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BOONE COUNTY NEBRASKA

EMERGENCY MEDICAL SERVICES SYSTEM ASSESSMENT

September 2009

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Frequently Used Acronyms

The Emergency Medical Services field makes frequent use of acronyms that may not be familiar to many persons. To reduce confusion for the purposes of this report the following acronyms are defined as:

ALS	Advanced Life Support (i.e. paramedic level service)
AFD	Albion Municipal Fire Department
ARS	Albion Rescue Squad
BCC	Boone County Commissioners
BLS	Basic Life Support (i.e. EMT level service)
BCHC	Boone County Health Center
BCRS	Boone County Rescue Squad
CAH	Critical Access Hospital
CAAS	Commission on the Accreditation of Ambulance Services
CAMTS	Commission on the Accreditation of Medical Transport Systems
CRRS	Cedar Rapids Rescue Squad
DHHS	Nebraska Department of Health and Human Services
DPAT	Nebraska Department of Property Assessment & Taxation
EMD	Emergency Medical Dispatch (pre-arrival instructions for 911 calls)
EMS	Emergency Medical Services
EMT	Emergency Medical Technician certified by DHHS
EMT-AD	Emergency Medical Technician with automated defibrillator skills
EMT-B	EMT certified by DHHS at the Basic level (BLS)
EMT-I	EMT certified by DHHS at the Intermediate level (ILS)
EMT-P	Paramedic certified by DHHS (ALS)
eNARSIS	electronic NE Ambulance and Rescue Service Information System
ERS	Elgin Rescue Squad
FRS	Fullerton Rescue Squad
LRS	Lindsay Rescue Squad
NCEMSC	North Central EMS Cooperative
NGRS	Newman Grove Rescue Squad
NRS	Nebraska Revised Statutes
PIER	Public Information, Education, and Relations
PRS	Petersburg Rescue Squad
PSAP	Public Safety Answering Point
RFD	Rural Fire Department surrounding Albion
SERS	Saint Edwards Rescue Squad
SNF	Skilled Nursing Facility
STS	SafeTech Solutions, LLP

Executive Summary

Emergency medical services (EMS) in Boone County Nebraska are at an important crossroad. Like many rural counties in the United States, Boone County is experiencing a number of changes that are impacting the delivery of EMS. Changing demographics, changing socio-economic conditions, changing volunteerism, altered emergency medical call type and volume.

The SafeTech Solutions assessment team is pleased to submit our observations and collective recommendations for the Boone County Commissioners (BCC). Our evaluation of the Boone County EMS System has been an interactive and dynamic process concluding with the submission of this final report to the Boone County Commissioners, Boone County Health Center administration, Nebraska Emergency Medical Services Board, Nebraska Department of Health & Human Services (DHHS) Office of Rural Health, and the DHHS Emergency Medical Services EMS /Trauma Program.

Although a number of ambulance and first responder units make up the Boone County area EMS System, the scope of our assessment as directed by the BCC was limited to change recommendations for Boone County Rescue Squad (BCRS) and also to document the Boone County EMS system.

This project was funded by the Health Resources and Services Administration, federal Office of Rural Health Policy, and Medicare Rural Hospital Flexibility Grant program funds, administered by the Nebraska DHHS EMS/Trauma Program.

Boone County Rescue Squad (BCRS)

The current opportunity for BCRS is one of planning for high quality sustainable transfer services. This will involve change and perhaps challenge community traditions. It will demand focusing on the goal of making decisions that are in the best interest of those who need the vital transfer care between Boone County Health Center (BCHC) and secondary and tertiary hospitals. It is with this goal in mind that the following recommendations are offered:

1) Ensure sustainable administration of BCRS.

> Reliable and trusted ambulance services are vital to the health and safety of Boone County citizens, and, at this time, BCHC is in the best position to provide the critical leadership, management, supervision and clinical oversight of BCRS. The administration and operational oversight of BCRS should be transitioned from the BCC to BCHC as soon as reasonably possible.

2) Ensure available manpower for critical interfacility transfers

> One and perhaps two full time paramedics should be employed to assure that appropriate personnel are available for man both local interfacility transfers, and those long distance transfers to regional tertiary facilities.

Boone County and City of Albion Demographics

Albion is the county seat of Boone County and has a population of 1,594 and there are approximately 4,000 living in the rest of the county. The economic development agency promotes the county's healthcare in their marketing materials, and finds that it is a major driver in keeping residents in the county. The younger generation seems very comfortable with the hospital, and BCHC has made major service and facilities improvements in the last twenty years, including a current major construction project. Residents tend to stay in the county to receive healthcare services rather than travelling to larger facilities.

The Boone County EMS System.

Boone County:

The Boone County communities of Petersburg, Cedar Rapids, St Edwards, and Albion all have rescue squads that are part of city fire departments. The Boone County Commissioners subsidize each fire department with $1-2,000 annually and each rescue squad bills for services provided. The primary ambulance coordinator/driver serves as the countywide rescue squad coordinator, a position previously held by a former county Emergency Manager. Boone County helped fund paramedic school for the one paramedic that resides and works in the county.

The County has approximately 50 employees with five buildings in the Road Department located in the same towns as the fire departments.

Albion Rescue Squad (ARS)

The Albion Fire Department (AFD) operates the Albion Rescue Squad (ARS). ARS responds to all 9-1-1 calls with its two ambulances. Unlike many other volunteer rescue squads in Nebraska, ARS finds daytime hours are easier to staff and uses a three person crew. Sometimes a first responder is with two EMTs and other times three EMTs make up the crew. Dr. Kusak serves as the unpaid Medical Director for ARS. The ARS medical crews were reported to be well trained and respected by area squads.

ARS members expressed disinterest in assuming responsibility for the inter facility runs from local medical facilities to Omaha or Lincoln. They also expressed that perhaps non- emergent local nursing home transfers to BCHC could be avoided allowing ARS to focus on 911 emergency medical calls. 20% of the calls are to the Wolf Memorial Good Samaritan Center skilled nursing facility or the Samaritan Estates assisted living facility.

Staff recruitment is a growing concern for AFD whose membership is slowly declining. Fifteen years ago, AFD had waiting list of citizens interested in volunteering for fire and rescue squads but now have nine unfilled positions.

About 35 firefighters respond to the approximately 20 annual fire calls. In contrast, a core group of 16 EMTs respond to 120 annual rescue calls. The AFD is an integrated department, as evidence by the fact that all ARS members are also firefighters and have been issued bunker gear.

Members of the department reported the number of hours required, by Central Community College in Columbus, to complete an EMT class makes it tough to recruit new members. The College courses are 180 hours, 70 hours more than the state EMS office requires. The last reported EMT class held locally was 7 or 8 years ago.

