# Minnehaha County, South Dakota
## Emergency Medical Services Study

**Table of Contents**

**EXECUTIVE SUMMARY** .......................................................................................................................... 1

**METHODOLOGY** ...................................................................................................................................... 3

**INTRODUCTION** ....................................................................................................................................... 4

- **COUNTY DESCRIPTION** .......................................................................................................................... 4
- **ANTICIPATED FUTURE DEMAND FOR EMS IN MINNEHAHA COUNTY** .................................................... 4
  - Figure 1: Minnehaha County Age Distribution Projection Pyramid .......................................................... 4
  - Figure 2: Minnehaha County Age Distribution Projection Table .............................................................. 5
- **EMS REGULATORY STRUCTURE IN SOUTH DAKOTA** ........................................................................... 5

**SYSTEM OVERVIEW** .................................................................................................................................. 6

- Figure 3: Minnehaha County EMS Provider Zone Assignments ................................................................. 6

**KEY CONTEXT AND CURRENT NATIONAL TRENDS** .............................................................................. 8

- **THE OPTIMAL EMS SYSTEM** ................................................................................................................ 9
- **EMS DESIGNS, BEST PRACTICES AND BEST SYSTEMS** ..................................................................... 10

**PROCESS AREA SUMMARIES** ................................................................................................................. 12

- **9-1-1 AND COMMUNICATIONS** ........................................................................................................... 12
  - DESCRIPTION OF BEST PRACTICES ..................................................................................................... 12
  - Figure 4: Typical EMS Call Processing Flow-Chart ................................................................................... 13
  - OBSERVATIONS AND FINDINGS ......................................................................................................... 13
  - ENHANCEMENT OPPORTUNITIES ......................................................................................................... 14

**MEDICAL FIRST RESPONSE** .................................................................................................................... 15

- DESCRIPTION OF BEST PRACTICES ......................................................................................................... 15
- OBSERVATIONS AND FINDINGS ............................................................................................................... 15
  - MEDICAL FIRST RESPONDERS ............................................................................................................ 15
    - Figure 5: AHA System of Care ............................................................................................................... 17
  - ENHANCEMENT OPPORTUNITIES ......................................................................................................... 17

**EMS CARE, TRANSPORTATION & OPERATIONS** ...................................................................................... 18

- DESCRIPTION OF BEST PRACTICES ......................................................................................................... 18
- OBSERVATIONS AND FINDINGS ............................................................................................................... 18
  - EMERGENCY MEDICAL SERVICES PROVIDERS DESCRIBED ................................................................ 19
    - **DELL RAPIDS COMMUNITY AMBULANCE SERVICE, INC.** ................................................................. 19
    - **GARRETSON COMMUNITY AMBULANCE CORP.** ................................................................................ 19
    - **HUMBOLDT FIRE & AMBULANCE SERVICE, INC.** ................................................................................ 20
    - **JASPER COMMUNITY AMBULANCE, INC.** .......................................................................................... 20
    - **MED-STAR PARAMEDIC AMBULANCE, INC.** ...................................................................................... 20
    - **PARAMEDICS PLUS, LLC** .................................................................................................................. 21
EMS SYSTEM DATA & ANALYSIS

CALL VOLUME

Figure 6: Call Volume by Hour of Day (2015)
Figure 7: Call Volume by Hour of Day (2016)
Figure 8: Call Volume by Day of Week (2015)
Figure 9: Call Volume by Day of Week (2016)
Figure 10: Call Volume by Agency (2015)
Figure 11: Call Volume by Agency (2016)

DENSITY AND RESPONSE TIMES

Figure 12: Existing Land Use Map
Figure 13: Land Use Analysis
Figure 14: 2015 EMS Incident Heat Map
Figure 15: 2016 EMS Incident Heat Map
Figure 16: 2015 Response Time Performance by Agency
Figure 17: 2016 Response Time Performance by Agency

DETERMINING APPROPRIATE RESPONSE TIMES

ENHANCEMENT OPPORTUNITIES

MEDICAL ACCOUNTABILITY

OBSERVATIONS AND FINDINGS
ENHANCEMENT OPPORTUNITIES

CUSTOMER AND COMMUNITY ACCOUNTABILITY

OBSERVATIONS AND FINDINGS
ENHANCEMENT OPPORTUNITIES

PREVENTION AND COMMUNITY EDUCATION

OBSERVATIONS AND FINDINGS
ENHANCEMENT OPPORTUNITIES

ORGANIZATIONAL STRUCTURE AND LEADERSHIP

OBSERVATIONS AND FINDINGS
COORDINATION AND OVERSIGHT
HUMAN RESOURCES
BUSINESS PLANNING AND MEASUREMENT
Figure 19: Proposed QI Process
ENHANCEMENT OPPORTUNITIES

ENSURING OPTIMAL SYSTEM VALUE

OBSERVATIONS AND FINDINGS
ENHANCEMENT OPPORTUNITIES

THE WAY FORWARD

Figure 20: EMS System Future Framework
ENHANCEMENT OPPORTUNITIES COST & PRIORITY OUTLINE
Attachments:

Attachment A: Benchmark Summary
Attachment B: Proposed Ordinance
EXECUTIVE SUMMARY

Minnehaha County engaged Fitch & Associates in late 2016 to analyze its Emergency Medical Services (EMS) System, identify implementable opportunities and potential models for optimizing the efficiency and effectiveness of EMS System operations and provide options for sustainability of the System into the future. The data collection and analysis was conducted during the fourth quarter of 2016 and the first quarter of 2017.

The overarching goal of this analysis was to support the County’s decision related to future oriented options for EMS. Specifically, the County sought recommendations on mechanisms for the provision of quality EMS services to all citizens; opportunities to enhance service in underserved areas; and how to optimize the County’s contributions.

This report outlines key observations and corresponding enhancement opportunities that will position the EMS System to evolve with future changes in healthcare, address financial obstacles and ensure optimal pre-hospital delivery of care.

Key findings of the analysis include:

- Multiple agencies provide service and largely have very dedicated staff and volunteers.
- Agencies are providing Advanced Life Support (paramedic) level care for the majority of 911 responses.
- Response times are slightly above typical benchmarks for similar sized rural counties, but not unreasonably so.
- There are no established fractile (90th percentile compliance) response time requirements based upon the severity of call (life-threatening, non-life-threatening and non-life-threatening/non-urgent responses). Response times are currently captured and measured however, once captured, there are no measures taken to improve performance, if necessary. Feedback is not provided to system stakeholders at regularly defined intervals.
- There is no single point of medical direction for the system. Currently, each ambulance provider has their own Medical Director, each of whom function at different levels.
- The current Quality Assurance process is inefficient, antiquated and labor intensive making it extremely difficult for effective clinical performance monitoring, provider feedback and clinical education to take place.
- After identifying the geographic and temporal distribution of calls within the EMS system there does not appear to be a need to change or consolidate the response zones currently in use.
- Med-Star elected not to participate in the County study. Data provided by Metro and information other stakeholders provided about Med-Star response times and responsiveness were positive. Unfortunaltely, more robust conclusions, particularly related to the potential expansion of Med-Star service within the County may have been reached had they participated.
● The current county ordinance needs revision. It does not clearly define the roles and responsibilities of staff members tasked with system oversight. Further, it does not allow for the clinical review of the vast majority of 911 responses in Minnehaha County.
● Reducing the level of subsidy provided is not a reasonable alternative if the county desires to maintain current service levels.

Utilizing the recommendations identified throughout this report will help to ensure that the County’s EMS System and its impact on the community will be clinically and operationally sound, fiscally prudent and streamlined now and into the future.

We appreciate the efforts and support of all the individuals and agencies that participated in the study.
METHODOLOGY

The review of Minnehaha County’s EMS System was completed using a combination of data provided by the County and Metro Communications Center, on-site interviews conducted by the Consultant team, analysis and benchmarking against categories aligned with the Institute for Healthcare Improvement’s Triple Aim goals. This approach was utilized in order to compare performance of the County EMS System against 50 baseline metrics in eight recognized process areas.

Interviews were conducted with representatives from EMS agencies, Fire Departments, the Minnehaha County Sheriff’s Office, Metro Communications, the County’s Quality Assurance Director for Ambulance Services and County elected and appointed officials. Additionally, statutes and ordinances at both the state and county level were reviewed. It should be noted that MedStar Paramedic Ambulance is the largest service and did not cooperate with the County or provide information for the study.

The information presented in this review represents response data from January 2015 through December 2016 unless otherwise noted.
INTRODUCTION

COUNTY DESCRIPTION

Minnehaha County is located along the eastern border of South Dakota. It is part of the Sioux Falls, SD Metropolitan Statistical Area, which is the largest in the state. Within the County are 11 towns, 23 townships and 3 unincorporated towns. The County has a total area of 814 square miles, of which 807 square miles is land and 6.7 square miles is water, and a population (2010) of 169,468 (86% urban, 14% rural). The population was 148,281 in 2000, representing a growth of 14.29% in the 10-year period, or 1.4% per year.¹ The economy in the County is represented by healthcare, government, finance, manufacturing and retail. The County’s median household income is $53,525.² Further, it has a below-average cost of living, with an index of 82.3 (2016).³

Anticipated Future Demand For EMS in Minnehaha County

Minnehaha County’s population has grown steadily, at a rate consistent with the overall population growth of South Dakota, from 123,809 in 1990 to an anticipated 207,000 plus in 2035.⁴ According to the 2013 U.S. Census Bureau’s American Community Survey, the median age of Minnehaha County residents is increasing. The population of Minnehaha County over 65 years of age is 12.6% (2015), and that proportion is expected to increase over the next 30 years.

Figure 1: Minnehaha County Age Distribution Projection Pyramid

---

¹ Minnehaha County Census Population Change
² United States Census Bureau Minnehaha County, South Dakota
http://www.census.gov/quickfacts/table/PST045215/46099
³ The average cost of living in the United States is assigned an index of 100.0
http://www.city-data.com/county/Minnehaha_County-SD.html
⁴ Population & Employment Analysis Envision 2035
http://www.minnehahacounty.org/dept/pl/comprehensive_plan/comprehensive_plan.html
EMS Regulatory Structure in South Dakota

EMS in South Dakota is governed by South Dakota Codified Law Title 34, Chapter 11, Ambulance Services and Title 36, Chapter 4B, Advanced Life Support Personnel. In addition, the South Dakota Department of Health has promulgated Administrative Rules of South Dakota Article 44:05, Ambulance Operation and Article 20:61, Advanced Life Support to further detail the legislation.

Title 34, Chapter 11 sets forth the requirements for licensing and regulation of ambulance services, certification of ambulance personnel, trip recordkeeping and reporting and developing quality assurance programs in services that provide Advanced Life Support. In addition, it provides authority to the South Dakota Department of Health to oversee additional rules relating to the operation of ambulance services, including patient care standards, quality assurance personnel matters and necessary equipment and supplies. Article 44:05 of the Administrative Rules of South Dakota, further outlines the licensing and fees necessary and the personnel and vehicle standards.

Title 36, Chapter 4B creates the State’s Advanced Life Support (“ALS”) program and establishes that it be implemented and overseen by the Department of Health under the direction of the Board of Medical and Osteopathic Examiners. Additional relevant sections of Chapter 4B establish the regulatory framework for EMS personnel, including their minimum education necessary, licensing requirements, professional conduct standards, scope of permissible practice, and mandate that they be supervised at
all times by a physician. Article 20:61 further outlines the requirements for examination and licensure of EMS personnel.

At interview several sources described the difficulty working within the state regulatory structure as a number of state positions are no longer funded and it has slowed administrative responsiveness.

**System Overview**

The Minnehaha County EMS System consists of multiple public safety organizations, within the County, the EMS System includes:

- A single governmentally funded communications center: Metro Communications Agency.

The system is also supported by the Minnehaha County Sheriff’s Office, which deploys patrol deputies that are trained to an Emergency Medical Technician certification level. Four of the six rural EMS providers receive an annual subsidy from Minnehaha County.

**Figure 3: Minnehaha County EMS Provider Zone Assignments**
Local governance is provided under the direction of the County Commission. The Code of County Ordinances, Chapter 31, provides legal authority for the EMS System. The clinical oversight for the system is provided by the County’s Quality Assurance Director for Ambulance Services. The Quality Assurance Director for Ambulance Services is responsible for reviewing 25% of each EMS provider’s monthly non-emergency, Basic Life Support ambulance runs. The Quality Assurance Director for Ambulance Services also holds approval authority for medical procedures and medical protocols adopted by each EMS provider, as well as establishing and maintaining additional training for ambulance personnel when appropriate.

The County’s subsidy for its contract rural EMS providers is $151,000 annually ($50,000 each for Dell Rapids Community Ambulance Service, Garretson Community Ambulance Service and Humboldt Fire & Ambulance Service) and 1,000 for Jasper Community Ambulance Service). The other County provider located in Brandon has sufficient volume that it does not require a subsidy. In addition to the County subsidy, each EMS provider receives funds from Cities and Townships through contractual agreements in addition to fees for all emergency or non-emergency transport service provided.
KEY CONTEXT AND CURRENT NATIONAL TRENDS

An EMS system key goal is to ensure access and appropriate response for those in need of emergency services and medical transportation. The mission of EMS can be isolated to three core functions. They are: preventing and reducing the number of lives lost; minimizing the patient’s pain and suffering, and reducing the expenses associated with catastrophic injuries and illnesses.

