinics assisting in direct patient care, providing training for EMS providers and allied health personnel, and conducting performance improvement activities. They could also help provide some coverage for 9-1-1 calls when they are available. This option requires more time to set up and would require finding paramedics interested in working in a rural community. The hospitals could offer to pay for a couple of the current EMS providers to obtain paramedic training with an agreement that, once trained, they would return to the county and work. Alternatively, the hospitals could try to recruit experienced paramedics who are looking for the slower pace provided in a rural low-volume area.

- Initiate an in-school program at the high schools, such as first aid training for freshman classes, CPR/AED training for sophomore classes, first responder training for junior classes and EMT training for senior classes. This plan would prepare individuals to begin the advanced level of training after high school graduation and allow for a pool of candidates to choose from as the need arises in the county.

Medical Direction

Medical Direction	10 = Strongly Agree 1 = Strongly Disagree											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Don't Know**	**Rating Average**
The medical director(s) participate actively in the system	0	0	0	2	2	1	**5**	4	**8**	**5**	0	7.89
The medical director(s) regularly monitor clinical performance	1	0	1	0	1	1	2	**5**	**8**	4	4	7.87
The medical director is consulted on EMS and trauma care system issues	0	0	0	0	0	3	3	2	**11**	4	4	8.43

The role of the medical director is to provide medical leadership for EMS. EMS medical directors are charged with the ultimate responsibility for quality of care delivered by EMS personnel, and they champion the value of EMS in the rest of the medical community. He or she is responsible for coordinating with other community physicians to ensure their patients' issues and needs are understood and adequately addressed by the system.

EMS medical direction ultimately affects the care provided to patients in the community. Medical directors grant clinical privileges to EMS providers, determine EMS system practice parameters and maintain authority for all care provided by EMS. It is believed and supported by many that EMS medical direction must be available to all EMS processes, including emergency medical dispatching and education as well as quality improvement activities, clinical protocols and daily care of the patients in the pre-hospital arena.

The EMS agencies in Phillips County are fortunate to have two engaged medical directors. In interviews with both agencies, staff members were highly complimentary of their medical directors. The medical directors regularly attend crew meetings, conduct trip sheet reviews and provide education and case reviews. The review team recognized that the dedication and personal involvement of the medical directors are significant strengths for both agencies. Both medical directors wear multiple hats for the facility in addition to EMS medical director, including chief of staff and trauma medical director. One of the medical directors also serves as the coroner for Phillips County.

It is clear that the medical directors face the challenges of rural, low volume services with resource and staffing challenges in which their very existence as two separate agencies complicates the situation and further straps their marginal financial resources. There has been one recent, brief meeting of the two medical directors during their tenure. An opportunity to network and problem solve together is being missed by the two services continuing to operate in isolation. Regular meetings between the medical directors would provide opportunities for collaboration and support the development of a more unified EMS system in Phillips County. Both EMS medical directors and their respective ambulance agencies face the potential responsibility for catastrophic "no shows" for 9-1-1 emergency calls. Scheduling issues, personal

job security and burnout were mentioned by many caring EMS providers. Documented response times for 9-1-1 response are short due to many close in-town transports.

There were anecdotal reports that some interfacility transfers require multiple callouts to get a two-person crew to respond to conduct the transfer. The hospitals being transferred to are far away, and these transfers are time and care-intensive. If they occur at night, many of the committed EMS providers are unable to go due to daytime job requirements, certification level and fear of job security issues. If the hospital based EMS services are used, the medical directors, hospital staff and hospital administrations are forced to pull from limited nursing staff to transfer sick and seriously injured patients to higher level care centers and to maintain the level of care required en route to those tertiary centers. This temporary solution may not provide the most optimum care to the patient during transport and depletes in-hospital resources.

The Northeast Colorado RETAC has the regional expertise of the Northeast Physicians Advisory Board as well as a regional medical director. Collaboration with the advisory board and regional medical director would provide additional support and resources to the medical directors and enhance collaboration not only in Phillips County but also the region.

Recommendations:

- Initiate communication and collaboration between the EMS medical directors. They play a key role in bridging the gap and consolidating resources between the two facilities. As the EMS leaders in the county, it is recommended that they play a more active role in addressing the EMS challenges facing Phillips County.

- Communication between the medical directors should be both formal and informal. They should consider cross-covering each other when one is out of the county, especially for an extended period of time. Additionally, they should both support unified county protocols as soon as possible.

- The EMS medical directors throughout the Northeast Colorado RETAC have formed the Northeast Physicians Advisory Board to collaborate and advise the RETAC members. Both EMS medical directors could benefit from participating in this physician advisory board. Issues unique to northeast Colorado with physicians practicing in neighboring counties would be discussed and potential solutions created.

- Both medical directors wear many hats, and they have been generous with their time to the EMS providers. However, they should consider further formal training, when possible, such as completion of an EMS Medical Directors training course through the American College of Emergency Physicians.

Clinical Care

Clinical Care	10 = Strongly Agree 1 = Strongly Disagree											
	1	2	3	4	5	6	7	8	9	10	Don't Know	Rating Average
The EMS system has good clinical protocols	0	0	0	0	2	0	2	**11**	4	2	5	8.00
EMS protocols are coordinated between organizations	0	3	1	0	2	0	2	**7**	1	2	8	6.56
EMS and trauma care providers are well trained	0	0	0	1	3	0	**6**	**7**	**6**	2	1	7.64
EMS and trauma care providers are experienced	0	1	1	1	2	1	4	**6**	**5**	2	2	7.22
Capability exists to provide critical care interfacility transports	1	0	4	3	3	2	4	1	**5**	2	1	6.12

EMS systems provide access, instruction, emergency response, care and transport to the hospital for those with real or perceived emergency needs. When appropriate and available, EMS agencies provide emergent and non-emergent transportation to regional centers with higher-level care and centers of specific care excellence. Immediate availability and mobility is what distinguishes EMS from other components of the health care system.