Members also voiced concern over changes in the revised continuing education system a few years ago, dropping from a three year certification period down to a two year period; however, this change was mitigated by the state changing recertification hour requirements – dropping them proportionately from 30 to 20 hours.

The AFD has transitioned to high band radio and is dispatched by the sheriff's office. The procedure used by the sheriff's office begins with a first page, followed by a second page after one minute, and a third page two minutes later. AFD staff report that the short time in between page-outs results in three pages often being issued prior to the ambulance leaving the station. All firemen and EMTs have pagers but only some have two-way radios and written mutual aid agreements are in place between all the fire and rescue units operating in the county.

ARS uses an electronic patient data collection system and contracts with an Omaha company called EMS Billing to perform billing services. Revenue is credited to the ARS account of the city budget although the fire department and rescue squad budgets are combined. The County Commissioners have subsidized ARS with $75 per month while the City budgets approximately $36,000 for AFD annually. The BCHC doesn't provide space for the EMS personnel to complete their state ambulance report forms when dropping off a patient, although that may be rectified with the current hospital construction project.

Cedar Rapids Rescue Squad (CRRS)

Cedar Rapids Rescue Squad (CRRS) has seven EMTs performing at the EMT-AD level and one first responder. There are three recruits who have finished EMS training in Primrose. The CRRS response area is approximately a 10 mile radius from the center of town and averages 37 calls per year in a ten year old ambulance.

The CRRS members average 50 years of age and are most concerned with recruitment. Dr. Troyer, from St Edward, is the CRRS medical director and he provides medical training for the rescue squad three to five times per year although he is not compensated for this service. Two CRRS EMTs are nurses in Dr. Troyer's clinic.

CRRS has approximately $70,000 in Certificates of Deposit for equipment replacement. CRRS generates revenue from patient billing and subsidies from the towns of Cedar Rapids and Primrose, the Cedar Rapids and Primrose Fire Districts, and Boone County.

CRRS members expressed having a solid working relationship with the Sheriff's Department who also houses their two-way radio repeater.

CRRS participates in quarterly fire department mutual aid meetings of the Mid Nebraska Mutual Aid association along with departments from several counties and they do an annual medical disaster training drill.

Fullerton Ambulance (FA)

Fullerton Ambulance (FA) is located in neighboring Nance County. FA has 28 members, 25 functioning at the EMT-AD level and three first responders that are usually staffed with two EMTs and a driver. FA used to use an on-call schedule but now just page everyone for every call.

FA covers a population of about 1,500 and averages 175 rescue squad calls, the majority of which are medical rather than trauma in nature; in contrast the Fullerton fire department responded to approximately 40 fire calls in 2008. In Fullerton the fire department and rescue squad are distinct separate agencies.

The city of Fullerton receives $250 per month from the Nance County Commissioners for FA. FA also covers the Belgrade Fire District north of Fullerton although they receive no funding from them, nor do they receive any contributions from the Fullerton Rural Fire Board.

Patients are transported to the hospital of their choice, usually in Albion, Central City, or Genoa. FA members prefer to use cell phones to communicate with the hospitals but also have the capability to contact them by radio.

Fullerton has two ambulances, one is three years old and one is twelve. There is a nursing home and two assisted living centers in Fullerton. Midwest Medical ambulance service provides transfers from the nursing home and assisted living facilities. Both Albion and Central City operate medical clinics in Fullerton which are sometimes staffed by physicians and sometimes by physician assistants.

EMS Billing is also contracted to bill for FA with the funds deposited into a city account. FA is part of a regional mutual aid group but no meetings are conducted by the group. Dr. Kusak is an unpaid medical director for FA although he visits them at least once per year and an Albion paramedic has contact with them about every other month in a surrogate role to Dr. Kusak.

Elgin Rescue Squad (ERS)

Elgin Rescue Squad (ERS) is located in Antelope County although they transport most patients to Albion, Neligh, and less frequently to Norfolk. Two thirds of the patients go to Albion because they opened a clinic in Elgin. The transport destination decision is based on patient preference unless the patient is in critical condition.

The Neligh hospital doesn't always have a doctor in the ER. ERS indicated that BCHC has a good emergency room staff, has good communications with them enroute and are there to meet them for assistance upon arrival.

ERS responds to 50-70 rescue calls a year. Elgin has low income housing in town but there is no SNF or assisted living housing even though the population is mostly elderly. There is a 15 minute response time for the Life Net helicopter when they are needed at a scene, which occurs three to four times a year.

ERS responds with an EMT, a first responder, and a firefighter that serves as driver. ERS is dispatched by the sheriff's office through the use of pagers and a fire phone. The Elgin firefighters have portable radios but the rescue squad members don't; some also expressed concern about the reliability of the pagers. Although ERS is included in the city fire department's budget it is operated separately and bills for service. There is a yearly election by the squad members of a rescue captain.

St. Edwards Rescue Squad (SERS)

The St. Edwards Rescue Squad (SERS) is located in Boone County, has 17 EMT-AD's, and usually responds with three members. SERS had 56 calls in 2008, with 35-40% coming from a skilled nursing home in town. They have handled 17 calls to date in 2009 at the time of the on site survey.

The firefighters have portable radios, but they are rarely carried because members do not like their size. SERS members choose to use a fire phone calling system as the primary dispatch mechanism although they have had pagers for four years because they report concerns with the reliability of the paging system. Boone County tests pagers only once a week, while the surrounding counties test daily.

SERS finds it is easier to get First Responder volunteers because of the shorter time spent in training compared to EMT training. SERS members report the squad is well equipped and funded from a football pool, golf tournament, donations, and a gift trust. Neither Boone County nor the rural fire district subsidizes SERS but it does receive funds from a city sales tax. As an unpaid Medical Director, Dr Troyer is in contact with SERS on a monthly basis.

SERS reports that the Boone County Health Center is quick to answer radio calls, always has a physician on duty, and someone always meets them in the garage. They expressed appreciation for the relationship they have with Scott Shriver.

Newman Grove Rescue Squad (NGRS)

The Newman Grove fire district is located just inside Madison County but covers parts of three counties with a volunteer staff. The NGRS is part of the fire department for budget purposes but is operated separately with some members strictly on the rescue squad side. There are co-captains elected by the 13 members, three of which are first responders and 10 are EMT-AD. The fire department provides drivers and there are usually two EMTS on every call. They respond to 90-100 requests for service per year.