Modern EMS suffers from an identity crisis since its creation five decades ago to handle the carnage on the highways\(^5\) and provide out-of-hospital cardiac care\(^6\). Does EMS fall under public safety, health care or public health?

In 2007, the National Academies of Sciences’ Institute of Medicine (IOM) issued a White Paper titled: “EMS at the Crossroads.” IOM identified six primary issues.

- Insufficient Coordination
- Disparities in Response Time
- Uncertain Quality of Care
- Lack of Disaster Readiness
- Divided Professional Identity
- Limited Evidence Base\(^7\)

Rural counties have additional issues:

- Areas with low population density generally cannot support a 24-hour full-time paid ALS EMS response system
- Low population density also results in a smaller pool of people from which to recruit volunteer EMS personnel
- EMS caregiver initial and continuing education requirements require a significant time commitment and often are not locally available.
- Large geographic areas with secondary roadways are often difficult to navigate and hinder response time\(^8\)

Although ten years have passed since the IOM report was published, as the Consultant team conducted this review, it was clear that many of the issues present at that time are still prevalent in Minnehaha County.

---


THE OPTIMAL EMS SYSTEM

An optimal EMS System is best designed with a patient focused and customer centered perspective. Research shows that the EMS System involves much more than the common perception of emergency ambulance and first responder services. It incorporates frequent community education and participation, medical direction and system direction and oversight, in addition to clinically sophisticated, evidenced based response and emergency transportation. Since the EMS System has a limited number of resources, the overall design of the system should ensure that the allocation of these resources be directed to provide the greatest benefit to patients.

The 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiac Care focuses on the impact the community has on patient outcomes. The American Heart Association uses a metaphor known as the Chain of Survival to outline five key links in the Emergency Cardiac Care sequence for adult out-of-hospital cardiac arrest. The 5 links are:

- Recognition of cardiac arrest and activation of the emergency response system
- Early cardiopulmonary resuscitation (CPR) with an emphasis on chest-compressions
- Rapid defibrillation (with an AED)
- Basic and advanced emergency services
- Advanced life support and post-cardiac arrest care

Systems that are able to execute a rapid, team oriented response see a cardiac arrest survival rate near the 50% mark. Team-oriented, goal aligned response, along with the help of both the community and medical first responders, should be able to deliver high-quality CPR and arrive at the patient’s side within four to six minutes of a 9-1-1 dispatch, with 90% reliability.

---

9 American Heart Association Out-of-hospital Chain of Survival
http://cpr.heart.org/AHAECC/CPRAndECC/AboutCPRFirstAid/CPRFactsAndStats/UCM_475731_Out-of-hospital-Chain-of-Survival.jsp
Once the response phase is completed and care initiated, the patient should be transported to the closest, most appropriate hospital that is able to treat their presenting medical condition. Simply put, an EMS system first determines the need, sends the appropriate resource, and provides the patient an appropriate disposition for care. Ultimately, the system should deliver a good value for the resources invested. However, the economic reality is that sending the right resource at the right time comes at a cost.

**EMS DESIGNS, BEST PRACTICES AND BEST SYSTEMS**


These early systems evolved from “neighbor helping neighbor” volunteer groups to highly complex response systems of physician extenders that function as part of the larger healthcare delivery system.

EMS systems nationwide are struggling to meet clinical, operational, and financial performance objectives. Ambulance services are primarily funded under a complex and flawed federal reimbursement methodology that does not cover the full cost of operations or the cost of readiness. Studies, including those prepared for the International City and County Management Association (ICMA) and the National Academies of Science Institute of Medicine, (IOM) document the underlying issues.

The fragmented nature of EMS means that there are many organizations that provide recommendations, protocols, and best practices from their clinical, operational, or regulatory viewpoint. State EMS regulations reflect minimum performance requirements.

Other commonly accepted “standards” are drawn from a variety of sources, including:

- “10 EMS Standards,” currently used to evaluate state EMS systems
- “EMS Clinical Practice and Systems Oversight” developed by the National Association of EMS Physicians as core curriculum for American Board of Emergency Medicine certification in EMS
- “Evidence-Based Performance Measures for Emergency Medical Services Systems: A Model or Expanded EMS Benchmarking.” Position statement by the 2007 Consortium of U.S. Metropolitan Municipalities’ EMS Medical Directors
- “EMS Agenda for the Future,” developed by the US Department of Transportation
- “EMS at the Crossroads,” developed by the National Academies of Sciences’ Institute of Medicine 2007
- “The 7 Pillars of EMS Officer Competency” developed by the National EMS Management Association.
- “EMS In Critical Condition: Meeting the Challenge,” produced by The International City/County Management Association
“EMS Structured for Quality: Best Practice in Designing, Managing and Contracting for Emergency Ambulance Service,” published by the American Ambulance Association
- International Academies of Emergency Dispatch
- Commission on the Accreditation of Ambulance Services
- National Fire Protection Association

In summary, there is not a one-size-fits-all, universally best EMS system design model or single “best practice system” that can be identified.
PROCESS AREA SUMMARIES

Every EMS organization is composed of numerous process areas to confront individual functions of the operation of the system. The Consultant team met with key system participants, as well as with community, County and local stakeholders. An overview of the best practices and findings for each process is described below. Enhancement opportunities are included where relevant.

Specific benchmarks and Minnehaha County’s performance in each of the following categories are described:

- 9-1-1 and Communications
- Medical First Response
- Medical Transportation
- Medical Accountability
- Customer and Community Accountability
- Prevention and Community Education
- Organizational Structure and Leadership
- Ensuring Optimal System Value

The summary of these 50 benchmarks can be found in Attachment A – Benchmark Summary

9-1-1 and COMMUNICATIONS

DESCRIPTION OF BEST PRACTICES

Best practice EMS systems are organized to facilitate wire-line, cellular, voice over internet protocol (VoIP), automatic crash notification, patient alerting system devices and other public 911 access to the Emergency Medical Services System. Voice, video, telemetry, and other data communications conduits are employed, as necessary, to best enhance real-time information management for patient care.

A medically directed system of protocol-based Emergency Medical Dispatch (EMD) and communications is in place. The call reception and EMS call processes are designed logically and do not delay activation of medical resources. Technology supports the caller being directed to the appropriate Public Safety Answer Point (PSAP) for the geographic location of the call. All 911 callers should receive call prioritization and pre-arrival instructions in accordance with International Academies of Emergency Dispatch (IAED) or similar process. Automated quality improvement (QI) processes are used for facilitating results being reported to clinical and operations executives in a concise manner.

Data collection facilitates the analysis of key service elements and this data is routinely benchmarked and reported. Technology supports interface between 911, medical dispatch functions and administrative processes. Radio/cellular linkages between dispatch, field units and medical facilities provide adequate coverage and facilitate both voice and data communications. There is interoperability between allied public safety agencies.
Communications Benchmarks

- Public access through a single number preferably enhanced 911.
- Single PSAP exists for the system.
- Effective connection between PSAP and dispatch points, with minimal handoffs required for callers.
- Certified personnel provide pre-arrival instructions and priority dispatching (EMD) and this function is medically supervised.
- Data collection, which allows for key service elements to be analyzed.
- Technology supports interface between 911, dispatching and administrative processes.
- GPS/AVL in each vehicle enables dispatch to alert the closest unit.
- Radio linkages between dispatch, field units and medical facilities provide adequate coverage and facilitate communications.

OBSERVATIONS AND FINDINGS

The 911 public safety access point (PSAP) in Minnehaha County is Metro Communications. The agency operates under the direction and supervision of the Metro Management Council (MMC) to plan, organize, control and manage all communications systems used by the County and City of Sioux Falls for the provision of emergency services. The council consists of five members including the Mayor of Sioux Falls, two members of the Sioux Falls City Council appointed by the Mayor, and two members of the
Minnehaha County Board of Commissioners appointed by the Commission Chair. The Agency is headed by a Director of Communications who is appointed by the council. The agency employs forty-nine (49) full-time employees, and dispatch operations are staffed by eight (8) shift supervisors and thirty-five (35) dispatchers. Dispatch operations include dispatching law enforcement, fire, and emergency medical services for the 11 towns, 23 townships and 3 unincorporated towns in Minnehaha County as well as the area of Lincoln County that lies within the City of Sioux Falls.

Calls to 911 are received on a modern telephone system, with appropriate ANI/ALI capabilities, and the telephone system is FCC Phase 2 compliant (cell phone calls are geographically located using required technology, in addition to the required automatic location of calls originating from land line telephones). Calls are entered into a New World™ computer aided dispatch (CAD) system, which pinpoints the call location and recommends the appropriate services to be dispatched for particular problem codes. The Agency has an average call processing interval (incident initiate in CAD to ambulance dispatch) of 1.32 minutes. The Agency recently completed a RFP for a new CAD system, and will be transitioning from New World™ CAD to Zuercher™ CAD. The Agency has scheduled a go-live date of February 2018 for Zuercher™.

Automatic Vehicle Location (AVL) capabilities are only utilized on Paramedics Plus ambulances, the remaining services do not use an AVL system rendering ambulances invisible to the Agency. Additionally, the CAD system does not electronically interface with any of the Electronic Patient Care Reporting (ePCR) systems used by the EMS agencies.

The Agency has been an Accredited Center of Excellence (ACE) by the National Academy of Emergency Dispatch since 2000 and utilizes Priority Dispatch emergency medical dispatch protocol to screen all medical calls for service. The Agency contracts with Sioux Falls Regional Emergency Medical Services Authority (REMSA) to provide external oversight service to the council in the areas of compliance with medical dispatch protocols, operator certification, medical standards, and external quality assurance review.

The Agency reports that it is not always made aware when a unit is not Advanced Life Support capable or staffed.

**ENHANCEMENT OPPORTUNITIES**

1. All ambulances and other EMS vehicles should utilize automated vehicle location / in-vehicle navigation (AVL/IVN), which provides location and travel information to the vehicle and Metro Communications Agency.
2. Change the procedure and require the staffing/capabilities changes be consistently reported to Metro so that back-up ALS resources can be immediately dispatched should the situation require that level of service
3. The CAD system should electronically interface with the electronic patient care reporting (ePCR) system used by all agencies providing emergency medical service in Minnehaha County.
MEDICAL FIRST RESPONSE

DESCRIPTION OF BEST PRACTICES

Medical first responders in best practice systems are organized appropriately for the communities in which they serve. They function as part of an integrated response system that is guided by state and local legislative authority, and which reflects accepted medical practice. First responders (paid or volunteer) are certified at a minimum EMT-Defibrillator or Medical First Responder (MFR) level. They are medically supervised by the system medical director, including participation in performance improvement audits/activities. Defined response time standards exist for formal first responders and those response times are reported with those of the system. Early defibrillation capabilities are available for EMS first responders and in areas of high-density response areas such as airports, hotel complexes. When community or first response personnel are involved in patient care, a smooth transition of care is achieved.

Medical First Response (MFR) Benchmarks

- MFRs are part of an integrated response system and medically supervised by a single system medical director.
- Defined response time standards exist for MFRs.
- MFR agencies report fractile response times.
- AED capabilities on first line apparatus.
- Smooth transition of care is achieved.

OBSERVATIONS AND FINDINGS

MEDICAL FIRST RESPONDERS

Medical first responders have an essential role in mitigating life-threatening emergencies and supporting the communities’ EMS efforts as part of the public safety mission. In the majority of North American cities, this role is generally funded by tax dollars as part of the public safety budget rather than from user fees.

Medical first responder services are provided by several municipal fire departments in Minnehaha County and by the County Sheriff. Most first response apparatus are equipped with an automated external defibrillator (AED) and providers are a mix of firefighters, Emergency Medical Responders (EMRs), EMTs and paramedics. The largest MFR fire department in the County, Brandon Fire is a volunteer organization, comprised of 40 plus volunteers operating 8 pieces of fire apparatus.

The Minnehaha County Sheriff’s Office employs fourteen (14) patrol deputies that have completed the National Registry of Emergency Medical Technicians (NREMT) curriculum and are licensed Emergency Medical Technicians (EMTs). In addition to the standard EMT curriculum, the deputies have completed advanced education and training in areas such as Naloxone administration and advanced trauma care.
The law enforcement involvement in providing medical first response is a tremendous asset to both the Minnehaha County citizens and the EMS system. The department was represented at interview by Sheriff Mike Milstead who has served in Minnehaha County for over forty (40) years. Sheriff Milstead indicated that the department currently has three (3) additional deputies selected to complete the program and he would like to see it expanded to twenty (20).

The Consultants are of the opinion that program expansion would be of great benefit to the EMS system. In addition to working through allied organizations, EMS system providers could also partner with MCSO to work on public outreach initiatives and continuing education.

Currently, there are not defined response time standards for MFRs in the EMS system and currently none of the MFRs report fractile response times. However Metro Communications does measure fractile response times of MFRs.

The National Fire Protection Association Standard 1720: “standard for effective organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by volunteer and combination fire departments to protect citizens and the occupational safety and health of fire department employees” classifies areas with a population density less than 500 people per square mile as “Rural” and recommends a response time standard of 14 minutes with eight percent (80%) reliability. This time period begins at the time of dispatch and ends on arrival of the resource at the incident.\(^\text{10}\)

The transition of care between first response and transport agencies was reported as seamless.