The appropriateness of EMS clinical care in Phillips County was not evaluated as part of this site visit, and no chart review was completed. No specific clinical weaknesses were revealed and cases were not dissected to gain opportunities to improve.

Formal care protocols are in place for both EMS agencies. Each agency adopted a set of protocols from neighboring agencies and made appropriate edits for its ambulance service. The review team did not have an opportunity to review any differences or similarities between the two separate sets of protocols. Both agencies receive external educational support, which is an effective method to stay current with trends in EMS care. Both agencies receive educational funding support and assistance from the Northeast Colorado RETAC.

The key to the evaluation of clinical care is an effective performance improvement program. As mentioned earlier in this report, both medical directors are active in the review of trip sheets and patient care records. Statistics are kept regarding response and scene times. In speaking with both EMS teams and directors, it did not appear that set clinical filters are tracked. It may be beneficial for each EMS agency to identify a set of certain conditions, low volume/high risks diagnoses, etc. and initiate an automatic medical director review of that trip sheet. This process should include both 9-1-1 calls as well as interfacility transfers. In addition to the clinical filter reviews, there needs to be a random sampling of 10 percent of all trip sheets and specific time or seasonal bench marking of topics, (i.e. asthma, hyper/hypothermia) by the medical directors.

Receiving feedback from tertiary facilities is an effective method to evaluate care. During interviews, staff indicated that follow-up was received inconsistently. Neither agency indicated any gaps in care or concerns regarding patient outcome issues. It is unclear if they would recognize these concerns or openly discuss them without a performance improvement system in place. Focused trip sheet reviews, data collection, case reviews with medical directors, directed education based on identified learning opportunities and post testing follow-up after training for knowledge and retention validation are required to close the loop.

Recommendations:

- Develop a set of clinical filters. This could be accomplished by consulting with the EMS resources currently utilized for external education. This should include both 9-1-1 and interfacility transfers. To maximize the medical directors' time, assure that they review only selected trip sheets and ensure that the selection system is objective, pre-planned and free of individual bias.

- Review the process for receiving follow-up from tertiary facilities. Coordinate with the emergency department, which often times may receive the follow-up. If that is not the case, the emergency department director should contact the tertiary facility and then share the follow-up through the EMS director.

- Consider developing one common set of EMS protocols that would be used by both services.

- Develop quarterly joint case review sessions. This will maximize the opportunity to learn from case review in a per diem, low volume system.

- Consider joining both EMS agencies into one Phillips County EMS agency under the direction of an ambulance authority. The current EMS Council, to some degree, could be used to create this authority.

- Give serious evaluation to developing a rapid response ALS paramedic unit in the county that would respond on critical incidents, be specifically part of the outbound critical care team and support the EMS medical directors, EMS director/coordinators and all EMS personnel educationally in the county.

Public Access

Public Access	10 = Strongly Agree 1 = Strongly Disagree											
	1	2	3	4	5	6	7	8	9	10	Don't Know	Rating Average
The public can easily access EMS services	0	0	0	0	0	1	5	**7**	**6**	**8**	0	8.56
High quality medical instructions are provided to callers	0	0	2	1	2	3	3	2	1	1	**12**	6.27
Sufficient EMS response is available quickly	2	1	2	0	5	4	2	**6**	2	2	1	6.12
Inter-hospital/interfacility ambulance transport is readily available when needed	1	1	**5**	0	4	2	**5**	4	2	2	1	5.96

Communications

Communications	10 = Strongly Agree 1 = Strongly Disagree											
	1	2	3	4	5	6	7	8	9	10	Don't Know	Rating Average
Local cell phone coverage is adequate	4	0	2	0	2	2	**6**	3	4	4	0	6.44
EMS and trauma care organizations have good access to broadband internet service	1	0	0	0	1	0	2	**8**	5	3	7	7.95
Public safety agencies have an effective radio system	0	0	0	1	0	0	1	5	**8**	**8**	4	8.83

The E9-1-1 Public Safety Answering Point is the Phillips County Communications Center located in Holyoke. The communication center is governed by the Board of County Commissioners and has two authority boards (9-1-1 Authority Board and Communications Board) which guide operations. The communication director reports to the county commissioners, and there are several trained dispatchers available to staff the center around the clock with one dispatcher during each shift. The communication center dispatches law enforcement, fire and EMS personnel. The current EMS paging system used is by cell phone, texting or email. Fire departments are dispatched along with EMS for motor vehicle crashes, and EMS is dispatched with fire departments to all structure and grassland fires. This seems to work well for the area.

The survey indicates that the general public of Phillips County perceives that they simply need to call 9-1-1 if they need emergency help, and an ambulance with a highly trained crew will arrive fairly quickly at their emergency. In contrast, the survey also found that the healthcare providers themselves felt the number of EMS providers in the county was inadequate. Most of the

responders interviewed reported that receiving pages by text, cell phone or email may not be the best option for EMS paging, but it is the most economical for the county at this time. When a request for EMS is dispatched, available personnel notify the communication center that they are responding. This is reportedly not done consistently either due to lack of training or lack of appreciation by the responder as to the importance of a response. A reply text will be sent to the dispatcher, or once EMS personnel arrive at the emergency vehicles, they will communicate their response via the 800 MHz digital trunked radios. Dispatchers will continue to send out the page requesting an EMS response until notification is received that a crew is responding. It was noted this is sometimes due to poor or no communication with dispatch until someone arrives at the ambulance station and signs on the air.