Ninety percent of the patients are transported to BCHC. Members report the staff at the BCHC is very receptive when they transport there, someone is always in the ambulance garage to meet them. NGRS indicates that the BCHC staff knows their local capabilities and will immediately transfer patients that are in need of a tertiary facility. The medical clinic in Newman Grove is satellite clinic of Albion.

NGRS uses four different radio systems; "low band", "high band", 400 MHz in county, and 800 MHz in Norfolk. They report that with radio transitions occurring there are times the BCHC does not answer the low band radio. There is no centralized coordination of ambulance and hospital frequencies, a concern on some ambulance transports. They report they will use Life Net Air Medical Service as necessary for rapid transport.

Petersburg Rescue Squad (PRS)

Petersburg Rescue Squad (PRS) is located in Boone County responds with 13 EMT-AD members and five First Responders and firefighter drivers. They have about 25-30 runs per year, almost all of which are transported to BCHC. The rescue squad is part of the fire department, but is operated separately. Dr. Kusak is their unpaid medical director and he is there generally once per year check off airway and defibrillation skills, to do run review, provide education, and sign any protocol revisions.

The county dispatch center pages PRS, which operates and staffs two ambulances when needed. EMS Billing does billing for PRS. They use both radio and cell phones to contact the hospital enroute. PRS receives $50 per month from the rural fire board. They are proactive about recruitment to their service, including an approach to seek out and target good people in town and keep after them until they eventually decide to volunteer. Their population base is limited, about 300-400 people in the service area.

Lindsay Volunteer Fire and Rescue Squad (LRS)

The LRS is located in Platte County directly east of Albion and averages three medical requests per month served by 21 volunteers but would like to have 25. The majority of patients are transported to Albion but they also go to Norfolk and Columbus. Sixteen of the staff are EMTs, two are first responders, and three are not certified. They use "low band" radios and hope that the BCHC retains this radio frequency until all rescue squads in their service area have made a transition to something else.

Recertification is an issue for LRS and retention will be a problem for them in the next two to three years because of age of the current staff. The population of their service area is only 220.

Boone County Sheriff

The Boone County Sheriff's office has four deputies with automated external defibrillators in their cruisers on which they certify competence every two years. In addition, the deputies are first responder certified. There are seven dispatchers who are all certified in first aid and CPR. The dispatchers receive initial and ongoing medical dispatch training every two years in Grand Island at the state patrol academy.

When the Boone County Rescue Squad is needed for an inter-facility transfer, the hospital calls the sheriff's dispatch center which in turn pages the ambulance coordinator. Dispatch Center records run times for all the county rescue squads and all phone lines and radios are recorded.

All of the emergency services are dispatched on a single frequency on "high band", but each squad also has its own channel to coordinate locally. Most of the emergency responders have pagers and many have portable radios. St. Edward's fire department is the last remaining unit in the county to still be on a fire phone system. The fire phone system poses challenges for the dispatch center – they currently must have a process for one department that is inconsistent with the rest of the standard operating procedures. When the fire phone is in use one or more of the phones on the circuit have answering machines which interrupt conversation and that poses a problem for the rest of the people to understand what is being said by the dispatcher.

Boone County has an enhanced 911 system and they do receive some location information from cellular 9-1-1 calls.

Boone County Rescue Squad (BCRS)

BCRS is owned and operated by the County Commissioners. The ambulance vehicle that BCRS owns is stored in the AFD's garage with Albion fire apparatus and the ARS ambulances. BCRS completes about 12-15 trips per month with an unknown number of calls that another squad covers for them due to

unavailability.

There is a contracted driver and patient care is delivered either EMTs, nurses, or a paramedic/LPN that works at the clinic located at the hospital.

The physicians report being generally dissatisfied with the amount of time it takes to get a patient transferred out of the emergency room by ground when the BCRS is not available. Transfers typically go to Omaha and Lincoln taking the crew out for about six hours making it more difficult to staff with nurses. Most transfers occur during the daytime making it more difficult to get substitute drivers because employers are less likely to let staff leave work, especially for a six hour transfer. The current driver works for an implement dealer who is very community-minded and provides strong support for the needs of out-of-town medical transports.

Nurses or the paramedic are used for ALS transfers, with two ALS caregivers in the back of the ambulance. There are approximately six nurses that will do transfers but only three regularly do. Staffing is the core issue facing the county.

Many people we interviewed would like to see a joint venture between county and hospital in operating the BCRS. It was reported to us that there have been several meetings over three to four years with hospital staff that have included discussions about the hospital taking over the operation of the rescue squad, but no change has occurred. County Commissioners we interviewed are supportive of the ambulance service and would consider subsidizing a hospital based rescue squad. The Commissioners would like to see a Rescue Squad that is close to break even on finances but they aren't sure how to deal with increased call volumes under their present system of operation.

BCRS uses an electronic patient data collection system and a hospital secretary does billing for BCRS, which is operating in the black. The county replaces the ambulance every two to three years.

There is room for growth in volume as BCRS only completes about 75% of the interfacility calls with the balance completed by Midwest Medical. In a typical month with 15 transfers, approximately two will go by air ambulance, four by Midwest Medical and nine by BCRS. Year to date in 2009 there have been 94 transfers, 76 completed by BCRS or Midwest Medical by ground.

Midwest Medical is always used when there is a potential patient need for intubation as the BCHC nurses are not allowed to intubate. The county commissioners occasionally call the hospital when Midwest Medical transports patients inquiring why the county's ambulance was not used.

Other than the physicians that are displeased with the timeliness of transfers, the hospital managers and administrators feel the transfer system is working. The county's ambulance began operation about ten years ago and the nurses have staffed it primarily out of courtesy to the patients.

Other opportunities for growth would include providing non-emergency service to nursing homes and assisted living facilities in the county and to provide emergency paramedic intercept with the rescue squads transporting patients into BCHC.

The county provides the driver/coordinator with a monthly stipend and a stipend per call. The coordinator finds his own coverage for when he is out of town. Nurses that do transfers are compensated separately by the county from their regular employment at the hospital.

Stipends paid by the county to the nurses are viewed as a major driver in their willingness to staff. A call list is used, with the hospital ward clerk having responsibility to arrange nursing staffing when a transfer is needed. The hospital staff reports some difficulty when meeting the requirements of the

Emergency Medical Treatment and Active Labor Act, as it is not always possible to secure a specialist and bed at the receiving hospitals in a timely manner, which can result in a delayed transport. The helicopter is the primary source of transport for unstable patients and pediatric specialty care.