The American Heart Association advocates a team-based System of Care (SOC). The community and medical first responders should be able to deliver rapid defibrillation and high-quality CPR, arriving to the patient’s side within four to six minutes of a 9-1-1 dispatch, with 90% reliability.\(^\text{11}\)

Accomplishing this performance requires creative utilization of public access AEDs, CPR-trained community members, and innovative use of social media and information technology to alert the nearest CPR-trained person, and match patient location with nearest AED.

**ENHANCEMENT OPPORTUNITIES**

4. Champion expansion and clinical development of medical first responder services throughout Minnehaha County. The County should assure that first response is available for all high-priority EMS calls.
5. Consider expansion of the County Sheriff’s role in medical first response.
6. All firefighting personnel should be trained to an Emergency Medical Responder certification level, assuring adequately trained personnel arrive on the scene and properly care for an emergency. The County should assist all first responders in obtaining their EMR certification.
EMS CARE, TRANSPORTATION & OPERATIONS

DESCRIPTION OF BEST PRACTICES

In a best practice EMS system, a mechanism exists to identify and assure adequate deployment of ground, air and other transportation resources meeting specific standards of quality, to assure timely response, scaled to the nature of event. There is capability to monitor safety and response time issues. Defined response time targets come into play, according to the severity of call, and individual response components are measured by using both mean and 90th percentile measures.

Defined clinical service levels use current medical research to guide the medical interventions of the system. Changes to improve clinical practice can be introduced rapidly. Ambulances are staffed and equipped to meet the identified service requirements. Procurement, maintenance, and logistics processes function to optimize unit availability. Resources are efficiently and effectively deployed to achieve response time performance for projected demand with due regard for taxpayers and end users. When multiple agencies are involved, a smooth integration and transition of care is achieved.

The system is capable of scaling up day-to-day operations to meet the needs of larger, all-hazards events, based on threat and capabilities assessments of the likeliest events to occur in the state. It is essential that mass casualty responses involve logical expansion and extension of daily practices and not the establishment of new practices reserved for large-scale events.

Medical Transportation Benchmarks

- Defined response time standards exist.
- Agencies report fractile response times.
- Units meet staffing and equipment requirements.
- Resources are efficiently and effectively deployed.
- There is a smooth integration of first response, air, ground and hospital services.
- Coordinated disaster plans are developed and maintained.

Observations and Findings

The majority of EMS calls in Minnehaha County receive a paramedic-level response. However, due to the fluctuation in service levels throughout the County during off-peak hours, there are times when a paramedic-level response is not available to respond to calls.

Minnehaha County has established EMS zones, each zone has an assigned ambulance provider that operates under a contract with the County. The EMS zones were updated by the County in December 2016.

Metro Communications captures and measures response data, however, the County does not maintain the data or any associated response times in a manner that allows benchmarking to other similar
Counties. Response data points are missing from some providers, making response time performance analysis inaccurate and unreliable. Fractile response times by EMS zone or provider are not measured. Some providers report responses for standby events where an actual EMS response was not initiated, making it extremely difficult to compare response data from Metro Communications to response data provided by the provider. The County’s inability to capture, monitor and subsequently report reliable and accurate data is a serious system deficit that must be addressed.

EMERGENCY MEDICAL SERVICES PROVIDERS DESCRIBED

DELL RAPIDS COMMUNITY AMBULANCE SERVICE, INC.

Dell Rapids Community Ambulance Service, established in 1975, is a community-owned not-for-profit organization. The service operates two emergency ambulances in the Minnehaha County EMS System. The service reports having handled 461, 911 responses during 2015. The service’s 2015 financial report showed a loss of $24,680 (reported revenue includes the County subsidy). The department spokesperson was Ryan Sittig, General Manager. Sittig believes one area that could be improved is the implementation of unified County-wide patient care protocols. Sittig also indicated that the service “would take a serious financial hit that would compromise the quality of care provided” without the County subsidy (currently $50,000 per year).

The service is funded through a combination of revenue from patient charges, County subsidy and indirect public support from the City of Baltic, the City of Colton, the City of Dell Rapids and several area townships. The service has 28 employees; 14 paramedics, 13 EMTs and 1 physician medical director. The service’s primary ambulance is staffed with 1 paramedic and 1 EMT 6am-6pm Monday through Friday, and 1 paramedic 6pm - 6am Friday through Monday. Saturday and Sunday 1 EMT and 1 paramedic are scheduled 24 hours per day. The remaining hours are staffed by paid, on-call volunteer EMTs and paramedics. The secondary ambulance is staffed with volunteer on-call employees that are paid only when they respond to calls.

GARRETSON COMMUNITY AMBULANCE CORP.

Garretson Community Ambulance is a community-owned not-for-profit organization that has served in Minnehaha County for 45 years. The service operates one emergency ambulance in the Minnehaha County EMS System. The service reports having handled 223, 911 responses during 2015. The service’s 2015 financial reports show a profit of $4,164 (reported revenue includes the County subsidy). The department spokesperson was Matthew Penning, Operations Manager. Penning, who is also a Firefighter/EMT, reports that Garretson has a core staff of local dedicated volunteers. Penning believes that cutting rural ambulance funding would not only impact the level of service citizens receive but would also drive current and prospective volunteers away.

The service is funded through a combination of revenue from patient charges, County Subsidy and indirect public support from the City of Garretson and several townships. The service has 21 employees; 2 paramedics, 19 EMTs and 1 physician medical director. The service is staffed with 2 EMTs and 1
paramedic 6am-6pm Monday through Friday. All night and weekend hours are staffed by paid, on-call volunteer EMTs and paramedics.

HUMBOLDT FIRE & AMBULANCE SERVICE, INC.

Humboldt Fire & Ambulance Service, established in 1968, is a community-owned not-for-profit organization. The service operates one emergency ambulance in the Minnehaha County EMS System. The service reports having handled 266 requests from 911 during 2015. The service’s 2015 financial report showed a profit of $27,480 (reported revenue includes the County subsidy). The service was represented by John Jarding, Fire Chief and Tom Kaffar, Ambulance Director. Chief Jarding and Director Kaffar believe what would help improve the service the most would be 24/7 Advanced Life Support coverage and a stipend for volunteers that would reflect the coverage. Chief Jarding and Director Kaffar also reported that regular feedback from a Quality Improvement perspective would be extremely beneficial and would be well received amongst providers.

The service is funded through a combination of revenue from patient charges, County subsidy and indirect public support from the City of Humboldt, the City of Hartford and several townships. There are 18 EMTs and 3 paramedics employed. Monday through Friday, the service staffs a paid, on-call paramedic from 6am – 6pm and the second provider is a paid, on-call volunteer EMT or paramedic. Saturday and Sunday, an EMT is scheduled for calls.

JASPER COMMUNITY AMBULANCE, INC.

Jasper Community Ambulance, established in 1969, is a community-owned not-for-profit organization. The service, located in Jasper, Minnesota operates one emergency ambulance in the Minnehaha County EMS System. Jasper is dual licensed in both Minnesota and South Dakota and serves the citizens of Lyon, Minnehaha, Moody and Pipestone Counties. The service reports an average annual 911 response volume of 4 per year. There are 12 volunteer providers and 1 physician medical director. The service was represented by Kim Drew, President and Jim Veldkamp, Director. President Drew is a Registered Nurse at Pipestone Medical Center and has served Jasper Community Ambulance for 27 years. The service will receive a $1,000 subsidy from the County this year, for the first time. President Drew reports that while a County subsidy would be appreciated, “with or without funding from the County, Jasper will continue to serve our area of Minnehaha.” President Drew also indicated that citizens in Jasper’s territory are concerned the County may take Jasper out of their service area. The service is eagerly anticipating 3 new volunteers completing their EMT training, which is expected to occur in early 2017.

MED-STAR PARAMEDIC AMBULANCE, INC.

Med-Star Paramedic Ambulance is a private ambulance service that has operated in Minnehaha County for 17 years. Med-Star is headquartered in the City of Brandon and operates a fleet of seven ambulances in the Minnehaha County EMS System. Metro Communications data shows 803 responses for the service in 2015. Representatives of Med-Star Paramedic Ambulance elected not to provide information or participate during the on-site visit to the County. Volunteer firefighters from several departments
(Brandon, Renner, Splitrock, and Valley Springs) were interviewed and their comments regarding Med-Star’s performance were uniformly positive. One volunteer reported that the service they received from Med-Star was “the best we have had in quite a while.”

Based upon other publicly available information, we believe that MedStar is a strong asset to the area it serves.

PARAMEDICS PLUS, LLC

Paramedics Plus is a private ambulance service that has operated in Minnehaha County since 2015. In addition to serving the County, the service is the contracted Emergency Medical Services provider for the City of Sioux Falls. The service operates a fleet of eleven ambulances, is responsible for 73-square miles within the City of Sioux Falls and responds to an average of 40 calls for service each day. In addition to the City of Sioux Falls, Paramedics Plus provides services in Alameda County, California, Fort Wayne, Indiana, and Pinellas County, Florida. The service was represented by Michael Bureau, Chief Operating Officer. Bureau reported that the rural EMS zones seemed to function well and the citizens seemed “very happy.” Bureau also indicated that he believes there could be economies of scale in having one singular point of Quality Improvement for all Minnehaha County EMS providers.

EMS System Data & Analysis

The goal of the response data analysis is to report current EMS system performance and propose what system performance in Minnehaha County could be achieved if optimal system elements are utilized.

Call Volume

The determination of activity and performance of the EMS System is imperative in order to identify opportunities for improvements in resource allocation and effective service delivery. The design of an EMS system is dependent upon understanding demand on a temporal and geographic basis. Response data was examined using a range of EMS analytical techniques to understand what was occurring in the System and provide recommendations based off of the results of the analysis.

The purpose of the data analysis process was to:

- Quantify activity levels of the EMS providers
- Measure time intervals for the components of an emergency response
- Identify the geographic distribution of EMS calls within the System
- Identify the temporal distribution of EMS calls within the System

The following results were observed:
The patterns illustrated in both 2015 and 2016 are typical of 911 EMS systems with similar system size and geography, where call volumes are low in the early morning hours and slowly rise throughout the day. The figures above represent that from 0000 to 1100 hours the call volume is (<1 call/hour) while from 1200 to 2300 the call volume is (1 call/hour).
The patterns depicted for call volume by Day of Week in 2015 and 2016 show that Wednesday and Friday are the busiest days in the system. Further, Thursday is the slowest day in the system, while weekend call volume remains relatively consistent with the call volume during the week.
In 2015, there was a total of 1,673 responses; Med-Star handled 48 %, Dell Rapids 25.88 %, Humboldt 14.29 % and Garretson 11.84 %.

In 2016, there was a total of 1,580 responses; Med-Star handled 49.87 %, Dell Rapids 24.94 %, Humboldt 14.94 % and Garretson 10.25 %.

The metrics presented above illustrate that the County has a low annual call volume which makes staffing extremely difficult for the rural ambulance agencies. Staffing each ambulance 24 hours a day, 365 days a year without receiving funds through taxes or a subsidy is impossible, leaving the agencies to depend heavily on local, dedicated volunteer providers.
DENSITY AND RESPONSE TIMES

Call volume density and population are two components to be considered in establishing future response time standards for the County EMS System. Eighty-six percent (86%) of the population in Minnehaha County lives in urban areas compared to fourteen percent (14%) in rural areas, the high percentage of urban residents can be attributed to the amount of County residents that live in the City of Sioux Falls (132,793). The City of Sioux Falls represents (78.3%) of the overall population of the County. Further, the City contracts with Paramedics Plus for Emergency Medical Services which is separate from the contracts the County has with the rural ambulance agencies that service the rest of the County.

The County recently completed a comprehensive plan titled “Envision 2035” the plan focused on providing direction in making land use and development decisions throughout the rural area of Minnehaha County. Included in the plan was an existing land use analysis. The County conducted a land use inventory using County (GIS) and tax payer information. The results of the County’s analysis determined “the land use pattern in the unincorporated areas of the County is primarily agricultural or undeveloped lands. When the land area of cities (incorporated areas) are excluded, approximately 81.6% (384,789 acres) of the County has an agricultural designation.” The following Existing Land Use Map and Land Use Analysis Table were produced from the plan.

Figure 12: Existing Land Use Map
The County also emphasized in the plan, that “it is anticipated as existing subdivisions in the unincorporated area are built out, pressure will be received from developers and land owners to approve new subdivisions in the unincorporated area. In order to deal with this perceived, pressure the County will encourage clustering of building eligibilities per the Density Zoning Ordinance. The clustering of building eligibilities/single family residences will promote sustainability by preserving tillable farm ground.”

This is important to note because a key component of EMS day-to-day workload is driven by population density. As Minnehaha County’s population density grows, so too will the daily demand for Emergency Medical Services.

The following figures illustrate the location of all EMS calls in 2015 and 2016.
Figure 14: 2015 EMS Incident Heat Map

Figure 15: 2016 EMS Incident Heat Map
In order to determine baseline operational performance, fractile response time performance was analyzed for each agency from January 2015 through December 2016. The figures below illustrate at what minute the each agency performs at the 90th percentile for 2015 and 2016.