The lack of a standard methodology for notification to the communication center that personnel are available and responding can lead to delays, confusion and uncertainty by all parties involved regarding who is responding and if the right level of responder is available to take the call. Periodically, confusion arises within the system regarding 9-1-1 calls coming from Yuma County, Logan County or Sedgwick County addresses that are routed to the Phillips County Communication Center due to the Phillips County phone prefixes from which the call is being made. Protocols have been developed locally with adjoining services, but it is unknown if these protocols are reviewed to measure effectiveness.

Emergency Medical Dispatch (EMD) is not offered by the communication center. Utilizing an organized approach to solicit responses from the caller requesting EMS, the dispatcher could provide pre-arrival medical instructions using EMD protocols. These instructions would allow by-standers requesting EMS to initiate stabilizing interventions (such as airway management and preventing shock), while waiting for EMS personnel to arrive.

Recommendations:

- Provide public education for the citizens of Phillips County regarding the EMS system and how it functions. Help the public become aware of the difficulties involved in providing the EMS services the citizens expect with only a few, dedicated, well-trained individuals – including costs to the providers' personal and professional lives.

- The communication center needs specific protocols to be followed consistently by all dispatchers designating which responders are to be paged to what types of emergencies and what is to be done if the emergency is located outside the Phillips County response area.

- Providing each responder with an 800 MHz hand held radio is a reliable method of communication for emergency response that has proven successful in many other counties. The communication center can then page emergencies over the 800 MHz radio system and responders can provide immediate feedback regarding who is responding. A multi-select switch at the communication center allows fire departments and EMS to be paged simultaneously on both groups' channels.

  If all responders had radios, the problems related to paging via phone, text and email would be avoided. This would allow the responders to coordinate their responses to the scene. While these radios are expensive, with some time and coordination among all agencies, a

solution to this problem is quite possible. There are several grant options and some local foundation options that could help complete this goal in a timelier manner. Regardless of whether radios are obtained and provided to all responders or not, the dispatch center and EMS personnel from both hospitals should work together to develop a standard mechanism for notification to dispatch that EMS personnel are responding in order to get the right crews to the right emergencies with the appropriate number of responders in an appropriate time.

- Provide Emergency Medical Dispatch training for all dispatchers so they can give beginning-level medical instructions to 9-1-1 callers prior to EMS arrival. EMD training requires a level of commitment for dispatchers as it will involve initial training as well as continuing education to maintain the training.

Information Systems

Information Systems	**10 = Strongly Agree 1 = Strongly Disagree**											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Don't Know**	**Rating Average**
Transport EMS services collect and upload electronic patient care data to the state system	0	0	0	0	0	0	2	1	4	**9**	10	9.25
System performance data is regularly collected and analyzed	1	0	0	0	2	0	1	1	**6**	4	11	8.00
Information technology needs are being met within the EMS and trauma care system	0	0	0	0	3	1	1	2	**6**	3	10	8.00

Both ambulance services collect electronic EMS run data utilizing the ImageTrend Field Bridge platform provided by the state. It was unclear whether system performance data is regularly collected and analyzed by either ambulance service. It was also unclear if and when data from interfacility transportation provided by other EMS agencies is analyzed.

Evaluation

Evaluation	10 = Strongly Agree 1 = Strongly Disagree											
	1	2	3	4	5	6	7	8	9	10	Don't Know	Rating Average
Each EMS organization has a defined and ongoing quality improvement program	0	2	0	1	1	0	3	4	5	3	**7**	7.42
Quality improvement findings are integrated into the EMS and trauma care system	0	1	1	0	2	0	2	5	**7**	2	6	7.60
Quality improvement activities are coordinated and communicated between services	3	0	1	0	2	2	3	1	3	2	**9**	6.12

Both district EMS agencies are engaged in trip sheet review programs and participation is reported as high. We congratulate the agencies in this effort. Like any medical activity, constant effort to review past work for opportunities to improve is critical. Additionally, looking for ways to proactively improve the system and its performance is important to maintain quality patient care.

The medical directors are engaged with the EMS providers in run reviews and are readily available to answer questions arising from a specific run in "real time." Both EMS agencies felt supported by their medical directors. The medical directors served in this capacity in addition to their other hospital responsibilities. We understand that new physicians have recently arrived in each community. These additional resources may provide some relief for the medical directors allowing them time to participate in a more formalized process to perform system evaluation.

There is no evidence to indicate that common issues identified through individual case review are stratified against pre-determined benchmarks. Several opportunities exist for evaluating the EMS system from various aspects. Many of these recommendations will be enhanced by or require collaboration between the two districts in order to gain more efficiencies and provide a coordinated county-wide preparedness.

Recommendations:

- One of the concerns expressed in both districts is the issue of difficulty in assuring timely out bound ALS transfers. However, there was no documentation measuring how this impacts the patient. Data collection and analysis need to take place in order to evaluate the extent of this problem. Potential questions to answer include - How long (after the decision to transfer was made) was the patient en route for the transfer? What was the means of transfer? Were there extenuating circumstances such as weather or the inability for the local agency to respond? Once the transport agency arrived, was all documentation ready? Collecting quantifiable data regarding these issues is needed in order to consider options for improving this weak link in the patient care process.

- The EMS agency directors or representatives from the district hospitals should meet to identify needs and plan educational programming accordingly. Continuing education programs involving external speakers or programs are open to each agency, but collaborative planning was not reported. The open invitation to education is beneficial, but coordinated planning would enhance the educational opportunities for the agencies and possibly lower costs.