Trauma patients are transported primarily to Bryan LGH hospital in Lincoln, with fewer going to the two Omaha based trauma centers. BCHC has a contract with Bryan LGH which requires them to accept transfer patients, however BCHC staff report that it can take up to an hour to actually secure Bryan's agreement to accept and to provide a nursing report. The delays in gaining acceptance from the receiving facility in Lincoln may not be always known by the referring physician.

BOONE COUNTY HEALTH CENTER (BCHC)

The BCHC is growing and expanding its marketing area and has five outreach clinics. BCHC is owned by Boone County and is governed by seven hospital trustees that are appointed by the Boone County Commissioners to six year terms, each can serve two consecutive terms. The hospital trustees hire the hospital's chief executive officer. The hospital is always staffed with four nurses, one assigned to the emergency room, and three covering OB and general beds.

BCHC is currently undergoing an expansion which affects the emergency room. The new addition to the facility will better serve patients as it will provide for private patient rooms, a hospice center, birthing rooms, and conversion of the basement to storage.

The rescue squads are unhappy that the construction will change the ambulance garage – from a drive through to a garage that will require the ambulance to either back in or back out. The hospital staff and trustees met with all the squads about the construction and did make some changes to the garage construction with the architect, but space limitations do not allow for construction of a replacement garage with continued drive through ability.

Hospital staff reports that they are trying to transition the emergency rescue squads from using cell phones to provide patient reports to the radio system, due primarily to cell phone signal unavailability in the parts of the county with hills. The hospital staff believes that all the rescue squads have good response times but they struggle with managing "frequent flyers" (patients that call 9-1-1 a lot). Hospital staff believes that helicopter scene responses are under-utilized.

There are seven physicians practicing at the clinic with assistance from three Physician Assistants. One of the clinic's LPNs is a paramedic and assists in providing medical direction services to some of the area rescue squads as a surrogate of Dr. Kusak in addition to being an ALS attendant on the BCRS.

We received significant conflicting information in our onsite interviews regarding the state of the transfer service operated by BCRS. Although the non-physician hospital staff expressed feelings that the transfer system is working, the physicians are concerned with wait times, and the physicians are a major driver of why this report was requested by the county.

We received information from hospital staff that the impression they have is that the hospital board does not want the rescue squad to be operated by the hospital, yet hospital board members told us the topic had never formally been on their agenda.

- We were told by hospital staff that the state of Nebraska health agency was concerned about the proliferation of paramedics working inside hospitals and was issuing correction orders because the paramedics were performing outside their scope of practice. But when we

interviewed the specific state staff investigator who was described as "cracking down" on such practice, we were told the opposite is true; that paramedics are performing within their scope of practice, there is a substantial increase in hospitals using paramedics and from the state's perspective, the practice of using paramedics as hospital employees is encouraged.

- We also received information from BCHC that some other critical access hospitals in Nebraska that have started or assumed control of a rescue squad are finding them as major drains on cash flow and profitability.
    - In detailed follow up, we received information from those specific facilities named as references for this information. One administrator reported "The model we have used to establish our current transfer ambulance service, that we call Pro-Med, has worked very well. We have wanted to provide a transfer service staffed with paramedics for some time. We could never have justified the cost of this service without working with the other hospitals in our geographic area and providing transfer service for them as well. We are also able to offset part of the cost of this service by utilizing the paramedics in our emergency department when they are not out on runs. This is a cost based reimbursement area so it is to our advantage to transfer as much cost as possible to the ED."
    - The other administrator provided an advantage as "our ambulance program has been very successful, greatly improving the skill, service and professionalism our patients receive when being transported to tertiary facilities, while improving our local 9-1-1 responses through shared calls and demonstrating better techniques and approaches to our local volunteer squad members. Further, having paramedics in the hospital has been great for our hazmat and disaster planning, trauma program creation, and staff ACLS training. The service has become self-sustaining financially and a vital part of our emergency response capabilities." He also reported a growing pain as "… integrating paramedics and EMTs into our hospital culture. Initially, it was hard for some nursing staff to accept the natural consequences of the longer shifts and hot/cold work patterns of our medics. Likewise, while our medics were great in true emergencies in the ER (even having doctors ask them to take the lead), they had not been trained to "read the minds" of our physicians, as experienced nurses seem able when assisting in more standard cases."

Other CAHs in Nebraska have used the cost-based reimbursement provisions of the program to finance the cost of employing paramedics by using them to perform hospital functions between ambulance calls. The usage of paramedics in this way provides CAH reimbursement when the staff is working in house and then provides ambulance fee schedule reimbursement when they are performing ambulance duties. The hospital staff expressed some concerns they would have in operating the service to include where to house the ambulance, how to staff it, and that the current hospital staff would not be accepting to having paramedics working inside the facility, while also acknowledging that the current nursing staff is getting burned out from performing transfers.

Recommendations for Operation of the BCRS

The current BCRS seems to be meeting most of the patient needs today. The physicians would like interfacility transfers to occur more quickly. Part of the problem is in always finding an available off duty nurse and part is a problem in obtaining acceptance from a physician/hospital in Lincoln.

A primary concern of the Commissioners should be that the pool of nurses willing to provide transfer service is declining and is likely resulting in the complaints of the physicians regarding timely transfer.

Nebraska stands out among the states in the number of small hospitals that have successfully integrated paramedics into their systems, mostly in response to growing issues of timely patient transfers. Equally impressive is the number of different models that hospitals in the state have used in this transition.

The models run the gamut from contracting paramedics from an established provider, to hiring paramedics outright, to forming joint ventures that serve not only the needs of two hospitals that collaborated to provide the service but in also using the service to aid neighboring and distant facilities.

Examples of Nebraska CAHs and how they use paramedics:

City	Facility	Model
Crete	Crete Area Medical Center	Crete Area Medical Center utilizes paramedics in the emergency department. The Center has an agreement with the City of Crete's ambulance service to provide a paramedic on the city ambulance when the ambulance services is doing inter-facility patient transfers from the Crete Area Medical Center to other facilities. Paramedics are on call 24 hours with one paramedic working 3 p.m. to 11 p.m. in the emergency department. This cooperative agreement between the hospital and ambulance service began September 1, 2009.
Hebron	Thayer County Health Services	Thayer County Health Services utilizes a paramedic in the emergency department. The hospital has a cooperative agreement with Thayer County Ambulance Service to provide a paramedic for Inter-facility patient transfers from Thayer County Health Services to other facilities. This cooperative agreement and utilization of the paramedic is just over one year old.
Oshkosh	Garden County Health Services	Garden County Health Services utilizes a paramedic in the emergency department. This paramedic also manages and staffs the Garden County ambulance service which is based out of the hospital. The paramedic provides 911 and inter-facility patient transport. This is a county hospital and ambulance service. The hospital manages the ambulance service for the county. This agreement has been in place for over five years