**Figure 16: 2015 Response Time Performance by Agency**

<table>
<thead>
<tr>
<th>Agency</th>
<th>Response Time @ 90th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dell Rapids</td>
<td>16:57</td>
</tr>
<tr>
<td>Garretson</td>
<td>21:48</td>
</tr>
<tr>
<td>Humboldt</td>
<td>20:57</td>
</tr>
<tr>
<td>Med-Star</td>
<td>14:15</td>
</tr>
</tbody>
</table>

**Figure 17: 2016 Response Time Performance by Agency**

<table>
<thead>
<tr>
<th>Agency</th>
<th>Response Time @ 90th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dell Rapids</td>
<td>19:42</td>
</tr>
<tr>
<td>Garretson</td>
<td>19:06</td>
</tr>
<tr>
<td>Humboldt</td>
<td>22:51</td>
</tr>
<tr>
<td>Med-Star</td>
<td>15:39</td>
</tr>
</tbody>
</table>

The Minnehaha data analysis revealed response times that are slightly longer than those noted in the section below which outline typical response times for rural counties similar to Minnehaha. They are not far outside the target. This represents an opportunity for the County to facilitate improved individual agency times by providing feedback on a monthly basis.

In the past year, the providers made some modifications to zones that were accepted by the County. After identifying the geographic and temporal distribution of calls within the EMS system there does not appear to be a need to change or consolidate the response zones currently in use.

**Determining Appropriate Response Times**

EMS Systems once operational and routinely validated from a clinical perspective, establish density based response times with varying levels of response based on the prospective priority assigned at dispatch such as life-threatening responses, non-life-threatening responses and non-life threatening/non-urgent responses. Local governments customarily set response time standards contingent on operational, clinical and political factors. Urban areas typically utilize 8 minutes, 59 seconds at the 90th percentile for life-threatening emergencies; 11 minutes, 59 seconds at the 90th percentile for non-life-threatening emergencies and 14 minutes, 59 seconds for non-life-threatening/non-urgent responses. In rural areas similar to majority of Minnehaha County typical response time criteria would be set between 14:59 at the ninetieth percentile for life threatening
emergencies. The County should consider establishing density based response times to optimize the resources in the EMS System. For example, given the higher density of calls in the City of Brandon, the County and City could reasonably expect a lower response time than in Jasper.

Common practice is to establish response time performance requirements in low call density areas three to four minutes longer than those in urban areas. Additional elements to consider are agency capacities such as staffing levels and level of service capabilities. The National Fire Protection Association Standard 1720: “standard for effective organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by volunteer and combination fire departments to protect citizens and the occupational safety and health of fire department employees” organizes response time standards based on the density of the coverage area. The Standard also addresses functions and outcomes of fire department emergency service delivery, response capabilities and resources and contains minimum requirements for managing resources and systems.¹³

Figure 18: NFPA 1720 Response Time Objectives

<table>
<thead>
<tr>
<th>Demand Zone²</th>
<th>Demographics</th>
<th>Minimum Staff to Respond³</th>
<th>Response Time (minutes)⁴</th>
<th>Meets Objective (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban area</td>
<td>&gt;1000 people/m²</td>
<td>15</td>
<td>9</td>
<td>90</td>
</tr>
<tr>
<td>Suburban area</td>
<td>500–1000 people/m²</td>
<td>10</td>
<td>10</td>
<td>80</td>
</tr>
<tr>
<td>Rural area</td>
<td>&lt;500 people/m²</td>
<td>6</td>
<td>14</td>
<td>80</td>
</tr>
<tr>
<td>Remote area</td>
<td>Travel distance ≥ 8 mi</td>
<td>4</td>
<td>Directly dependent on travel distance</td>
<td>90</td>
</tr>
<tr>
<td>Special risks</td>
<td>Determined by AHJ</td>
<td>Determined by AHJ based on risk</td>
<td>Determined by AHJ</td>
<td>90</td>
</tr>
</tbody>
</table>


Establishing response time performance requirements requires taking into consideration the appropriate response performance with the cost of providing appropriate service levels. Additionally, the expectations of the citizens in the community must also be considered. In rural areas, the amount of calls per square mile is usually very low, this results in high costs for ambulance agencies to provide resources that will handle a low number of calls, simply put – the supply often does not meet the demand. Due to this dynamic, citizens in rural areas are often unhappy with response times. It is imperative that community leaders engage the public and discuss this dynamic in areas that are considering adjusting their EMS System.
ENHANCEMENT OPPORTUNITIES

7. Establish fractile (90th percentile compliance) response time requirements for life-threatening, non-life-threatening and non-life-threatening/non-urgent responses; potentially requiring more stringent response times in higher density areas (e.g. Brandon).

8. Consider implementing a real time monitoring system that enables key leadership the ability to monitor and evaluate system performance and initiate adjustments when necessary. At a minimum the response times of each agency need to be provided each month to both the County and the Agency.
MEDICAL ACCOUNTABILITY

Medical Accountability Benchmarks

- Single point of physician medical direction for entire system.
- Written agreement (job description) for medical direction exists.
- Specialized Medical Director training/certifications.
- Physician is involved in establishing local care standards that reflect current national standards of practice.
- Proactive, interactive and retroactive medical direction is facilitated by the activities of the Medical Director.
- PCR data transparency facilitates MD review.
- Clinical education effectiveness efficiency.

OBSERVATIONS AND FINDINGS

Most agencies provide services at the ALS level and occasionally provide service at the BLS level for second assignments or when staffing is limited. There is not a single point of medical direction for the system. Currently each ambulance provider operates under the license of a licensed physician, however each provider has their own Medical Director, all of which are unpaid volunteers functioning at differing levels.

As presented previously, The County employs a Quality Assurance Director for Ambulance Services. Jeff Luther, M.D. currently holds that designation and has since 2002 when the County implemented a Surface Ambulance Ordinance which created the current QA process.

Dr. Luther is responsible for reviewing 25% of each EMS provider’s monthly non-emergency, Basic Life Support ambulance runs in addition to holding approval authority for medical procedures and medical protocols adopted by each EMS provider, and establishing and maintaining additional training for ambulance personnel when appropriate. Dr. Luther, while not technically the medical director for the system is responsible for some levels of medical oversight (e.g. approves emergency dispatch protocols and participates in some QI activities for the communications center. Generally, the lack of focused medical control and leadership is problematic.

Dr. Luther desires to have a higher level of responsibility with regards to clinical oversight of the system. His approach over the past several years has revolved around reviewing the patient care reports that are submitted to him from the EMS agencies. The level of involvement and engagement of medical direction in EMS systems varies throughout the country, however, in Minnehaha since there is no single point of medical direction it’s extremely difficult to determine:

- EMS provider clinical competency
- EMS provider medical decision making competency
- EMS provider transport modality and destination selection competency
• Effectiveness of written patient treatment guidelines

The role of the medical director in a modern EMS system is defined by the American Board of Emergency Medicine as follows:

As part of their clinical practice, EMS physicians are responsible for medical oversight of the whole EMS team. EMS physician practice combines direct patient care in the field with supervisory and other functions that ensure an effectively functioning response system. This includes daily direct medical decision-making and control of care provided by EMS personnel. Some examples of this include verbal medical treatment orders based on clinical information provided by allied health personnel, transport modality and destination appropriate patient care decisions, developing and deploying written patient treatment guidelines for the EMS team, and ensuring procedural competency training of allied health personnel. EMS physicians also lead quality management activities relating to medical care delivered by the entire EMS system. 14

An electronic patient care reporting (ePCR) system is a documentation and database management software. These systems establish a standardized approach to document response and treatment information and specialize in storing, reviewing and retrieving information. Further, they serve as the repository for an agency’s clinical and operational data. There is no single, County-wide ePCR system in Minnehaha County. Dell Rapids Community Ambulance, Garretson Community Ambulance, Humboldt Fire & Ambulance Service, and Med-Star Paramedic Ambulance all use Med-Media as their ePCR system, while Jasper Community Ambulance uses MNStar and Paramedics Plus uses Zoll RescueNet.

Each agency conducts their own internal quality reviews on clinical and operational performance based on elements they deem appropriate. Dr. Luther reviews twenty-five (25%) percent of all Basic Life Support (BLS) runs, however, as presented previously, the majority of calls in Minnehaha County receive a paramedic-level response which is categorized as an Advanced Life-Support (ALS) run. The end result is that the majority of calls in Minnehaha County are not reviewed. Additionally, the collection, assembly and review of the runs is inefficient and labor intensive. The current practice involves each agency printing a paper copy of the ambulance runs, redacting patient information with a permanent marker, then subsequently packaging and shipping the copies to Dr. Luther for review. Once Dr. Luther receives the copies, he reviews them, however, there is not a mechanism in place for frequent and proactive engagement with the agency or providers that performed the run. The American College of Emergency Physicians weighs in on the importance of frequent and active clinical review, stating: “each EMS system should ensure that the medical director has authority over patient care, authority to limit immediately the patient care activities of those who deviate from established standards or do not meet training standards and the responsibility and authority to develop and implement medical policies and procedures.”15 The current practice makes it extremely difficult for Dr. Luther to focus on clinical

15 Medical Direction of Emergency Medical Services  https://www.acep.org/Clinical—Practice-Management/Medical-Direction-of-Emergency-Medical-Services/
performance monitoring, feedback and provider education. Additionally, at interview, the response from agency representatives indicated that they had little or no feedback from Dr. Luther regarding their clinical performance.

Critical to the success of an EMS system is the ability to fully utilize clinical performance data from technology and information systems to improve prehospital care and patient outcomes. Improvements can only be made if data such as that outlined below is available in a timely and reliable manner. Best practice EMS systems provide the following data that is regularly reviewed and reported to the community:

- Response times to emergency calls for each provider, aggregated Countywide, and often broken down into “equity zones” in larger systems
- Cardiac arrest survival per the industry standard “Utstein template”
- Time from 911 call to “balloon inflation” at the cardiac percutaneous coronary intervention (PCI or “cardiac cath lab”) laboratory
- Scene intervals for patients meeting the American College of Surgeons criteria for transport to a trauma center
- Airway management success rates
- Critical vehicle and equipment failures
- Response vehicle crash rates per 100,000 miles
- Rapid Sequence Induction (RSI) utilization or other advanced airway application
- Stroke center – time from onset to therapy
- Appropriate use of air-medical services

Preserving a focus on the reason for the delivery of EMS services to improve patient outcomes is vital. Measuring the clinical impact a service has on the community is a key element of this focus. While clinical impact in Minnehaha County is measured, the data utilized for measurement is incomplete and there is a lack of proactive and interactive engagement with caregivers after review. Additionally, only recently was performance data made available to County stakeholders following concerns were raised within the County Commission regarding the County’s Quality Assurance Director for Ambulance Services. Generally, the local quality of care review practices (e.g. BLS with ALS not centrally reviewed) in Minnehaha County do not reflect the current national EMS standards of practice.

**ENHANCEMENT OPPORTUNITIES**

9. A single Medical Director, should be responsible for all EMS clinical activity, as well as the operation and revision of the EMS system from initial patient access to turnover of patient care.
10. The medical director should be encouraged to successfully complete the medical director’s course offered by the National Association of EMS Physicians or alternatively be sub-speciality certified as an EMS physician.
11. Provide interactive and proactive clinical feedback in a progressive manner to create increased accountability among all caregivers (call takers, dispatchers, first responders, EMTs and paramedics).
12. The medical director or his/her designee should regularly interact with caregivers through continued education, ride-alongs, and ePCR review feedback.

13. Consider implementing a dashboard portal system that enables the medical director the ability to conduct ePCR review, monitor provider clinical performance, conduct quality assurance (QA), continuous quality improvement (CQI) and initiate clinical performance improvement measures when necessary.

14. Clinical outcomes of the EMS system should routinely be provided to system stakeholders.

15. Consider working more closely with area hospitals, contracting with REMSA or existing individual service medical directors to provide expanded engagement of the medical community on a regular basis.
CUSTOMER AND COMMUNITY ACCOUNTABILITY

Customer and Community Accountability Benchmarks
- Legislative authorities to provide service and written service agreements are in place.
- Units and crews have a professional appearance.
- Formal mechanisms exist to address patient and community concerns.
- Independent measurement and reporting system performance are utilized.
- Internal customer issues are routinely addressed.

OBSERVATIONS AND FINDINGS

There is legislative authority for Minnehaha County to fully regulate or directly operate an emergency ambulance service and to license or franchise non-emergency services that operate in the County.

The Ordinance currently in place does not meet the needs of the community. Sections of the Ordinance are antiquated and in need of revision, for example, Section 1-5 Quality Assurance Required, defines the QA measures established by the County. As presented previously, the QA requirements do not reflect the level of service often provided and the percentage of calls reviewed is below industry standard when compared with like systems. Additionally, the Ordinance has defined response and level of service language that is not currently being measured for compliance. Section 1-7, Number 3. states: “Response and Level of Service: Requests for ground ambulance service shall be acknowledged within sixty (60) seconds of notification of the request for at least ninety per cent (90%) of the calls for service, with a maximum call acknowledged to time en-route of no more than ten (10) minutes from notification, as evidenced by having a fully staffed and stocked ambulance en-route within that timeframe, unless the request is for a scheduled transfer for which alternate requirements are specified by the calling party.”

Units we observed during the site work appeared to be clean and in good working order.