- In addition to conducting trip sheet reviews, a formalized quality improvement process needs to be established within each service. Such a program would include establishment of predetermined criteria that would cause a case to be reviewed by the medical director. This could reduce the need to review every trip sheet and focus on services that fall out of an expected range of criteria. For any activity that is identified as falling outside the expected statistic or care, where a unique circumstance was not established as a cause, a documented course of action should be established. All action steps developed to address the issue should be tracked and evaluated for effectiveness in order to attain "loop closure."

- The review team was furnished with statistics that are collected by each agency. We did not see any documentation that these statistics were used in evaluating variances in expected performance. Examples of such evaluation would be the number of times that response times were outside the expected range or the time from the determination for the need of a transfer to the time the patient actually leaves the emergency department. These can be used to identify areas where improvement is desired. As with the recommendation above, a system to re-evaluate those areas after changes are made should be implemented to measure the success of improvement activities.

- There was no evidence of broader inclusion of the EMS services in overall hospital quality improvement activities. As departments of each hospital, the activities of the EMS service should be integrated in the overall evaluation of patient care on the complete continuum of care within each hospital.

- Ensure the patient is part of the evaluation process. While the patients may not understand the specifics of care that is provided, they hold a very important place in giving feedback to the providers from their point of view. Engaging in a feedback process will also give the agencies the opportunity to keep their services in front of the community. We recommend a survey be developed that is sent to patients following their contact with the EMS agency and that these responses be tallied to identify potential opportunities to improve.

Public Education

Public Education	10 = Strongly Agree 1 = Strongly Disagree											
	1	2	3	4	5	6	7	8	9	10	Don't Know	Rating Average
The public understands and supports the local EMS and trauma care system	1	2	1	2	3	2	**4**	**4**	2	2	3	6.13
Regular efforts are made to inform the public about EMS and trauma care	3	1	2	2	2	**4**	0	1	3	2	6	5.40
Regular efforts are made to inform policy makers about EMS and trauma care	2	2	3	3	1	2	3	1	3	2	**4**	5.45

Both EMS agencies in the county are participating in various public functions to let the community know of their important role. The consulting team was told that passive participation at events such as the local football games and county activities is common. More active participation in community health fairs was also mentioned.

Comments reflected a perception among those the team met with that the community does not understand what is required to provide EMS services. Rather, community members simply expect that when they call 9-1-1 or need to be taken to a higher level of care, someone will be there. This is a common perception in most communities and will not change until something significant occurs to disprove that expectation. It is in the interest of both agencies and the county to increase the visibility of the services provided by EMS and engage the community in appreciating the effort required and value that the services provide to the county.

The survey results showed a less than satisfactory rating in regard to public education about EMS. We feel that by increasing the public's awareness of the EMS staffing and other issues occurring at each hospital, there will be increased support for EMS in the county. This should create a stronger foundation if additional funding or changes to the delivery system are put in place.

We are sensitive to the comments made by several interviewees that no one wants to create a panic among the county residents that their call may not be answered, but at the same time, it is important to impress upon the residents that providing EMS takes community engagement. An educated public may result in a greater pool of participants. Additionally, efforts to provide information on injury prevention and wellness may reduce the incidence of injuries and illness.

Both districts, in most cases, can use the recommendations below. In some instances, efforts could be combined to result in a single message and help reduce the workload on the districts by sharing the effort and product.

Recommendations:

- Transition passive activities to more active interaction with the community. When covering a sporting event or community activity, EMS providers could offer blood pressure checks or other basic health screening at the ambulance location. This gets the public interacting with the providers so they can learn more about EMS as well as increase the focus on wellness and health. EMS providers can also probe for possible interest in becoming part of the service.

- Establish a relationship with the county newspapers for frequent stories that focus on EMS and the work of the EMS services. Many newspapers look for "fill" that is provided by community organizations. A monthly feature provided by the EMS agencies and hospitals can raise the visibility of EMS and provide a forum to get the word out. Examples include a hunter safety article in September, bicycle safety in the spring and seat belt usage in the high driving season. A community profile of the EMS providers could be a recruiting tool as they say why they are involved in EMS. These profiles also could be used as invitations to bring others on board with the service. As newsworthy events happen within EMS, the newspaper should be contacted to help get the word out demonstrating the quality of care that is provided by the services.

- Have the Board of County Commissioners do annual proclamations during EMS Week and other "days" or "weeks" for issues that touch EMS and trauma. This heightens the awareness of how many different ways the EMTS system touches lives within the community.

- A regular report on activities in the EMS community should be made to the Board of County Commissioners. EMS, like law enforcement and fire, is very important to the residents of the county and should be a consideration routinely brought before the commissioners. There may be other opportunities to keep the commissioners updated, but as a minimum, a report should follow each Phillips County EMS Council meeting.

- There was significant discussion about a program at high schools in the county that engaged the hospitals in the educational process. This seems to have waned recently. We support renewing this effort to offer, as an elective, the EMT course to high school students to provide a new resource for recruiting into the EMS system. In addition to generating enthusiasm and understanding of what EMS is, it will provide additional resources to the county in case an emergency occurs in the family home, on the farm or in a business. The most effective means to ensure adequate EMS providers in the community is to "grow them at home."