Kimball	Kimball Health Services	Kimball Health Services utilizes a paramedic in its emergency department. It provides a paramedic for advanced life support patient inter-facility transport. The hospital has a cooperative agreement with Kimball County Ambulance Service to provide the paramedic for the ambulance service. Kimball Health Services has a unique agreement with Kimball County Ambulance Service. The hospital has an advanced life support licenses while the county has a basic life support licenses. Since the hospital is licensed as an advanced life support service it can provide paramedic services on the county ambulance. This agreement has been in place for over five years
Holdrege	Phelps Memorial Health Center	Phelps Memorial Health Center utilizes paramedics in its emergency department for over five years. Phelps Memorial Health Center has a licensed advanced life support ambulance service that does patient inter-facility transfers and some 911 tiering with rural ambulance services.
Sidney	Memorial Health Center	Memorial Health Center utilizes paramedics in its emergency department. The hospital is in partnership with the city of Sidney, Cheyenne County and Region West Medical Center in Scottsbluff to provide inter-facility patient transport and 911 ambulance service for the city of Sidney and Cheyenne County. This partnership has been in effect for over five years.
Auburn & Falls City	Nemaha County Hospital and Community Medical Center, Inc	These two hospitals have partnered to form an ambulance service called Pro-Med over five-years-ago. They each utilize paramedics in the emergency departments and have ambulances based at each hospital. They provide inter-facility patient transport for their own facility and four other hospitals in the region. They also provide 911 tiering for some rural ambulance service in the counties the two hospitals are located.
Kearney	Good Samaritan Health Systems	Good Samaritan Health Systems is not a critical access hospital but has utilized paramedics in its hospital for over 10-years. It has a licensed ambulance service that provides 911 patient transports for the City of Kearney and tiering for rural ambulance services in five county areas. The ambulance service also provides inter-facility transport for the hospital and a number of critical access hospitals in the area. The hospital gets no subsidy from the City of Kearney nor Buffalo County to provide 911 patient transports.
Ord	Valley County Health System	Valley County Health System is another CAH in Nebraska that utilizes paramedics in the hospital and has a partnership with Valley County Ambulance Service. The paramedics do inter-facility transfers plus some tiering with volunteer services in the hospital

		service area. This partnership is about five-years-old.
Various		Currently the Nebraska EMS/Trauma Program is working with three critical access hospitals that are investigating the feasibility of utilizing paramedics in their hospitals and partnering with ambulance services. One hospital will have its advanced life support license September 18 if the Nebraska Emergency Medical Services Board approves the application.

As a general rule nationally, Rescue Squad members volunteer for service primarily to meet the local emergency needs of the public. Also performing out-of-town transfer services is a drain on their resources and the time commitment of doing so eventually leads to a community where employers embrace employees leaving work to do emergency service to not allowing the employees to leave work at all because of the time involved in performing the transfer service.

We find the model in Boone County rather unique. The model is experiencing growing pains, along with the hospital, as the demand for service is outpacing the good will of the nurses in continuing to agree to provide the service.

As the owner/operator of both the BCRS and the BCHC, the county commissioners and hospital trustees need to exert leadership to assure the provision of services is maintained in the future.

Based on our experience watching this same scenario play out all over the country and especially in other parts of Nebraska, *the BCRS should become a functional unit of BCHC*, using the cost reimbursement model afforded to BCHC by the Critical Access Hospital program to integrate paramedics into the hospital operations in order to cover the cost of the service.

The BCC should engage the trustees of BCHC to form a committee to examine the ways other CAHs have successfully, financially and operationally, integrated paramedics into the health care system. A major goal of the committee should be to separate fact from fiction while considering various implementation options for BCHC. As options are identified by the committee, the committee should seek financial resources and a list of consultants experienced in these operations from the EMS/Trauma Program, to assist the committee with specific financial analysis of one or more options. The BCC should require the trustees to present their findings within six months along with recommendations to strengthen BCRS, to assure the timely access to transfer service, and to better integrate BCRS into BCHC operations.

General Recommendation for County Rescue Squads

Each rescue squad should fund a part-time EMS physician medical director position to provide medical oversight. A standardized medical director's job description should be developed and implemented. The EMS medical director should develop a medical supervision plan. The medical director (and any surrogates) should complete both the Nebraska specific and the national medical director's course within 24 months of appointment. The medical director should receive basic awareness level training on e-NARSIS and develop enough competency with the system to run various reports. The medical director's contract should include conducting a skills competence evaluation at least annually.

The roles and expectations of medical directors should be defined in writing, and they should be compensated for providing the service. The EMS/Trauma Program at DHHS has or can obtain template or model contracts. The EMS medical director's written agreement with the EMS agency(s) should include the following responsibilities:

1. Approving the planned deployment of personnel resources.
2. Approving the manner in which licensed EMS personnel administer first aid or emergency medical attention without expectation of remuneration.
3. Documenting the review of the qualification, proficiencies, and all other EMS agency, hospital, and medical clinic affiliations of EMS personnel prior to credentialing the individual.
4. Documenting that the capabilities of licensed EMS personnel are maintained on an ongoing basis through education, skill proficiencies, and competency assessment.
5. Developing and implementing a program for continuous assessment and improvement of services by licensed EMS personnel under their supervision.
6. Reviewing and updating protocols, policies, and procedures at least every two (2) years.
7. Developing, implementing and overseeing a Medical Supervision Plan
8. Collaborating with other EMS medical directors, hospital supervising physicians, and medical clinic supervising physicians to ensure EMS agencies and licensed EMS personnel have protocols, standards of care and procedures that are consistent and compatible with one another.
9. Designating other physicians to supervise licensed EMS personnel in the temporary absence of the EMS medical director.

THE FOLLOWING INFORMATION IS PROVIDED AS A RESOURCE TO THE COUNTY COMMISSIONERS IN THE EVENT IT BECOMES NECESSARY IN THE FUTURE TO PLAN FOR A COUNTY OPERATED EMERGENCY RESCUE SQUAD.