There is not a formally recognized system that is utilized to address patient, citizen or interagency concerns. Generally, the system is dependent upon agencies to self-report issues. At interview, multiple agency representatives expressed interest in a systematic approach to documenting, investigating and addressing complaints. A typical system would define how service inquiries from any source (patient, hospital ED, first responder, citizen) are to be documented and reviewed along with specific timeframes for the completion of the review or escalation to a higher level. The lack of an organized system to address patient, citizen and interagency concerns is a major system deficit.

Enhancement Opportunities

16. Develop comprehensive performance based agreements with the EMS agencies to require defined performances (e.g. response times, 911 notification/to be dispatched, and minimum availability) and penalties for poor or non-performance.
17. Compose and provide an internal monthly report of first responder and ambulance response times to all key system stakeholders.

18. Implement a formal mechanism where patient, citizen and interagency concerns and complaints can be documented and reviewed in a timely and efficient manner.
PREVENTION AND COMMUNITY EDUCATION

**Prevention and Community Education Benchmarks**
- System personnel provide positive role models.
- Programs are targeted to “at risk” populations
- Formal and effective programs with defined goals exist.
- Targeted objectives are measured and met.

**OBSERVATIONS AND FINDINGS**

The number of hours the providers in the EMS system dedicate to community education and public awareness is not reported by the EMS system. Each agency conducts public outreach activities; however, they are not coordinated in any fashion with the other system providers.

Expanding the capabilities of community members through community education has a positive impact in patient outcomes. School and community CPR training, publication of public access automated external defibrillator (AED) locations, citizen-bystander 9-1-1 activation and community education on prevention and recognition of cardiac emergencies are low cost, high return leverage points that demonstrate improved outcomes, especially in Sudden Cardiac Arrest (SCA).

There are several opportunities for system participants to work closely together and increase public education and awareness. These can be accomplished through local outreach programs and allied organizations such as American Heart Association, American Stroke Association, and Red Cross.

**ENHANCEMENT OPPORTUNITIES**

19. Develop a program and identify available resources to improve community education and awareness of the EMS system.
20. Develop and implement focused prevention efforts through enhancing public involvement in CPR, SCA recognition, stroke recognition and disease management.
21. Compose and provide a quarterly report to the community that demonstrates current activities and accomplishments of the EMS system as well as any public education initiatives that are being offered.
22. Work to partner with the Minnehaha County Sheriff’s Office on public outreach initiatives and continuing education opportunities.
ORGANIZATIONAL STRUCTURE AND LEADERSHIP

Organizational Structure and Leadership Benchmarks

- A local agency is identified and coordinates system activities.
- Organizational governance, structure, and relationships are well defined.
- Human resources are developed and otherwise valued.
- Business planning and measurement processes are defined and utilized.
- Operational and clinical data guides the decision making process.
- A structured performance/quality improvement (QI) system exists, addressing administrative as well as clinical issues.

OBSERVATIONS AND FINDINGS

COORDINATION AND OVERSIGHT

The County is the lead agency for the provision of Emergency Medical Services. It operates the Office of Emergency Management, headed by a Director. In August of 2016 the Director became the de facto oversight of the providers in the EMS system, however his role is not well-defined.

The Office of Emergency Management conducts hazard analysis and develops and updates plans for emergency preparedness, response, recovery and hazard mitigation. The Office establishes, implements, maintains, tests and evaluates operational systems for responding to emergencies. The Office is responsible for coordinating response and recovery activities of departments and organizations involved in providing emergency services, and it is also in charge of a large number of volunteers who are used in providing these services. Additionally, the Office is the principle source of information on emergency management, which includes the identification of training needs and developing and providing training programs.

The manner in which the Office of Emergency Management’s role is currently constructed does not give the Office the authority to require the various operating entities in Minnehaha County to function as an EMS system. Essential regulatory tasks, such as measuring, evaluating and reporting EMS system performance, investigating concerns and complaints from citizens, caregivers and agencies, and ensuring optimal prehospital care delivery cannot be addressed in a proactive or organized manner. As the Office of Emergency Management’s role evolves, (particularly with items outlined in the enhancement opportunities section) eventually there will be a “tipping point” in which additional personnel may be required to handle additional duties and responsibilities.

The Code of County Ordinances, Chapter 31, provides legal authority for the EMS system. However, the ordinance does not outline the Office of Emergency Management’s role in oversight of the EMS system, nor does it define the role of an EMS liaison. Currently the role of EMS liaison is held by a County Commissioner, the position is appointed by the Commission Chair on an annual basis.
The Consultant Team had the opportunity to interview several County Commissioners. Those interviewed indicated a desire for the EMS system to provide optimal care delivery and deliver good value to the citizens for the Subsidy invested. Further, they reported the need to identify areas of the system that could be enhanced or adjusted to improve the value of the services being provided, increase financial stability and better position the EMS system for the future.

**HUMAN RESOURCES**

**The Future of volunteer providers in Minnehaha County** - For over four decades, Minnehaha County citizens have depended on dedicated volunteer agencies to provide Emergency Medical Services. Since the early 2000’s volunteer agencies have had difficulty attracting, recruiting, and retaining volunteers to meet calls for service. An increase in training and education requirements, rising cost of education, decrease in citizens who both live and work locally and an increase in less flexible employers have all contributed to the decline. Additionally, time away from family is also a contributing factor. A study conducted by the Iowa Emergency Medical Services Association found that volunteer providers spend an average of 30.56 hours fundraising annually and an average of 344.25 hours engaged as a volunteer. Community leaders should engage the public as the volunteer population continues to decline and current volunteers retire. In an effort to curb the decrease in volunteers, states other (e.g., Alaska, Connecticut, Pennsylvania, and Nebraska) have started offering financial incentives in the form of tax credits, for volunteer first responders. These states have created tax incentives as a token of appreciation for volunteers that provide extensive levels of service for their squads. This may require state legislative authority but is an area that could be explored as a means to both retain and recruit volunteers in Minnehaha County.

**BUSINESS PLANNING AND MEASUREMENT**

Once acceptable response time standards are determined and established (Enhancement Opportunity #5), each agency needs to develop a business plan with objectives and measurable processes. The plan should be matched with an organizational quality improvement plan.

**Organizational Quality Improvement Processes**

One of the most difficult tasks in an EMS system is providing and sustaining high quality service. Caregiver competency and a system that supports such, ultimately drives the delivery of high quality patient care. Nationwide, EMS agency service leaders are encouraged to integrate continuous quality improvement (CQI) practices into the clinical, operational and administrative sectors of the business.

Developing a comprehensive QI plan allows an EMS agency the ability to design a strategy that addresses the unique elements present in an EMS system. Further, it creates an environment that makes quality improvement practices a seamless part of the culture of the system. Quality improvement

---

16 IEMSA Legislative EMS Study Committee
http://www.iemsa.net/pdfs/EMS_study_committee/IHNRH014.PDF
goals, methodology, key indicators and critical success factors should be clearly defined in the plan. Indicators should be consistently monitored until improvement has occurred and the goal achieved in a timely manner. Responsibility for the QI plan should be clearly outlined. The medical director should be involved in the design of the plan and any evaluation and revision of the plan. Additionally, the medical director should receive regular status updates. Key leadership should review and update the plan annually.

The local QI plan should include statistical indicators monitored monthly, including:

- Customer Satisfaction
- Deviation from Medical Protocols
- Fractile Response Times
- High Risk Procedures
- Productivity
- Unit Hour Utilization (UhU)
- Time on Task
- Time on Scene
- Pain Management
- Patient Outcomes
- Patient Signature Compliance
- Regulatory Compliance
- Vehicle Preventive Maintenance

Additional QI measures deemed necessary can be added to the plan at any time.
ENHANCEMENT OPPORTUNITIES

23. Amend the Code of County Ordinances Chapter 31, such that it defines the roles, essential duties and responsibilities of staff members tasked with system oversight.

24. Fortify the County’s role as the lead agency and assure that departments and associated administrative staff responsible for contract enforcement are empowered to carry out their duties.

25. Develop a program and identify resources aimed at recruiting, training and retaining volunteers. Explore the possibility of offering financial incentives to volunteers in an effort to retain current staff and recruit new personnel.

26. Support ambulance and first responder agencies in developing short and long term operational plans.

27. Implement a Continuous Quality Improvement Plan that will position the EMS system to provide high quality care now and in the future.
ENSURING OPTIMAL SYSTEM VALUE

Ensuring Optimal System Value Benchmarks

- Clinical and customer satisfaction outcomes are enhanced by the EMS system.
- Unit Hour Utilization is measured and hours are deployed in a manner to achieve efficiency and effectiveness.
- Cost per unit hour and transport document good value.
- Financial systems accurately reflect system revenues and both direct and indirect costs.
- Revenues are collected professionally and in compliance with federal regulations.
- Local tax subsidies are minimized.

OBSERVATIONS AND FINDINGS

Regardless of the initial design, EMS systems must adapt to changes in the healthcare delivery environment. Agility and flexibility are key elements in guiding change in the future and EMS systems must remain prepared to implement changes to keep abreast of evolving standards of care. Quality processes that support the determination of the efficacy of the treatment modalities and patient satisfaction are becoming increasingly common in EMS. Tracer conditions such as cardiac arrest and trauma have not been sufficiently quantified to demonstrably document the benefits of pre-hospital service. Pain relief and customer satisfaction are not measured within the EMS system.

Building short and long term operational plans (Enhancement Opportunity #16) that are tied to a Quality Improvement Process (Enhancement Opportunity #27) the County’s response time standards (Enhancement Opportunity #16) and developing and implementing focused community education efforts (Enhancement Opportunity #21) are key areas that the EMS agencies in Minnehaha County can show value.

Showing value is particularly important when evaluating the cost of providing ambulance coverage to the respective communities. The goal is to provide high-quality and cost-effective service that meets the needs and expectations of the community.

The County currently invests approximately $181,000 annually as subsidies for providers in addition to the provision of the BLS quality improvement activities of Dr. Luther and the communications services provided by Metro Communications for the system.

There were no implementable options we identified that could maintain the quality of care and reduce the level of subsidy provided.
ENHANCEMENT OPPORTUNITIES

28. Implement a plan to objectively reevaluate EMS care delivery and implementation progress at regular intervals.

THE WAY FORWARD

We have identified a number of enhancement opportunities to strengthen the EMS program in Minnehaha County. Overall, there are no easy answers to the issues present in this system.

As part of the project scope the County requested we detail future funding and operational considerations based upon the changes contemplated under the Affordable Care Act. Changes in healthcare delivery models are occurring almost daily and definitive long term implications of healthcare reform have not been realized and cannot be fully predicted at this time. However, a reasonable expectation is that federal funding will continue to decrease and value based purchasing processes will be used to change the current reimbursement structure that pays for ambulance transport. EMS systems nationwide are expanding the roles of caregivers in collaboration with healthcare systems to provide alternative solutions matching individual healthcare needs with the most appropriate and affordable services. Communities that are unable to document clinically effective and operationally efficient EMS systems will be forced to provide additional local subsidies to make up the funding gap.

Healthcare reform has caused an upheaval in the way Emergency Medical Services has been provided for the past 40 years. The Institute of Healthcare Improvement’s (IHI) Triple Aim is to:
- Improve the patient experience of care, including quality and satisfaction.
- Improve the health of populations.
- Reduce the per capita cost of health care.

Emergency Medical Services can provide an integrated menu of emergency and preventative services that meet the particular need of their communities. The value EMS brings to the transforming health care system includes:
- EMS is fully mobile and able to address patient needs 24 hours a day, seven days a week, and 365 days a year.
- EMS is an expected, respected, and welcomed source of medical assessment and care in people’s homes and elsewhere in the community.
- EMS can provide highly reliable, clinically sophisticated and medically integrated patient assessments and interventions during calls to 9-1-1 and in response to emergency, urgent or unscheduled episodes of illness or injury.

The detailed enhancement opportunities address current system needs to improve day-to-day operations as well as start the framework for a data-driven, evidence-based and quality focused collaboration to take advantage of service opportunities that are imminent.
The County should reasonably expect that the additional cost of the enhancements recommended herein will add $50,000 to its annual cost of subsidy.

Figure 20: EMS System Future Framework

The figure above illustrates a regulatory and contractual framework that could be used to operationalize the options outlined below.