Mass Casualty

Mass Casualty	10 = Strongly Agree 1 = Strongly Disagree											
	1	2	3	4	5	6	7	8	9	10	Don't Know	Rating Average
EMS agencies and facilities have written mass casualty response plans	0	0	1	0	3	1	1	**6**	**6**	**5**	3	7.96
MCI plans are regularly tested by all organizations	3	2	2	1	1	2	4	2	1	3	**5**	5.57
EMS and trauma care leaders are aware of local and state emergency management efforts and programs	0	0	2	1	3	3	2	**4**	3	**4**	**4**	7.09

The Office of Emergency Management in Phillips County is a duty assigned to the county administrator. In January 2014, the position will be transitioned to an individual responsible for that function within the county on a part time basis. The county administrator also serves as the emergency service manager with five fire departments as part of the emergency management system: Holyoke Fire Department, Haxtun Fire Department, Amherst Fire Department, Sandhills Fire Department and Wages Fire Department. Law enforcement agencies include the Phillips County Sheriff's Office and Haxtun and Holyoke Police Departments. The Colorado Highway Patrol includes Phillips County as part of its District 3 but does not maintain a post in the county.

Each hospital should have a specific surge or Mass Casualty Incident plan for its facility that includes the EMS organizations. These plans should have trigger points as well specific transport protocols, and they should be integrated into the county's MCI plan. Any and all organizations that would be expected to play a role in a mass casualty incident must be included in the planning process.

In discussions with both EMS organizations, it was obvious that despite the proliferation of federally mandated training on the National Incident Management System (NIMS), the system is not utilized on a regular basis, even though both organizations indicated they have received the required NIMS training. As a result, it would be expected that the use of NIMS in a large event would be overlooked.

Recommendations:

- The Office of Emergency Management should be the lead agency ensuring that MCI plans exist for the county. Each agency should be responsible for developing and maintaining plans that would coordinate with the overall county plan. The county emergency manager should ensure that all entities with roles in a MCI response are present in the planning process.

- Ideally a mass casualty exercise should be conducted annually, with both EMS organizations invested and involved. The exercise should involve all emergency responders, including the coroner's office. The exercise should be an annual tabletop working to a functional or full-scale exercise every two years. These exercises should be county-wide.

- NIMS refresher or retraining should be provided to all responders in the county including EMS, fire and law enforcement. By policy, the use of the Incident Command System should be incorporated into all calls.

- There are efficiencies and benefits to joint training. Though there are invites, overtures and an occasional cross training, for the most part there has been no formal collaboration or coordination of a combined training calendar that could benefit both EMS agencies and improve combined response should a large scale emergency situation occur in Phillips County.

Overall Effectiveness

In your opinion, how effective is the overall local EMS system in meeting the needs of the community with 1 being non-functional and 10 being ideal?												
Answer Options	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Rating Average**	**Response Count**
Rating	0	1	2	1	0	3	**11**	6	3	2	6.97	29
									answered question			**29**

The overall opinion of the local stakeholders and the review team is that EMS service in Phillips County is effective but in need of improvements to stay viable in the future. There are many dedicated individuals who contribute to the success of a critical system that is operated on a voluntary basis. Coverage for 9-1-1 calls seems to be adequate, although the loss of just a few EMS personnel would strain that capability at either agency at any given time.

Opportunities exist to improve a number of facets of the current system, and the recommendations made throughout this report are meant to improve and strengthen the current system. However, the current isolated approach employed by each facility to transporting patients requiring a higher level of care to hospitals outside the county is not sustainable. The facilities need to combine efforts with each other, the county administrators and other resources to meet the challenges of interfacility transports. Recommendations on how to address the challenge of interfacility transfers utilizing resources within the county have been made earlier in this report. An alternative methodology, where the hospitals would partner with a larger health care system outside the county, could also be considered. The following model drafted by the review team describes an alternative methodology for your consideration.

A DIFFERENT APPROACH

This is theoretical as envisioned by the review team. Concepts may or may not be actualized as stated, but some variant could enhance EMS in the county.

Consistent issue heard by the team:
The hospitals and EMS agencies often have difficulty mustering an appropriate ALS crew to perform outbound transfers to a higher level of care. This may result in delays in getting the patient to definitive care and/or a significant burden is placed on those who do make the transfer as it often results in personal stressors and may leave the community short of responders to 9-1-1 calls. Each community manages this challenge differently, but the concern was common to both.

There will be a new resource in the area when North Colorado Med Evac locates a helicopter in the Akron area. While this will be a new and valuable tool for transport, it cannot be relied on in all circumstances. It is anticipated that the operator will promote the service to the full region and the I-76 and I-70 corridors to make the service financially viable. Weather will continue to be an issue on occasion, reducing the availability of air transport. While the new helicopter will be a valuable addition to the county, it should not be looked at as a magic bullet. Furthermore, not all interfacility transports merit the additional costs of air transport.

There is also a desire to raise the level of service available in the county to ALS for those patients who could benefit during local or regional response. The current EMS providers are committed to the districts and their communities but are challenged to maintain training and availability at the EMT or EMT-Intermediate level. Increasing the training and certification level for even a few of the current or future EMS providers would not relieve the stressors that are felt by the providers.

Given the financial requirements of the current service levels at each district and the statements from the commissioners that their budgets are not sufficient to provide funding beyond that currently provided for vehicles and insurance, it is likely not realistic to attempt to develop a higher level of service locally. The cost of recruiting, employing, training and equipping a service given the total demand would in, all scenarios we considered, be prohibitive. In such a low volume environment, maintaining appropriate skills would be difficult to impossible. A unified county wide district or authority would aid in providing financial stability and resources to expand services.

In any scenario of ALS coverage in the local community, there will be occasions when the ALS provider(s) will be out of the community on a transfer, so no plan will guarantee an ALS provider will always be immediately available.