Objectives for the Boone County EMS System

The report should be considered by the reader in context with the following five "hallmarks for ensuring high-performance emergency ambulance service" (*American Ambulance Association. Community Guide to Ensure High-Performance Emergency Ambulance Service. McLean, VA, 2004)*. These are:

Hallmark 1- *Hold your emergency ambulance service accountable*

Hallmark 2- *Establish an independent oversight mechanism*

Hallmark 3- *Account for all service costs*

Hallmark 4- *Require system features that ensure economic efficiency*

Hallmark 5- *Ensure long-term high performance*

Rural EMS Challenges in Nebraska

The *Rural and Frontier EMS Agenda for the Future* expresses the following vision for the future of EMS systems such as that found in Boone County:

> *"The rural/frontier emergency medical service (EMS) system of the future will assure a rapid response with basic and advanced levels of care as appropriate to each emergency, and will serve as a formal community resource for prevention, evaluation, care, triage, referral and advice. Its foundation will be a dynamic mix of volunteer and paid professionals at all levels, for and determined by its community."*

Fulfilling this vision requires the application of significant federal, state, and local resources as well as committed leadership at all levels to address such issues as:

- Ability to provide timely public access and deployment of resources to overcome distance and time barriers
- Adequacy of communications and other infrastructure
- Adequacy of data collection to support evaluation and research
- Adequate reimbursement and subsidization
- Appropriate methods of care and transportation in remote, low-volume settings
- Assurance of on-line and off-line medical oversight
- Effective quality improvement
- Staff recruitment and retention
- The role of the volunteer

Community Expectations

The presence of an ambulance service in town does not mean that the service is well-integrated into the community. Members of the community at large, and even its leaders, often do not understand the type and level of care that EMS provides. While citizens may expect an advanced level of care in their community because of film and television images of EMS, these expectations are rarely discussed. Tourism and the migration of residents from urban/suburban locales to rural/frontier areas may also import expectations of urban levels and type of EMS response.

The lack of an accurate understanding of what local EMS is providing, what other options exist, and what the community's cost would be for such options is a barrier to community integration of EMS. Many rural/frontier services have come to the brink of extinction, or have closed their doors, before a community discussion has taken place. In other communities, where such discussions have been held, communities have diverted scarce local tax dollars to preserve a more rapid, local advanced level of care. Regardless of outcome, the community's ability to understand, know options for, discuss, and choose the type and level of care it wishes to have and fund, a process of "informed self-determination", is important to the community integration of EMS.

Consumers may subconsciously expect advanced levels of EMS care, but have little idea of the level of care actually provided in their community. If there is a discrepancy between the two, they do not realize it nor seek an opportunity to participate in determining the level of care to be afforded. The concept of "informed self-determination" (citizens being informed of, and selecting among alternative levels and type of EMS response and their attached price tags) when implemented in several frontier towns in Maine resulted in selection of paid, paramedic staffing despite significant cost increases.

Where a single rural/frontier service might be unable to sustain basic or advanced levels of care, or assure certain business, operations or clinical functions, multiple services have demonstrated the ability to regionalize or otherwise cooperate to do so. Regionalizing has enabled them to share services such as alternative forms of advanced life support intercept, medical oversight, billing, quality improvement, and to seek financial support on a greater geographic basis such as a county or regional tax district.

Rural and frontier settings such as Boone County have limited and shrinking local health care resources (e.g., physician practices, hospitals); and these are separated from other sources of care by geographic and organizational barriers.

The Role of the Volunteer

EMS agencies that are dependent on volunteers for staffing and fund-raising for revenue have found advancement difficult. It is a challenge to assure the timely response of a basic life support ambulance in these settings. In the current era of preparing public safety for effective response to manage natural disasters and other events, the reality of rural/frontier EMS is that the infrastructure upon which to build such a response is itself in jeopardy.

Volunteer and other rural/frontier EMS providers often lack preparation with which to best serve certain community groups and members such as children, the elderly, minority groups,

migrant/immigrant workers, farm/ranch families, and persons with disabilities. Volunteer EMS agencies provide a vital community service and an opportunity for social membership, community service fulfillment and recognition, self-improvement and diversion for their members.

As rural and frontier populations age, the need for primary care involving cycles of episodic hospitalization increase. As a community's local health resources disappear, the more that community calls upon its EMS providers not only for traditional care and transportation to distant resources, but a range of informal care, evaluation, and advice as well. This expectation is sometimes managed in concert with the informal arrangement with local primary care providers and sometimes not, may extend beyond the generally basic life support scope of practice of local EMS.

The Rural ALS Paradox

The further a patient is from an emergency medicine facility, the more the patient benefits from the higher levels of local emergency medical intervention. As hospitals close and outpatient services are less available to offer sophisticated resuscitation care, dependence for such interventions falls upon local EMS.

Paradoxically, advanced life support (ALS) levels of EMS care are less likely to be available in the rural/frontier setting. This "rural ALS paradox" or "paramedicine paradox" results because comprehensive ALS services are difficult to establish and maintain in systems that experience insufficient call volume to meet high fixed costs and to enable advanced providers to be paid and retain their skills.

Providers in distant hospitals and referral centers often have limited connection with rural/frontier EMS providers who bring patients to them. Rural and frontier EMS providers are often volunteers who provide emergency medical care and transportation and then return to home, work, or another non-EMS setting. They know their patient's condition, environment and needs at the time of the emergency call, but this information and other opportunities for clinical feedback or consultation by distant hospital staff may be lost as time and distance from the call increase.

Air Medical Services

Air Medical services are vital in rural areas not only to whisk critically ill or injured patients from the scene or local hospital to specialty centers, but as the sole source of advanced life support in many areas. Many air medical services report back to local EMS on their patients and fill a feedback void that specialty centers may leave. Other air medical services represent an additional "step-removed" in patient information and feedback flow between local EMS providers and distant medical centers. This may become more pronounced as improved Medicare Air Medical service reimbursement brings more providers (sometimes in an uncoordinated/ unregulated fashion) into the EMS continuum. In addition, there may be increased requests to use air medical services for rural/frontier patient access to time-dependent specialty interventions (e.g., emergency cardiac catheterization and angioplasty for chest pain patients).

Leadership for Survival

Service chiefs of volunteer agencies find themselves in their positions for a number of good reasons, but not often because of their leadership and management experience or training. As a result, they

and their services vary greatly in their ability to successfully integrate paid compensation into traditionally volunteer work, paid staff into an organization with volunteers, and ALS personnel into a largely BLS environment. The more successful an agency is at accomplishing these types of integration, the more likely it will survive.

Boone County Challenges

Rural and frontier EMS providers are acutely aware of the challenges that they face. The Boone County Commissioners are also keenly aware of many of these challenges. This report is intended to arm the providers and commissioners with information about future directions in which their services and systems might best head to assure their survival, advancement and growth. It is also, more importantly, targeted to locally underscore the fragility of the entire Boone County EMS system; to identify the barriers to success and to propose solutions and highlight successful practices that they must consider in their spheres of influence.