Key failsafe mechanisms should be incorporated into any provider agreements. These include:

- Detailed performance requirements and compliance with financial incentives/disincentives.
- Development of an adequate EMS reserve fund to subsidize or offset costs for another provider should any one certificate holder fail.
- 3-way (step-in) lease on vehicles and technology infrastructure acquired with county funds should be considered.
<table>
<thead>
<tr>
<th>Enhancement Opportunity</th>
<th>Cost</th>
<th>Priority (Short/Medium/Long-Term)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All ambulances and other EMS vehicles should utilize automated vehicle location / in-vehicle navigation (AVL/IVN), which provides location and travel information to the vehicle and Metro Communications Agency.</td>
<td>CAP-X item 12 units $48K/5 years = $10k / year</td>
<td>Medium to Long-Term</td>
</tr>
<tr>
<td>2. Change the procedure and require the staffing/capabilities changes be consistently reported to Metro so that back-up ALS resources can be immediately dispatched should the situation require that level of service</td>
<td>Procedural</td>
<td>Short-Term</td>
</tr>
<tr>
<td>3. The CAD system should electronically interface with the electronic patient care reporting (ePCR) system used by all agencies providing emergency medical service in Minnehaha County.</td>
<td>CAP-X Item $50K/10 years = $5k per year</td>
<td>Long-Term</td>
</tr>
<tr>
<td>4. Champion expansion and clinical development of medical first responder services throughout Minnehaha County. The County should assure that first response is available for all high-priority EMS calls.</td>
<td>Procedural</td>
<td>Medium-Term</td>
</tr>
<tr>
<td>5. Consider expansion of the County Sheriff’s role in medical first response.</td>
<td>Procedural</td>
<td>Long-Term</td>
</tr>
<tr>
<td>6. All firefighting personnel should be trained to an Emergency Medical Responder certification level, assuring adequately trained personnel arrive on the scene and properly care for an emergency. The County should assist all first responders in obtaining their EMR certification.</td>
<td>Procedural</td>
<td>Long-Term</td>
</tr>
<tr>
<td>7. Establish fractile (90th percentile compliance) response time requirements for life-threatening, non-life-threatening and non-life-threatening/non-urgent responses; potentially requiring more stringent response times in higher density areas (e.g. Brandon).</td>
<td>Procedural</td>
<td>Short-Term</td>
</tr>
<tr>
<td>8. Consider implementing a real time monitoring system that enables key leadership the ability to monitor and evaluate system performance and initiate adjustments when necessary. At a minimum, the response times of each agency need to be provided each month to both the County and the Agency.</td>
<td>No cost noted for minimum by utilizing Metro for reporting response time information</td>
<td>Medium-Term</td>
</tr>
<tr>
<td>9. A single Medical Director, should be responsible for all EMS clinical activity, as well as the operation and revision of the EMS system from initial patient access to turnover of patient care.</td>
<td>Additional salary with Job duties change = $15k</td>
<td>Medium-Term</td>
</tr>
<tr>
<td>10. The medical director should be encouraged to successfully complete the medical director’s course offered by the National Association of EMS Physicians or alternatively be sub-specialty certified as an EMS physician.</td>
<td>Includes travel and tuition @ $2,500 one-time fee.</td>
<td>Medium-Term</td>
</tr>
</tbody>
</table>

17 Generally short-term is considered in the current or next fiscal cycle; medium-term is considered within the next two-three year planning horizon and long term typically requires more than two to three years to implement.
<table>
<thead>
<tr>
<th>Enhancement Opportunity</th>
<th>Cost</th>
<th>Priority (Short/Medium/Long-Term)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Provide interactive and proactive clinical feedback in a progressive manner to create increased accountability among all caregivers (call takers, dispatchers, first responders, EMTs and paramedics).</td>
<td>Procedural</td>
<td>Short-Term</td>
</tr>
<tr>
<td>12. The medical director or his/her designee should regularly interact with caregivers through continued education, ride-alongs, and ePCR review feedback.</td>
<td>Procedural</td>
<td>Short-Term</td>
</tr>
<tr>
<td>13. Consider implementing a dashboard portal system that enables the medical director the ability to conduct ePCR review, monitor provider clinical performance, conduct quality assurance (QA), continuous quality improvement (CQI) and initiate clinical performance improvement measures when necessary.</td>
<td>Procedural and Training with the Medical Director</td>
<td>Short-Term</td>
</tr>
<tr>
<td>14. Clinical outcomes of the EMS system should routinely be provided to system stakeholders.</td>
<td>Procedural</td>
<td>Short-Term</td>
</tr>
<tr>
<td>15. Consider working more closely with area hospitals, contracting with REMSA or existing individual service medical directors to provide expanded engagement of the medical community on a regular basis.</td>
<td>If contracted, could result in a reduction in MD costs</td>
<td>Long-Term</td>
</tr>
<tr>
<td>16. Develop comprehensive performance based agreements with the EMS agencies to require defined performances (e.g. response times, 911 notification/to be dispatched, and minimum availability) and penalties for poor or non-performance.</td>
<td>Procedural</td>
<td>Short-Term</td>
</tr>
<tr>
<td>17. Compose and provide an internal monthly report of first responder and ambulance response times to all key system stakeholders.</td>
<td>Procedural</td>
<td>Short-Term</td>
</tr>
<tr>
<td>18. Implement a formal mechanism where patient, citizen and interagency concerns and complaints can be documented and reviewed in a timely and efficient manner.</td>
<td>Procedural</td>
<td>Short-Term</td>
</tr>
<tr>
<td>19. Develop a program and identify available resources to improve community education and awareness of the EMS system.</td>
<td>Based on the County’s goal</td>
<td>Long-Term</td>
</tr>
<tr>
<td>20. Develop and implement focused prevention efforts through enhancing public involvement in CPR, SCA recognition, stroke recognition and disease management.</td>
<td>Provider initiative</td>
<td>Long-Term</td>
</tr>
<tr>
<td>21. Compose and provide a quarterly report to the community that demonstrates current activities and accomplishments of the EMS system as well as any public education initiatives that are being offered.</td>
<td>Procedural</td>
<td>Medium-Term</td>
</tr>
<tr>
<td>22. Work to partner with the Minnehaha County Sheriff’s Office on public outreach initiatives and continuing education opportunities.</td>
<td>Procedural</td>
<td>Long-Term</td>
</tr>
<tr>
<td>23. Amend the Code of County Ordinances Chapter 31, such that it defines the roles, essential duties and responsibilities of staff members tasked with system oversight.</td>
<td>Procedural</td>
<td>Short-Term</td>
</tr>
<tr>
<td>24. Fortify the County’s role as the lead agency and assure that departments and associated administrative staff responsible for contract enforcement are empowered to carry out their duties.</td>
<td>Procedural</td>
<td>Short-Term</td>
</tr>
<tr>
<td>Enhancement Opportunity</td>
<td>Cost</td>
<td>Priority (Short/Medium/Long-Term)</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>25. Develop a program and identify resources aimed at recruiting, training and retaining volunteers. Explore the possibility of offering financial incentives to volunteers in an effort to retain current staff and recruit new personnel.</td>
<td>Procedural</td>
<td>Medium-Term</td>
</tr>
<tr>
<td>26. Support ambulance and first responder agencies in developing short and long term operational plans.</td>
<td>Procedural</td>
<td>Short Term</td>
</tr>
<tr>
<td>27. Implement a Continuous Quality Improvement Plan that will position the EMS system to provide high quality care now and in the future.</td>
<td>Procedural</td>
<td>Medium-Term</td>
</tr>
<tr>
<td>28. Implement a plan to objectively reevaluate EMS care delivery and implementation progress at regular intervals.</td>
<td>Procedural</td>
<td>Long-Term</td>
</tr>
</tbody>
</table>
## SYSTEM COMPONENTS BENCHMARKS OVERVIEW

**KEY:**  
D = Documented,  
ND = Not Documented  
PD = Partially Documented

### Communications Benchmarks

| Public access through a single number, preferably enhanced 911 | D | Central communications center utilized |
| Coordinated PSAPs exist for the system | D | NET uses 7 digit |
| Certified personnel provide pre-arrival instructions and priority dispatching (EMD) and this function is fully medically supervised | D | Communications center is ACE accredited and staff are well supervised |
| Data collection which allows for key service elements to be analyzed | PD | Data collection can be achieved but capabilities are limited |
| Technology supports interface between 911, dispatching & administrative processes | ND | No use of AVL  
No automatic interface between 911 and ePCR |
| Radio linkages between dispatch, field units & medical facilities provide adequate coverage and facilitate communications | D | No concerns expressed by providers |

### Medical First Response Benchmarks

| First responders are part of a coordinated response system and medically supervised by a single system medical director | PD | Little direct physician oversight. Some areas are more coordinated than others. |
| Defined response time standards exist for first responders | ND | None of the first responder departments have response time standards |
| First response agencies report/meet fractile response times. | ND | None of the first responder departments have response time standards |
| AED capabilities on all first line apparatus | D |  |
| Smooth transition of care is achieved | D | Care transition is non problematic |

### Medical Transportation Benchmarks

| Defined response time standards exist | PD | Response time standards exist but need revision |
| Agency reports/meets fractile response times | ND | No fractile reporting utilized by any EMS agency |
| Units meet staffing and equipment requirements | D | Agencies rely heavily on volunteers but meet SD staffing requirements. 
No equipment issues noted. |
| Resources are efficiently and effectively deployed | ND | Resources are based out of stations within their agency’s designated territory |
| There is a smooth integration of first response, air, ground and hospital services | D | No issues noted |
| Develop/maintain coordinated disaster plans | D | County EMA develops/maintains |
## Medical Accountability Benchmarks

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single point of physician medical direction for entire system</td>
<td>ND Each agency has their own volunteer medical director.</td>
</tr>
<tr>
<td>Written agreement (job description) for medical direction exists</td>
<td>ND Job description does not exist</td>
</tr>
<tr>
<td>Specialized medical director training/certification</td>
<td>ND The medical directors for each agency function at various levels</td>
</tr>
<tr>
<td>Physician is effective in establishing local care standards that reflect current national standards of practice</td>
<td>ND Care standards are reported to vary widely by agency and provider</td>
</tr>
<tr>
<td>Proactive, interactive and retroactive medical direction is facilitated by the activities of the medical director</td>
<td>ND Lack of MD engagement and feedback named as a concern by providers</td>
</tr>
<tr>
<td>PCR/QI data transparency for MD review</td>
<td>ND MD relies on agencies to send him paper charts for review.</td>
</tr>
</tbody>
</table>

## Customer/Community Accountability Benchmarks

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislative authority to provide service and written service agreements are in place</td>
<td>PD Statutory authority exists</td>
</tr>
<tr>
<td>Units and crews have a professional appearance</td>
<td>PD No complaints noted regarding professionalism but appearance varies by agency.</td>
</tr>
<tr>
<td>Formal mechanisms exist to address patient and community concerns</td>
<td>ND Formal system-wide mechanism to document patient, community or caregiver issues does not exist</td>
</tr>
<tr>
<td>Independent measurement and reporting of system performance are utilized</td>
<td>ND No independent measurement or reporting of system performance</td>
</tr>
<tr>
<td>Internal customer issues are routinely addressed</td>
<td>PD Self-reporting based, no formal tracking mechanism</td>
</tr>
</tbody>
</table>

## Prevention & Community Education Benchmarks

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>System personnel provide positive role models</td>
<td>PD System providers presented themselves as positive role models</td>
</tr>
<tr>
<td>Programs are targeted to “at risk” populations</td>
<td>ND Not at this time</td>
</tr>
<tr>
<td>Formal and effective programs with defined goals exist</td>
<td>ND Formal programs with defined goals do not exist</td>
</tr>
<tr>
<td>Targeted objectives are measured and met</td>
<td>ND No objectives established currently</td>
</tr>
</tbody>
</table>
**Ensuring Optimal System Value Benchmarks**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical outcomes are enhanced by the system</td>
<td>ND</td>
<td>Outcomes not currently measured</td>
</tr>
<tr>
<td>Amb Response Utilization and transport Utilization (UHU) is measured and hours are deployed in a manner to achieve efficiency and effectiveness</td>
<td>ND</td>
<td>System-wide agencies do not measure whether or not resources are deployed efficiently</td>
</tr>
<tr>
<td>Ambulance cost per unit hour &amp; transport document good value</td>
<td>ND</td>
<td>Not transparent – does not represent good value</td>
</tr>
<tr>
<td>Service agreements represent good value</td>
<td>ND</td>
<td>Subsidy is provided without defined performance measures</td>
</tr>
<tr>
<td>Non-emergency ambulance effective &amp; efficient</td>
<td>PD</td>
<td>No issues noted</td>
</tr>
<tr>
<td>Non-Ambulance but medically necessary (MAV) services are effective and efficient</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>System facilitates appropriate medical access</td>
<td>D</td>
<td>No issues noted</td>
</tr>
<tr>
<td>Financial systems accurately reflect system revenues and both direct and indirect costs</td>
<td>ND</td>
<td>Financial systems vary by agency</td>
</tr>
<tr>
<td>Revenues are collected professionally and in compliance with regulations</td>
<td>ND</td>
<td>Unknown</td>
</tr>
<tr>
<td>Tax subsidies when required are minimized</td>
<td>ND</td>
<td></td>
</tr>
</tbody>
</table>

**Organizational Structure & Leadership Benchmarks**

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A lead agency is identified and coordinates system activities</td>
<td>PD</td>
<td>County is the lead agency but the coordination of activities among agencies is problematic</td>
</tr>
<tr>
<td>Organizational structure and relationships are well defined</td>
<td>PD</td>
<td>Contract compliance is not measured. Relationships within individual agencies reported to be familiar in nature</td>
</tr>
<tr>
<td>Human resources are developed and otherwise valued</td>
<td>PD</td>
<td>Differs by agency</td>
</tr>
<tr>
<td>Business planning and measurement processes are defined and utilized</td>
<td>PD</td>
<td>Differs by agency</td>
</tr>
<tr>
<td>Operational and clinical data informs/guides the decision process</td>
<td>PD</td>
<td>Limited clinical and operational data makes moving towards outcome based practices difficult</td>
</tr>
<tr>
<td>A structured and effective performance based quality improvement (QI) system exists</td>
<td>ND</td>
<td>Current QI practice is not proactive or interactive and depends heavily on internal practices within each agency</td>
</tr>
</tbody>
</table>

**Summary**

<table>
<thead>
<tr>
<th>Description</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documented</td>
<td>12</td>
</tr>
<tr>
<td>Partially Documented</td>
<td>11</td>
</tr>
<tr>
<td>Not Documented</td>
<td>26</td>
</tr>
<tr>
<td>N/A</td>
<td>1</td>
</tr>
</tbody>
</table>
Attachment B

PROPOSED ORDINANCE
SECTION I: That Chapter __, Article __, of the Code of Ordinances, County of Minnehaha, and Ordinance No. MC 31-4-16 are hereby repealed in their entirety.