We feel that establishing a formal relationship with an ALS service currently operating in the region to provide permanent staffing of an ALS level provider in the districts is the option that should be pursued. We have not explored this idea beyond our own discussions, so there is no guarantee that a provider would be willing to provide this service, but we feel it is the first avenue that should be explored.

There are a number of services in the region that provide ALS level service. Any of these might be willing to support Phillips County in our model. Consideration could also be given to working with a larger system to provide the services described in this model.

The Model:
We suggest that an agreement be made with an ALS provider to locate a non-transport ALS stocked vehicle in Phillips County that is responsive throughout both districts. This could be contracted directly through the county, if a contract is necessary, or through an inter-governmental agreement between the two hospital districts and the service provider. If the services were to consolidate under an authority or special district, the contract would be with that entity.

Under the optimum scenario, two individuals would be provided: a paramedic and an EMT. The ALS providers would respond to 9-1-1 calls only at the request of the primary EMS agency when the level of care requires ALS. This could also be a backup to the two agencies when they are unable to provide a response team by a pre-defined time for 9-1-1 responses. The team would respond to the hospital directly when an outbound transfer requiring ALS is the case. Under this arrangement, when an outbound transfer is required, the ALS team would use the ambulance from the district from which the patient is being transferred.

If the ALS contractor is unable to provide two persons as described above, the model could be operated with only a paramedic. For outbound transfers, a local EMS provider or driver would be needed to drive the ambulance while the paramedic is providing patient care. In the case of local 9-1-1 responses, another person would be needed to bring the non-transport ALS vehicle to the district hospital where the patient was taken.

Advantages:
We see several advantages to the county in this model in addition to the pure increase in level of care for the county residents.

As noted, the volume of ALS transports is going to be low. The paramedic could assist the EMS services in training, quality and performance improvement activities and meeting regulatory requirements for the district's EMS services. He/she can work with the medical directors in the development and review of provider protocols and work to assure consistency throughout the county. We are confident that once the resource is available, there will be ways that downtime can be used for the benefit of the districts.

We do not envision that the persons provided through this arrangement will become permanent residents of the community or staff for the EMS agencies. We see them rotating through the community on a schedule to be worked out by the ALS agency, but for several days to a week at a time. This helps assure providers that are current and competent in their ALS skills. Housing would be worked out with the agency.

Funding:
The total cost of such an arrangement would be significant to the agency providing the service, and it is our thinking that they may be willing to assume a substantial portion or all of the costs for the benefits to them as described later. The ALS agencies may require funding support to provide the service. The county and local districts will have to determine how much funding they could provide, if asked, based on how important addressing this is.

To achieve the described service at the lowest cost to the county or district would require a more formal referral relationship with the ALS. Our discussions showed that patients are generally referred to either of the level II trauma centers located in the Northeastern Colorado RETAC.

Relationships between local primary care physicians and referral physicians have to be considered, as do the overall relations between local hospitals and referral hospitals. However, we feel the willingness to strengthen ties for emergency referrals will enhance the level of interest in becoming part of the EMS provision in Phillips County. All things being equal, if the opportunity were presented to both in a competitive manner, or along with other entities, the likelihood of lowering the cost to the county entities is greater. If this is not satisfactory to the parties, working with the desired entity directly in a negotiation on providing the service would be the better course. As with any referral, there would be no guarantees as patients and physicians have the ultimate decision on where to refer a specific patient.

Billing:
It is the team's understanding that the agency performing the transport of the patient is the billing agency. In this model, the district EMS agency doing the transfer would bill, and they could bill at an ALS rate. Therefore, it would be a revenue enhancement to each local EMS agency anytime an ALS level transfer was conducted. An agreement would have to be established with the entity providing ALS services regarding payment to the ALS agency for its participation in the transport.

Next Steps:
If this concept is of interest, we suggest the following next steps:
1. Interested parties should meet and determine if the issue of advancing the level of local capabilities and moderating the impact of outbound transfers is of significant importance.
2. If so, a task force should be identified and charged with developing the specifics of a scope of work. The task force would oversee the process to move it from initial stages through final arrangements, and it would help establish an ongoing mechanism to oversee the service. This could be an existing entity such as the EMS Council or a new group. Members would have to be given the scope of authority and support from each agency involved to fully participate and move the process forward in a timely manner.
3. Next, determine which ALS providers would be satisfactory providers of the service as described or as modified by the local community.
4. Then determine if it is reasonable to consider aligning with a single system for commitment of most patient referrals from Phillips County.
5. Create either a discussion document, Request for Information or Request for Proposal that describes what the county desires.
6. Finally, pursue the desired strategy with the selected ALS providers.

These are high level steps. Additional steps will be required to fully implement this approach, and there will be the need for appropriate legal, district board and commissioner oversight.

As previously noted, the consulting team has not had any conversations with any of the possible partner organizations, and there is no guarantee that there is interest from their standpoint. We propose this alternative, as we believe it is the most affordable and sustainable way to address the concerns of staffing and care level for outbound transfers and, at the same time, raise the standard of care for EMS in the county.