Financial Challenges for Rural EMS in Nebraska

Under Medicare, reimbursement for EMS is tied to the transportation regardless of the need to provide emergency medical care. Managed Care Organizations (MCOs) have in some cases sought to limit access to EMS for their beneficiaries by narrowing the definition of "medical emergency" and the need for "emergency care" to an after-the-fact medical review determination, rather than a patient-centered decision as would be made by a "prudent layperson" at the time of the event. Some MCOs also have instructed patients to call their primary care physicians prior to dialing 911, which may unnecessarily delay needed emergency care.

Many services have experimented with subscription programs. Some have been abandoned when state insurance rules interpreted that they may constitute illegal insurance programs, when they require the billing of non-subscribing patients as well, or when Medicare requirements for documentation of fees became too complex for smaller services.

It is normal for a service in an isolated community to have a 30 percent to 50 percent "no transport" rate in a state that runs a 10 percent to 20 percent rate overall. It is also normal for members of such a service to provide episodes of informal evaluation, advice, and care that are never reflected in an EMS patient/run record. These anomalies preclude billing where only patient transports are considered by the payer as a reimbursable service.

Volunteers and Billing

Many volunteer services have considered patient billing as contrary to the community-service nature of their operation. Others simply have had no expertise or infrastructure for collecting fees or maintaining the necessary business functions. Others have charged nominal fees for their services that have no relationship to cost. The absence of any billing and nominal charges among many providers in a geographic region caused Medicare and other reimbursement mechanisms, which are based on an average of the billed charges for all providers in that region ("prevailing charges"), to be artificially low. Where patient billing has been pursued in rural and frontier areas, low reimbursement rates and the relatively low volume of calls have historically generated inadequate revenue to underwrite full-time preparedness.

Currently, EMS service providers that do bill have at least two major choices for doing so.

1. They may use a billing service which could charge $15 to over $30 per invoice processed; this is a $5,000 to $10,000 annual cost for a small service with no guarantee of return. Other billing services charge based on a percentage of amounts billed or actually received. Using a billing service still requires a service chief or other service representative to review patient/run records and other materials submitted to the billing service.
2. Using internal staff or county employees whose primary job is unrelated to EMS to perform billing functions.

A number of computer assisted billing services are available, with a range of accessibility considerations for rural/frontier providers. Some software packages are installed on a local computer while others are web-based applications. Computer assisted billing services may cost thousands or tens of thousands to install and implement and hundreds or thousands in annual maintenance fees, plus the cost of a computer with adequate processing power. At least one web-based service is now available which significantly reduces the initial cost to under a few thousand dollars and half that in subsequent years. It uses a Medicare form quality review function to reduce the frequency of denials.

Medicare as a Rural Payer

Recent efforts by the federal government to overhaul the Medicare reimbursement system for ambulances have removed some of these historical under-reimbursement influences[i], and have attempted to account for the greater per-call expense of providing care in rural and frontier areas. But this work stopped short of placing a cost figure on the provision of rural/frontier EMS care and reimbursing at that level.

Medicare now provides enhanced reimbursement for air medical interfacility transports that originate in rural areas when the sending provider simply certifies medical necessity for the flight. Yet similar interfacility transports by ground, while deemed “appropriate” from a Medicare safety standpoint, are still subjected to retrospective medical necessity determinations for reimbursement purposes, and are inadequately reimbursed. Furthermore, the transfer of rural/frontier patients from specialty treatment centers back to local hospitals where family access is improved is not covered by present Medicare reimbursement practices.

While Medicare has recently provided increased rates of mileage reimbursement for rural ambulance services, these are tied to definitions of “rural” that do not include some rural areas and, overall, do not cover the fixed and other costs of maintaining the EMS safety net infrastructure in rural/frontier areas. The issue of responsibility for maintaining this infrastructure has not been resolved.

Managing Personnel Costs

Historically, rural and frontier services have kept their costs low by employing volunteers to provide a fairly austere set of basic life support services. Equipment and training support comes from community fund-raising and/or modest requests for local governmental subsidy. Volunteer EMS providers have been increasingly challenged in their staff recruitment and retention efforts. As public and professional expectations of EMS increase, training and licensure have become more complex and difficult to support on a volunteer basis[ii].

There is a natural progression that EMS agencies go through as service requests increase:

1. Services start paying stipends.
2. Services employ a part- or full-time manager
3. Services employ part- or full-time staff at those times when it is most difficult to attract volunteers (typically Monday – Friday during normal business hours)
4. Services provide and pay for EMT-I and Paramedic levels of care when they are not available on a volunteer basis.

This, in turn, places greater pressure on volunteer service leaders to employ more sophisticated business practices such as patient billing; reimbursement; staff employment (subject to complex requirements of the Fair Labor Standards Act) especially where volunteer staff are mixed with paid staff, and to request government subsidies.

Critical Access Hospitals

The impact of closure of rural/frontier hospitals has been addressed by Congress in part by the establishment of Critical Access Hospitals. Other than reimbursement provisions for ambulance services attached to those hospitals, there has been no federal, and limited state, focus on maintaining a safety net of "critical access ambulance services". Pressure on Congress to address the rural problem in EMS reimbursement and financing is countered by concerns over reducing reimbursement for urban services in a federal health policy that resists increasing the overall EMS patient care reimbursement pot. Surveys of state EMS directors in 2000 and 2004 placed financing among the top four most important issues for rural EMS.

Resource Management

Agency coordination and current knowledge of system resources is essential to maintain a coordinated response and appropriate resource utilization within an effective EMS system. A data collection system is in place that can properly monitor the utilization of agency resources; data is available for timely determination of the quantity, quality, and utilization of resources. The agency is adequately staffed to carry out coordination of responses and activities. Agency management requests technical assistance both proactively and as needed. The agency receives coordinated and ongoing support at the local, regional and state levels, obtaining both technical expertise and financial support. There is a formal program to recruit and retain EMS personnel, including volunteers. A system of critical incident stress management is used.

Education and Training

EMS personnel can perform their mission only if adequately trained and available in sufficient numbers within their agency. The agency has a mechanism to assess current manpower needs and establish a comprehensive plan for stable and consistent EMS training programs with effective local, regional, and state support. The competence of all out-of-hospital emergency medical care personnel is assured on an ongoing basis. Agency management provides quality leadership through participation in management courses. The agency management, in conjunction with state and institutional support, assures that EMS personnel have access to specialty courses covering topics

such as trauma life support, cardiac care and pediatric patients. Personnel maintain a working knowledge of the Critical Access Hospital (CAH) designation and its potential impact on the EMS system.