SECTION II: That in keeping with the legislative intent of Chapter ___ of South Dakota Statutes, the County Council recognizes that the systematic provision of emergency medical services saves lives and reduces disability associated with illness and injury and the system of care must be equally capable of assisting, treating and transporting, children, adults, and frail elderly persons. That the Minnehaha County Board of County Commissioners finds that the new Chapter ___, Article ___, is in the best interest of the public based upon the relevant facts and law presented at the public hearing and the facts and law recited in the preamble of this ordinance which are hereby enacted as the unrebutted evidentiary and legal bases for concluding the reasonableness and efficacy of the regulations contained herein. That the Board of County Commissioners further finds, based on the foregoing, that the provision in Chapter ___, Article ___ using this uniform and unified systematic approach for Licenses of public convenience and necessity sets a reasonable standard for issuance and maintenance of such Licenses for providers of effected services.

SECTION III: That a new Chapter 46, Article III, Emergency Medical and Paratransit Services of the Code of Ordinances, County of Minnehaha, is hereby created to read as follows:

Section ___. Definitions

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning.

“Advanced Life Support (ALS)” means treatment of life-threatening medical emergencies through the use of techniques such as endotracheal intubation, the administration of drugs or intravenous fluids, electrocardiographic monitoring (ECG), and cardiac defibrillation by a qualified person, pursuant to South Dakota Statutes.
“Advanced Life Support Service” means any emergency medical transport or non-transport service which uses advanced life support techniques.

“Air ambulance” means any fixed-wing or rotary-wing aircraft used for, or intended to be used for, air transportation of sick or injured persons requiring or likely to require medical attention during transport.

“Air ambulance service” means any publicly or privately owned service which operates air ambulances to transport persons requiring or likely to require medical attention during transport.

“Ambulance” means any privately or publicly owned land or water vehicle that is designed, constructed, reconstructed, maintained, equipped, or operated for, and is used for, or intended to be used for, land or water transportation of sick or injured persons requiring or likely to require medical attention during transport.

“Basic Life Support” means treatment of medical emergencies by a qualified person through the use of techniques such as patient assessment, cardiopulmonary resuscitation (CPR), splinting, obstetrical assistance, bandaging, administration of oxygen, application of medical anti-shock trousers, administration of a subcutaneous injection using a pre-measured auto-injector or epinephrine to a person suffering an anaphylactic reaction, and other techniques described in the Emergency Medical Technician Basic Training Course Curriculum of the United States Department of Transportation. The term “basic life support” also includes other techniques which have been approved and are performed under conditions specified by rules of the State of South Dakota Department of Health or Minnehaha County.

“Basic Life Support Service” means any emergency medical service which uses only basic life support techniques.
“Closest Unit Response Plan” means an agreement between neighboring jurisdictions to dispatch the closest available emergency medical services response vehicle to the scene of a medical emergency, regardless of zone boundaries.

“County Commission” means the Minnehaha County Board of County Commissioners.

“County” means all incorporated or unincorporated areas within the territorial limits of Minnehaha County, South Dakota.

“Credentialing” means the process by which the Medical Director provides authorization to any person to act as a paramedic, EMT, Dispatcher or First Responder within the County Emergency Medical Services System.

“County Emergency Medical Services System” means the system consisting of all volunteer, private and governmental Basic Life Support Services, Advanced Life Support Services, and 9-1-1 Public Safety Answering Points (PSAPs) and First Responder Agencies which utilize state certified emergency medical technicians, paramedics and Emergency Medical Dispatchers who operate under the supervision of the County Medical Director.

“Emergency Medical Condition” means a medical condition manifesting itself by acute symptoms of sufficient severity, such that the absence of immediate medical attention could reasonably be expected to result in any of the following:

1) Serious jeopardy to patient health.
2) Serious impairment to bodily functions.
3) Serious dysfunction of any bodily organ or part.
“Emergency Medical Dispatch” means the Medical Director approved system of emergency call
taking designed to dispatch the appropriate level of services based on established criteria and provide
pre-arrival emergency medical instructions to the caller until EMS arrives.

“Emergency Medical Services Division” means the Minnehaha County Emergency Medical
Services Division, a Division of the Department of Emergency Management.

“Emergency Medical Services (EMS) Provider” means any basic life support service, or advanced
life support service which possesses a License and engages in the business of providing emergency
medical services.

“Emergency Medical Technician (EMT)” means a person certified by the Department of Health
or the appropriate state agency who is authorized to perform basic life support, pursuant to the
provisions of Chapter _____, South Dakota Statutes.

“First Response” means the provision of non-transport emergency medical services designed to
provide initial stabilization of patients suffering from medical conditions.

“License Holder” means the entity licensed by the County to provide Ground ambulance services
within a specific geographical area within the County.

“Medical Director” means a licensed physician or a corporation dedicated to the provision of
emergency medical services as defined in South Dakota Statue Ch. _____, employed or provided under a
written contract by the County to supervise and accept responsibility for the medical performance of
Emergency Medical Technicians, Paramedics and Emergency Medical Dispatchers operating within the
County’s emergency medical services system.
The Medical Director shall perform such duties and responsibilities as may be assigned by the written contract of employment or position description. The Medical Director provides medical control through written protocols, on-line supervision, continuing education, and quality assurance.

“Medical Advisory Board” means the Board created by this ordinance whose mission is to review and recommend regarding standards of care for the EMS System.

“Paramedic” means a person certified by the Department of Health or the appropriate state agency, who is authorized to perform basic and advanced life support, pursuant to the provisions of Chapter ____ , South Dakota Statutes.

“Patient” means any person who is in need of emergency medical treatment and/or transportation as defined in the Minnehaha County Treatment Protocols.

“Person” means any living being, corporation, partnership or other business entity.

“Pre-Hospital” means the out of hospital provision of ALS or BLS treatment and/or transport services to a patient who has a medical condition.

“Principal of Record” means the Chief Executive official of an EMS Provider.

“Public Safety Agency” means a functional division of a public agency which provides firefighting, law enforcement, emergency medical, or other emergency services.

“Public Safety Answering Point” means a communications center designated to receive 9-1-1 calls.

“Response Time” means the time as measured in minutes and seconds from the point the call is dispatched to the license holder by the 911 communications center.
“Treatment Protocols” means the protocols approved by the County Medical Director directing the assessment, treatment, and transport of adult and pediatric patients.

“Unit Hour” means one hour of service by a fully staffed and equipped emergency medical services vehicle assigned to a call, or available for dispatch.

“Unit Hour Utilization” or “UHU” means a measurement of the efficient use of ambulance and emergency medical services resources. The UHU is calculated by dividing the number of patient transports or responses initiated during a given period of time by the number of unit hours produced during the same time period.

“Vehicle” includes aircraft, landcraft, and watercraft.

Section ____. Penalty.

Violations of this article are punishable as provided in section X.

Section ____. Civil Remedies.

The County Commissioners, or any aggrieved person, may have recourse to such remedies in law and in equity as may be necessary to insure compliance with the provisions of this ordinance, including injunctive relief to enjoin and restrain any person from violating its provisions. If the County prevails in any such litigation, whether by judicial decree or by settlement, it shall be awarded all of its costs and expenses, including a reasonable attorney’s fee, in addition to any other relief awarded or obtained.
Section ____. License Required.

No person shall operate an EMS or ambulance service transporting or caring for patients from within the County, nor advertise or offer such service to the public, unless the operator of such service shall have first obtained a License from the County.

Section ____. Geographic Zones

An EMS License, once issued, shall be for a specific geographical location within the County, but shall not prohibit operation outside of that specific geographical location in the event of emergency, a request for mutual aid, or disaster. The geographical areas for current county licenses are as attached in Appendix A, and made a part of this Ordinance by this reference. The map which serves as Appendix A shall have the response zones designated primarily by number. Any references to ambulance providers on the map shall be for convenience only. The geographical areas for Secondary Services Areas, designating a licensee for all sections which is to provide the first-level of assistance to a licensee in their geographic area as appearing in Appendix A, is attached as Appendix B, and made a part of this Ordinance by this reference.

Section ____. Exemptions

The following vehicles and services are exempt from the provisions of this ordinance.

a) Any emergency vehicle owned or directly operated by the federal or state government or any of their military services.

b) An EMS Provider responding and rendering services under a current, executed written mutual aid agreement at the request of a signatory to the agreement during a major catastrophe when vehicles based in the locality of the catastrophe are incapacitated or insufficient in number to render the services needed.
c) An ambulance service that is licensed by a municipality within the County to provide ground ambulance services solely within that municipality, as long as it is only operating within that municipality;

d) A service that is transporting patients from within the County only pursuant to written mutual aid agreements with licensed providers approved by the County, or intercepts; or

e) Air ambulance services.

Section -_____. Minnehaha County Emergency Medical Services Division.

a) The Minnehaha County Emergency Medical Services Division (Division) is created within the County Department of Emergency Management. The primary function of the Division is to provide oversight to the operations of County emergency medical services system according to policies and procedures promulgated by the County Commission. The Division will act as the County contract administrator for applicable contracts as assigned by the County Manager or his/her designee. Further, the Division shall seek compliance by all parties with all applicable contracts and interlocal agreements.

b) The Division shall require compliance of all providers within the county emergency medical services system, their employees and contractors, with the provisions of all pertinent statutes, South Dakota Health Department rules, interlocal agreements, County rules and regulations and applicable contracts dealing with the provision of emergency medical services and Alternative Transportation Services operating within Minnehaha County.

c) The Division shall perform such additional duties and/or assume such other responsibilities as may be assigned to it by the County Commission Administrative Officer or his/her designee.

d) The Division shall include the County EMS Medical Director.
e) The EMS Manager shall act as the EMS liaison between the County EMS Division and the EMS System stakeholders, including, but not limited to; the general public, the various EMS System providers, the Minnehaha County Medical Advisory Board, the Minnehaha County Fire Chief’s Association, and the Minnehaha County’s other EMS Providers.

Section -____. Medical Director.

There shall be a Medical Director either employed or contracted by the County to promulgate clinical protocols, provide clinical supervision and provide quality improvement activities for daily operations and training pursuant to this ordinance and pursuant to South Dakota Statute Ch. ___. The Medical Director shall supervise the clinical performance of the EMDs, EMTs, and Paramedics operating as part of the County Emergency Medical Services system. All County EMS System providers granted a License shall be required to fall under the authority of, and shall abide by, all medical protocols and quality improvement processes authorized by the County Medical Director.

Section _____. Credentialing

a) No person shall be permitted to function as a paramedic within the County’s emergency medical services system without first being credentialed by the County Medical Director. The purpose of credentialing is to provide the Medical Director with continuous information regarding persons who desire to operate within the County’s emergency medical services system to determine if such persons meet all requirements as provided for in Chapter ___, South Dakota Statutes, and rules and regulations of the department of health or other applicable regulatory agency.

b) Any person operating as an EMT or paramedic within the emergency medical services system of the County shall meet the requirements set forth by the County Medical Director.
c) The County Medical Director shall establish a process by which paramedics are credentialed.

d) If such person has met all requirements as set forth in Chapter ____, South Dakota Statutes, and the rules and regulations of the state agency having jurisdiction, the Medical Director may credential such an individual to serve within the County's emergency medical services system when, in the opinion of the Medical Director, the paramedic or EMT meets the standards of performance required by the Medical Director.

e) Credentials shall be valid for a period of time not to exceed two (2) years. The credential holder shall agree to any conditions specified by the Medical Director.

f) If the Medical Director has reasonable belief that conduct by an EMD, EMT or paramedic, or any EMS Provider may constitute one or more grounds for discipline, the Medical Director shall have the authority to suspend or revoke the credentials of said EMD, EMT or paramedic, or any EMS Provider.

Section ____. Levels of Service

There shall be Four (4) levels of medical care or transportation services in the County. These are as follows:

a) Level 1. Basic Life Support Non-Transport (BLS Non-Transport) are providers authorized to provide BLS first-response assistance to the patient requiring emergency medical care. These providers do not transport patients.

b) Level 2. Advanced Life Support Non-Transport (ALS Non-Transport) are providers authorized to provide non-transport ALS. A License shall be obtained from the County before engaging in this level of service.
c) **Level 3. Basic Life Support Transport (BLS Transport)** are providers authorized to provide BLS medical services and who routinely transport their patients to a medical facility. A License shall be obtained from the County before engaging in this level of medical care. Certified providers who respond to requests for transportation will respond with an BLS staffed and equipped vehicle only.

d) **Level 3. Advanced Life Support Transport (ALS Transport)** are providers authorized to provide ALS medical services and who routinely transport their patients to a medical facility. A License shall be obtained from the County before engaging in this level of medical care. Certified providers who respond to requests for transportation will respond with an ALS staffed and equipped vehicle only.