Summary of Recommendations

Type	Recommendation
Short-Term (1 year)	Educate the public regarding the need for EMS providers and the potential delays of EMS services due to the lack of personnel
	Develop a campaign for recognition and promotion of EMS in the county, including proclamations, press releases, "spotlight" news articles, etc.
	Develop a more proactive approach when participating in community events
	Update the county ambulance licensing resolution
	Formalize the responsibilities of the EMS Council
	Develop on standard methodology for EMS providers to notify the communication center they are responding to a call. Request all providers to utilize this methodology.
	Acquire consultation regarding EMS billing
	Investigate the possibility of transferring ownership of the ambulances to the hospitals
	Ensure communication and collaboration takes place between the EMS medical directors. Joint trip sheet reviews, shared continuing education offerings, etc., should be considered. They should also engage with Northeast Colorado RETAC medical directors group.
	Develop a system to receive feedback from the tertiary facilities and from the patients receiving EMS services
	Develop clinical filters for use in quality improvement reviews
	Collect and analyze data relevant to EMS system improvements
	Develop dispatch protocols to provide a consistent response methodology
Medium-Term (1-2 years)	Determine whether EMS should remain a hospital- based service, transition to a county operated service or transition to a special district with taxing authority
	Develop a first-aid/first responder/EMT curriculum at the high schools
	Determine whether paid ALS positions can be offered
	Consider developing one set of EMS protocols for the county and begin quarterly joint case reviews
	Support EMS medical directors receiving formal training on EMS medical direction and oversight

	Consider combining the EMS agencies into one ambulance authority or EMS special district
	Develop a rapid response ALS unit in the county
	Supply each EMS provider with a 800 mHz hand held radio
	Begin conducting joint annual mass casualty exercises
Long-Term (2 or more years)	Provide EMD training for all dispatchers
	Have each hospital develop/revise a facility-based MCI plan and incorporate them into the county MCI plan
	Provide NIMS refresher or retraining to all EMS, police and fire responders in the county
	Devise a long term solution for interfacility transfers

Appendix A Stakeholders Interviewed

John Ayoub, CEO, East Phillips County Hospital District

Don Burris, CEO, Haxtun Hospital District

East Phillips County Ambulance Service Personnel

Sheryl Farnsworth, Board Member, East Phillips County Hospital District

Jeff Firme, Board Member, Haxtun Hospital District

Jessica Gales, Board Member, Haxtun Hospital District

Kenny Gaskill, Phillips County Emergency Dispatch

Sharon Greenman, EMS Coordinator, East Phillips County Hospital District

Haxtun Ambulance Service Personnel

Steve Hofmeister, Board Member, Haxtun Hospital District

Dennis Jelden, M.D., Medical Director, East Phillips County Hospital District; Phillips County Coroner

K. Joe Kinnie, Phillips County Commissioner

Donald Lock, Phillips County Commissioner

Bruce Mahnke, Haxtun Ambulance Service Director

Mike Poe, Sand Hills Fire Department Chief

Rhonda Perez, Chief Nursing Officer, Haxtun Hospital District

Gary Rahe, Board Member, East Phillips County Hospital District

Randy Schafer, Phillips County Administrator

Steve Schafer, Wages Fire Department Chief

Romida Sison-Martinez, Interim Chief Nursing Officer, East Phillips County Hospital District

Harlan Stern, Board Member, East Phillips County Hospital District

Joseph Spurlock, M.D., Medical Director, Haxtun Hospital District

Scott Thompson, Board Member, Haxtun Hospital District

Michael Woodhead, Board Member, East Phillips County Hospital District

Steve Young, Board Member, East Phillips County Hospital District

Appendix B
Assessment Team Biographical Information

Ray Coniglio, RN, MSN

Ray is the vice president of Trauma and Prehospital Services for Centura Health. In this role, he is responsible for the strategic and operational components of the Centura Health Trauma System. Key duties include development and implementation of system wide evidenced based protocols, oversight of the system trauma registry, individual trauma program support and directing outreach and initiatives. The system consists of 14 trauma centers from Level I to Level V. Ray has worked extensively in rural Colorado supporting several Critical Access Hospitals in the development of their trauma programs. He has been in the role since 2009. From 1995 to 2009, he was the director of trauma and EMS at St. Anthony Central Hospital, a Level I trauma center. He served as the nursing director for Outreach from 1992 – 1995 and as the director of the emergency department from 1987-1992 at St. Anthony Central Hospital. From 1980 – 1987, he was a flight nurse for Flight For Life. Prior to 1980, he worked as an ICU nurse at St. Anthony Central Hospital and Lincoln General Hospital (1976 -1979) in Lincoln, Neb.

Ray has been actively involved with the trauma system in Colorado since its inception in 1997. He held a governor-appointed position on the State Trauma Advisory Council from 2003 -2006, and the State Emergency Medical and Trauma Services Advisory Council from 2008 - 2011. He served as the vice chair of the council from 2010 - 2011. Currently, Ray is on the development committee of the Trauma Center Association of America, and he has been a trauma center site reviewer for the department since 2002.

Ray received his Bachelor of Science in Nursing from the University of Nebraska in 1979 and his Masters of Science in Nursing from Regis University in Denver in 1992.

James M. Cusick, MD, FACEP

Jim has 46 years of experience in EMS, from first aid, EMT, mobile intensive care unit paramedic, to emergency physician (28 yrs). Dr. "C" was recently awarded the Colorado American College of Emergency Physicians Chapter "*Meritorious Service Award 2013*." He is currently an active, fulltime emergency physician in a high acuity, rural, emergency critical access hospital in southwestern Colorado. He was named the *2010 "Physician of the Year"* for Excellence in EMS as awarded by the Emergency Medical Services Association of Colorado and the Emergency Medical and Trauma Services Section. In January 2009, he became the Worldwide Clinical Medical Director for Vidacare Corporation (EZ-IO; 2009-2011).

Dr. Cusick was the EMS medical director for Summit County Ambulance Service in Frisco, Colo., (2007-2010). He returned in 2007 to the part-time faculty at Denver Health Medical Center, an urban, Level I Trauma Center in downtown Denver and the home of the Denver Affiliated Residency in Emergency Medicine. He is the past National Medical Director and vice-president of Medical Affairs for American Medical Response (AMR), the largest private ambulance company in America (2005-2008); he served as the EMS medical director for the Denver Operation of AMR for 14 years. He served as an emergency physician at Exempla Saint Joseph Hospital in Denver (1986-2006). He is the past director of EMS/Ambulance Utilization for the Kaiser-Rocky Mountain Region.