Transportation

Safe, reliable ambulance transportation is a critical component of an effective EMS system. The transportation component of the local EMS plan includes provisions for uniform coverage, including a protocol for air medical dispatch, rendezvous and a mutual aid plan. This plan is based on an ongoing, formal assessment of transportation resources, including the placement and deployment of all out-of-hospital emergency medical care transport services. There is an identified ambulance placement or response unit strategy, based on patient need and optimal response times. The agency has a mechanism for modification, upgrades or improvements based on changes in the environment (i.e. population density). The agency maintains emergency vehicles in a constant state of readiness through routine maintenance, inspections and inventory control. The agency assures emergency vehicle operator competency.

Funding and Policy

To provide a quality, effective system of emergency medical care, each EMS agency must have in place a consistent, established funding source to adequately support the activities of the agency. This agency has the authority to plan and implement an effective EMS system, abiding by State and local rules and regulations for each recognized component of the EMS system (certification, licensure, standardized treatment, transport, communication and evaluation, services and establishment of medical control). There is a consistent, established funding source to adequately support the activities of the agency and other essential resources which are necessary to carry out the duties as determined by local authority.

The agency operates under a clear management structure with standard operating procedures. The public has a well-defined, easily accessible mechanism for identifying and commenting on policy governing the EMS system. The role of any local /regional EMS agencies or councils who are charged with implementing EMS policies is clearly established, as well as the relationship between agencies. Supportive management elements for planning and developing an effective EMS system include the presence of a formal EMS medical director, and an EMS Advisory Committee or equivalent for review of EMS medical care issues. The EMS Advisory Committee has a clear mission, specified authority and representative membership from all disciplines involved in the implementation of EMS systems.

Facilities

It is imperative that the seriously ill or injured patient is delivered in a timely manner to the closest appropriate facility. The agency participates in a formal system of identifying the functional capabilities of all health care facilities that receive patients from the out-of-hospital emergency medical care setting. This determination is free of political considerations, updated on a regular basis and includes stabilization and definitive care. The agency makes determinations about patient destination in accordance with clinical protocols that address patient conditions of all types, including patients requiring specialty care (such as severe trauma, burns, spinal cord injuries and pediatric emergencies), and when necessary, on-line medical direction.

All facilities to which the agency might transport proactively notify transport organizations or their communications centers when diversion is necessary. Hospital staff routinely participates in telecommunications with prehospital care providers and other hospitals when requested to facilitate patient care information and destination determinations. The health care facility assists with logistical support of the EMS system and provides feedback to the agency medical director regarding the patient care provided by the transporting agency. EMS providers maintain an understanding of the capabilities of area healthcare facilities.

Communication

A reliable communication system is an essential component of an EMS system.

The agency is responsible for utilizing a communication system that is compatible with their local dispatch agency and area hospitals. There is a common statewide radio system that allows for direct communication between all providers and facilities to ensure that receiving facilities are ready and able to accept patients and maintain patient and provider safety. Consultation with specialty and definitive care facilities is readily available. Minimum standards for dispatch centers are established, including protocols to ensure uniform dispatch and standards for dispatcher training and certification. The center provides certified Emergency Medical Dispatchers (EMD) with a system of priority dispatch. There is an established mechanism for monitoring the quality of the communication system, including the age and reliability of the equipment.

Public Information, Education and Prevention

To effectively serve the public, each agency must develop and implement an EMS public information and education program. Consistent, structured programs are in place to enhance the public's knowledge of the EMS system, appropriate EMS system access, bystander care actions and injury prevention. The EMS system actively supports programs that are directed at both the general public and EMS providers. The agency enlists the cooperation of other public service agencies, with local and state support, in the development and distribution of these programs, and serves as an advocate for change that result in injury/illness prevention.

Medical Direction

Physician oversight is critical to all aspects of the EMS system, including the Communications Center that provides patient care outside the traditional confines of a clinic or hospital. The role of the agency medical director is clearly defined, with legislative authority and responsibility for EMS system standards, protocols and evaluation of patient care. Physicians are consistently involved and provide leadership at all levels of quality improvement programs. Medical directors receive feedback from the healthcare facility regarding the patient care provided by the EMS agency and utilize the information as a quality improvement tool. Medical directors are responsible for maintaining policies and procedures incorporating standard treatment protocols. Medical directors are knowledgeable in EMS system design and development. All physicians providing on line medical direction have comprehensive knowledge about the local EMS system. The availability of on line medical direction is assured by the agency on a formal basis.

System Integration

The delivery of quality patient care requires that EMS components are clearly integrated with the overall health care system. Under the authority of the Medical Director, development and implementation of integration efforts includes triage/transfer guidelines and destination determination for patients based on age and presenting condition, data collection, and quality improvement methods for optimal care. These guidelines and protocols are developed through a multi-agency, multidisciplinary consensus driven process. Information and trends from data collection should be reflected in community public education and injury prevention programs. Collaboration and planning among all area agencies and institutions with an interest in enhancing the health care system results in coordination of resources on behalf of all participants. Safe, effective and timely inter-facility transports occur as a result of interagency communications and coordination procedures.

Quality Improvement

A comprehensive improvement program is needed to effectively plan, implement and monitor the EMS system. The agency is responsible for evaluating the effectiveness of services provided to victims of medical or trauma related emergencies, therefore the EMS agency should be able to state definitively what impact has been made on the patients served by the system. A data collection system (i.e., eNARSIS or equivalent) exists that captures the minimum data necessary to measure compliance with standards and this data is regularly provided to the EMS office. Pre-established standards, criteria and outcome parameters are used to evaluate resource utilization, scope of services, effectiveness of policies and procedures, and patient outcome.

A comprehensive, medically directed quality improvement program is established to assess and evaluate patient care, including a review process (how EMS system components are functioning) and outcome. The quality improvement program should include an assessment of how the system is currently functioning according to the performance standards, identification of system improvements that are needed to exceed the standards and a mechanism to measure the impact of the improvements once implemented.

Medical directors participate in a formal evaluation process with the health care facility to discuss the patient care provided by the EMS agency. This information is provided to the agency as part of an ongoing quality improvement program. Patient data is collected and integrated with available emergency department and trauma system data; optimally there is linkage to data bases outside of EMS (such as crash reports, trauma registry, medical examiner reports and discharge data) to fully evaluate quality of care. The evaluation process is educational and quality improvement/system evaluation findings are disseminated to agency providers. The agency assures that all quality improvement activities have confidentiality protection and are non-discoverable.

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[i] http://www.cms.hhs.gov/AmbulanceFeeSchedule/04_CFRAFS.asp#TopOfPage
[ii] http://www.raconline.org/newsletter/web/fall01_vol8-3.html