**Section _____. Data Reporting.**

All Providers authorized to provide emergency medical services within Minnehaha County shall comply with the electronic or other collection and reporting of a minimum data set (MDS) as required by the EMS Division. The MDS shall consist of clinical and operational data necessary in order to maximize the performance of the EMS System, including, but not limited to; call volume, response times, and clinical skills proficiency. Any required patient care reports shall be submitted in the specified format and shall be made available to the County within 24 hours of the incident. Data must be submitted in a timely fashion as directed by the EMS Division.

**Section _____. Medical Advisory Board.**

a) The Board of County Commissioners shall create by resolution an advisory board to be known as the “Minnehaha County Medical Advisory Board” whose mission is to review and recommend regarding standards of care for the EMS System. Alternatively, the Board of County
Commissioners may enter into an interlocal agreement to perform the Advisory Board function through a regional entity.

b) The Medical Advisory Board shall advise the County Medical Director and the EMS Division on issues pertaining to the EMS System, including but not limited to EMS System pre-hospital patient care protocols, research initiatives, hospital emergency department interface issues, and/or new technologies and clinical procedures.

c) The Medical Advisory Board may establish standing committees to provide recommendations regarding clinical quality management and enhancement concerning the provision of emergency medical services in conjunction with the EMS Division.

d) The Medical Advisory Board shall be chaired by the County Medical Director and shall include the following members:
   1) The County Medical Director;
   2) An Emergency Department Physician from each hospital emergency department in the County;
   3) The physician Medical Director of the County Health Department;
   4) A physician representative of the Minnehaha County Medical Society.

Section ____. Automated External Defibrillation (AED) Policy and Procedures.

Pursuant to South Dakota Statue ________________:

a) Any person or entity in possession of an automated external defibrillator is encouraged to register with the local emergency medical services medical director the existence and location of the automated external defibrillator; and

b) Any person who uses an automated external defibrillator is required to activate the emergency medical services system as soon as possible upon use of the automated external defibrillator.
Section ____. Response Requirements

Each agency shall respond to requests for services within a defined time period as noted by priority of call assigned:

1. Life-threatening Emergency Requests in urban/suburban high call density areas shall be within 10 minutes with 90th percent reliability as measured on a fractile basis.
2. Life-threatening Emergency Requests in rural/low call density areas shall be within 14 minutes with 90th percent reliability as measured on a fractile basis.
3. Non-Life-threatening Emergency Requests in urban/suburban high call density areas shall be within 15 minutes with 90th percent reliability as measured on a fractile basis.
4. Non-Life-threatening Emergency Requests in rural/low call volume areas shall be within 20 minutes with 90th percent reliability as measured on a fractile basis.

Section ____. Licensure Requirements.

1) Application. An application for any License required by this Ordinance for the operation of any Basic or Advanced Life Support Service, shall be filed with the EMS Division on such forms as the Division may require, together with such fee as the County Commissioners by resolution may establish.

2) Applications for Ambulance License shall include:
   a. The names and addresses of all principals of the proposed unlicensed provide;
   b. The trade or other name, if any, under which the applicant does business and proposes to do business;
   c. The boundaries of the territory to be served;
   d. The level and nature of the services proposed, in specific detail;
e. A description of all vehicles and equipment the applicant proposes to use to supply the service, including make, model, year of manufacture, vehicle identification number, vehicle type, current state license number (if applicable) and a listing of all medical equipment to be utilized in the provision of emergency medical services under the License;

f. Proof that the applicant has employed an adequate number of state-certified and credentialed personnel, and possesses all required federal or state license and permits;

g. A notarized statement that the applicant agrees to utilize the services of the County Medical Director for the duration of the License;

h. A notarized statement that the applicant agrees to participate in a Closest Unit Response Plan for the duration of the License;

i. A notarized statement that the applicant agrees to participate in providing mutual aid services and will enter into mutual aid agreements with other county providers and/or providers in adjacent jurisdictions subject to the County’s approval for the duration of the License;

j. Agreement that the applicant will respond to all emergency calls assigned by the County Designated Emergency Medical Dispatch Center;

k. Proof that the applicant is in compliance with all applicable federal, state, and local requirements, protocols, policies and directives;

l. A summary of the training and experience of the applicant in the provision of Basic Advanced Life Support ambulance services;

m. The address of the intended headquarters and any sub-stations, and the address to which the public may have access in person during normal business hours;
n. The applicant has furnished evidence of insurance coverage for claims arising out of injury to or death of persons and damage to the property of others resulting from any cause for which the owner of such business or service would be liable in accordance with such sums and under such terms as required by the County.

o. A proposed budget;

p. A written analysis and evaluation of the activity level of the proposed service, including an evaluation of the Unit Hour Utilization (UHU) of ambulances to be operated under the terms of the License;

q. A schedule of the applicant’s intended rates, if any, and the length of time they will remain in effect. Any changes to the rate structure will require prior approval by the County Commission; and

r. Such other information as the County Commission or County Administrator, or their designee may deem necessary and relevant.

3) Fees. Applications for new Licenses shall require a non-refundable application fee of XXXX ($X,000.00) DOLLARS, or one half of the total cost of evaluating the application, whichever is greater, to cover the cost of processing the application. Fees for Governmental agencies shall be waived.

4) Notice. The County Board of Commissioners, at a regularly scheduled meeting within sixty (60) days after receipt of an application deemed to be complete by the EMS Division, shall set a public hearing date for the application and authorize notice thereof, which shall be published in the County’s designated legal newspapers at least 21 days prior to the date of the hearing.

5) Medical Director Review. Within ten (10) days of receipt of an application deemed to be complete by the EMS Division under this article, a complete copy thereof shall be forwarded by the EMS Division to the County Medical Director for review and recommendations. The Medical
Director shall prepare a written report within 30 days of his receipt of the application, unless an extension of time is agreed to be all interested parties or is granted by the County Administrative Officer for good cause.

6) Provider Review. Within ten (10) days of receipt of an application deemed to be complete by the EMS Division under this article, a complete copy thereof shall be forwarded by the EMS Division to the Principal of Record of each Provider within the proposed geographic service area for the EMS Provider’s review and comment. The provider may submit its comments to the County Board of Commissioners in writing or in person at the public hearing.

7) Standards. Before taking action on an application under this article, the County Board of Commissioners shall consider, where applicable, the following criteria:

   a. The extent to which the applicant, and all proposed equipment and personnel, conform to the Standards of Chapter _____, South Dakota Statutes, any amendments thereto, and any rules promulgated thereunder;

   b. The extent to which the applicant and all proposed equipment and personnel conform to this article, any amendments thereto, and any rules, resolutions or policies adopted thereunder;

   c. The extent to which the proposed services are needed to improve the overall capability of the Emergency Medical Services within the County;

   d. The effect of the proposed services on the quality and cost of any existing Provider;

   e. The effect of the proposed services on the overall cost of medical transportation or rescue services within the County;

   f. The financial ability of the applicant to provide and maintain the proposed services at the levels of performance proposed;

   g. The effect of the proposed services on existing hospitals and other health care facilities;
h. The recommendations of the County’s Medical Director;

i. The recommendations of any affected Provider;

j. The experience and training of the applicant and its personnel, and the quality of its proposed equipment and vehicles;

k. The past performance of the applicant in this or other jurisdictions;

l. The ability of the applicant to comply with all applicable laws, ordinance, rules, and regulations of federal, state, and local governments; and

m. The applicant’s rate schedule, if any, and the length of time such schedule is to remain in effect.

8) Disposition of the Applicant. At the close of the public hearing on the application, the County Board of Commissioners shall approve, approve with conditions, or deny such application. Approval of the application shall result in the issuance of a License which shall include the conditions upon which the License was approved. The License shall be issued within 21 calendar days after the close of the public hearing.

9) Suspension or Revocation. The County Board of Commissioners may suspend or revoke any license granted under this article for good cause, after a hearing upon reasonable notice to the holder of the license, and to any affected municipality. Good cause shall be deemed to include, but not be limited to one or more of the following circumstances:

a. The license holder failed or refused to provide full and satisfactory service to the area covered by the license;

b. The license holder or any principal of the license holder fails to comply with the reporting requirements under the terms of the License issuance;
c. The license holder or any principal of the license holder fails to comply with the standards and policies implemented by the County Medical Director, or the EMS Division;
d. The license holder or any principal of the license holder has been convicted or entered into a plea of no contest to a felony or other offense involving moral turpitude;
e. False statements of material fact in the application, or the intentional omission of material facts from the application;
f. Failure to correct any deficiencies in the operations permitted by the license, following reasonable notice of such deficiencies;
g. Failure to comply with any applicable federal, state, or local laws, ordinances, regulations, resolutions, or policies;
h. The license holder or any principal of the license holder has been found guilty of negligence in the operation of his service by any court of competent jurisdiction;
i. Any material change in the ownership, management or operations of the license holder;
j. Failure to respond as directed by the County’s Designated Emergency Communications Center; or
k. Failure to provide services under a Closest Unit Response Plan.

10) Rights and Duties Granted by Certification.

a. Each license issued in accordance with this ordinance will expire automatically 2 years after the date of issuance. The requirements for renewal of any License issued under this part are the same as the requirements for original License that are in effect at the time of renewal.
b. The License shall not be transferable or assignable, either voluntarily or by operation of law, without the prior written approval of the County Board of Commissioners, upon a finding of conformance with all requirements of this ordinance.

c. Acceptance of the License shall obligate the applicant to:

   i. Provide continuous and uninterrupted services to the extent, and for the area, authorized by the License;

   ii. Provide services to adjacent areas, when requested to do so by a Public Safety Agency or EMS Provider;

   iii. Keep such records as may be required by the federal or state government, or by the County Board of Commissioners, pursuant to any rules and regulations adopted by resolution under this ordinance, and furnish or make such records available to the County Commission Administrative Officer or designee for inspection at reasonable times and place;

   iv. Operate in conformance with all federal, state, or local laws or ordinances, and all rules and regulations, resolutions or policies thereunder, and any conditions or limitations imposed by the County Board of Commissioners upon issuance of the license;

   v. File an application for renewal of its license, or a notice of its intent not to seek renewal of its, at least 120 days prior to its expiration; and

   vi. Maintain liability insurance in such amounts and with such coverages as the County Board of Commissioners may require upon issuance of the license.

d. The County Board of Commissioners may modify the terms and conditions of any licenses issued hereunder, at any time, after a public hearing upon reasonable notice to all interested persons.
11) Status of Any Current License. Any valid License in force on the effective date of this article shall remain in full force and effect until its current expiration date unless the License is suspended or revoked by the County Board of Commissioners. Provision of services under a valid COPCN in force on the effective date of this article shall conform in all respects legally permissible to the sections of this article. Any renewal of a valid License in force at the effective date of this article shall comply in every respect with application requirements set forth in section _______

Section _____. Rules and Regulations.

The County Board of Commissioners is hereby authorized to adopt by resolution such forms, rules, regulations, and policies as may be necessary or proper to implement this article, including, but not limited to, requirements and criteria for levels of service and training, for standards of medical operations, and for personnel, vehicles, record keeping, financial responsibility, notices and hearings, modifications and renewals, and appropriate fees.

Section _____. Emergency Powers.

The Board of Commissioners may, to protect the health and safety of its citizens temporarily set aside any provision of this Ordinance for a period of up to 180 days. This shall include but not be limited to suspending, terminating or granting licenses to providers. Notwithstanding the above, in the event Board of Commissioners determines that a material breach of the licensure provisions, misrepresentation of licensure application information, or other violation of provisions of this Ordinance has occurred, and if the nature of the breach is, in the Board of Commissioners’ opinion, such that public health and safety are endangered, and after Licensee has been given notice and reasonable opportunity to correct deficiency not to exceed 5 business days, the Board of Commissioners concurs that a breach has occurred and that health and safety would be endangered by allowing licensee to continue its operations, Licensee shall cooperate fully with Board of Commissioners to effect a service change.
Section ____  Effect on Other Ordinances.

The provisions of this article shall prevail in the event of conflict with any other provisions of any ordinance in the existing Code of Ordinances of the County of Minnehaha.

SECTION IV: Authorizing Inclusion in Code Provision. The provisions of this ordinance shall be included and incorporated into the Code of Ordinances of the County of Minnehaha and shall be appropriately numbered to conform to the uniform numbering system of the Code.

SECTION V: Severability provision. If any provision of this ordinance is for any reason finally held invalid or unconstitutional by any court of competent jurisdiction, such provision shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining provisions.

SECTION VI. Effective Date provision. A certified copy of this Ordinance shall be filed in the Office of the Secretary of State by the County Manager within ten (10) days after enactment and this Ordinance will take effect upon receipt of official acknowledgement from that office that said Ordinance has been filed.
ADOPTED BY THE COUNTY BOARD OF COMMISSIONERS OF MINNEHAHA COUNTY, SOUTH DAKOTA, IN OPEN MEETING DULY ASSEMBLED IN THE COUNTY COUNCIL CHAMBERS AT
___________________________________________ THIS _______ DAY OF _______________, AD 2017.

COUNTY BOARD OF COMMISSIONERS
MINNEHAHA COUNTY, SOUTH DAKOTA

BY: ____________________________
CHAIR

ATTEST:

__________________________________
COUNTY CLERK