Dr. Cusick has been a member of the American College of Emergency Physicians since 1984. He is board certified in Emergency Medicine and is a Fellow of the College; he was a member of the National EMS Committee (2006-2010) and a past member of the College Council Steering Committee (2007 and 2009). He is a member of the EMS/Critical Care Regionalization and Sections Task Force. Dr. Cusick is a member of the Board of Trustees for the Emergency Medicine Foundation and the National Emergency Medicine Political Action Committee. He is the American College of Emergency Physicians EMS Liaison to the American Ambulance Association and liaison to the Board of the Commission on Accreditation of Ambulance Services; he has been a physician reviewer for the Commission on Accreditation of Ambulance Services since 2004. He is an active member of the National Association of EMS Physicians and past chair of their Communications Committee (2009-2011).

Karl B. Gills, LFACHE

Karl Gills is a retired hospital executive, most recently serving as Chief Executive Officer of Yampa Valley Medical Center in Steamboat Springs, Colo. (2000-2012). He received a Bachelor of Science in Business Administration from the University of Denver and Masters in Health Administration from The Ohio State University. He has served in various administrative capacities at Iowa Methodist Medical Center in Des Moines, Iowa, (1978-1986) and North Colorado Medical Center in Greeley, Colo., (1986-2000) before moving to Steamboat Springs.

Karl has served on a national boards related to emergency air medical services, the EMS Council and State Emergency Medical and Trauma Services Advisory Council in Colo., the Board of Directors of the Colorado Hospital Association and other community non-profit organizations.

Rick Hartley, Paramedic

Rick Hartley accepted the position of EMS Director for the Southeast Colorado Hospital District's Ambulance Service in 1992 and has functioned in that capacity for the last 21 years. His EMS career started in 1984 when he completed his EMT-Basic training and became a volunteer for the ambulance service. Rick soon completed his EMT-Intermediate certification and is now a Nationally Registered and State of Colorado certified EMT-Paramedic. He is Baca County's executive representative on the Southeastern Colorado Regional Emergency Medical and Trauma Advisory Council where he served as the chairperson for several years, then stepped down two years ago to vice-chair. In 1996, working together with two other providers, Rick was instrumental in starting the regional advisory council that functions in Southeastern Colorado. Mr. Hartley is a member of the Lamar Community College EMS Advisory Council and is an EMS Instructor at all levels of EMS Prehospital Medicine and teaches CPR, ACLS, First Aid and Farmedic classes. Rick also served on the Colorado State EMS Advisory Council until the council was changed to the State Emergency Medical and Trauma Services Advisory Council. In 2002, Rick received the C.J. Shanaberger Award for life long contribution to the Colorado EMS Community and for his many years of service.

In addition to his EMS career, Mr. Hartley owned and operated a successful construction business in Baca County for 18 years, served on the Board of Directors for the Southeast Colorado Hospital District from 1989 to 1992, was State President of the Colorado Track and Field Coaches Association for two years, and has coached the Springfield high school boys track team for 17 years. Rick and his wife Pam have been married for 37 years and were blessed with four wonderful

children. When his busy schedule allows, he enjoys many of the recreational activities that living in Colorado affords him, and he likes to spend as much time as possible with his family.

Tom Soos, Paramedic

Tom has served as the emergency management coordinator for Moffat County since 2008. In this role, Tom is responsible for advising the Board of County Commissioners on matters related to EMS, emergency management and public health issues (animal and human) in the county. Through a collaborative stakeholder process, Tom ensures that emergency plans are updated as needed and that MCI exercises are conducted annually.

Tom was the director of EMS for The Memorial Hospital in Craig, Colo., from 2002-2008, where he was responsible for the day-to-day operations and management for the hospital- based EMS service. During his time at the facility, he was instrumental in upgrading the service to providing ALS level of care on all calls. He also worked to develop a high profile EMS presence at public events, to ensure public awareness of the importance of an EMS presence at public events in the county.

Tom was an EMS program instructor at Colorado Northwest Community College from 2004 to 2011 where he taught basic EMT classes, IV certification and refresher classes. Prior to moving to Colorado, Tom worked at Rutgers, The State University of New Jersey, in the Department of Fire and Emergency Services for 19 years. While there, he managed a combined paid and volunteer department. He established an in-house billing system that achieved a 68 percent collection rate. Tom routinely commanded EMS operations at sporting events which drew over 40,000 spectators, and provided oversight of EMS coverage for high profile events such as presidential visits and World Cup events.

Margaret Mohan, RN, BSN

Margaret Mohan is the trauma system specialist for the EMS and Trauma Services Branch at the Colorado Department of Public Health and Environment. In this role, she provides technical assistance to trauma facilities throughout the state on maintaining and improving the trauma program at individual facilities and the system of trauma care throughout the state.

Prior to coming to the department, Margaret worked at the Department of Health Care Policy and Financing, which is the Medicaid agency for the state of Colorado. During her ten years there, she supervised the unit that conducted provider payment audits for overpayments, fraud and abuse, as well as investigated quality of care issues. Margaret also managed the acute care benefits section where she worked to define the amount, scope and duration of the Medicaid services provided. Margaret is a registered nurse who has worked at a Level I trauma center in a variety of roles including staff nurse on the surgical unit, house supervisor and nurse manager of the float pool, forensic, surgical and orthopedic units.