RURAL AND FRONTIER EMERGENCY MEDICAL SERVICES

Three Year National Tactical Plan

A product of the Joint Committee on Rural Emergency Care with funding through support from the National Organization of State Offices of Rural Health.

This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under Cooperative Agreement #U14RH19776 State Offices of Rural Health Coordination and Development Program (SORHCDP) .

Table of Contents

Background 3

Introduction 3

Integration of Health Services 6

Legislation/Regulation of Clinical Care and Transportation Decisions/Resources 8

System Finance 10

Human and Education Resources 12

Public Information, Education and Relations (PIER) 14

Appendix A – How We Get There (Action Steps) 16

- Integration of Health Services 16
- Legislation/Regulation of Clinical Care and Transportation Decisions/Resources 18
- System Finance 19
- Human and Education Resources 21
- Public Information, Education and Relations (PIER) 23

Appendix B – Priority Areas for Future Attention - Description 25

- EMS Research 25
- Medical Oversight 27
- Prevention 28
- Public Access 30
- Communication Systems 32
- Information Systems 34
- Evaluation 35

Appendix C – Priority Areas for Future Attention – How We Get There (Action Steps) 37

- EMS Research 37
- Medical Oversight 39
- Prevention 41
- Public Access 42
- Communication Systems 43
- Information Systems 44
- Evaluation 46

Appendix D – References 47

Background

The Rural and Frontier EMS Agenda for the Future[1], published in 2004 by the National Rural Health Association ("*2004 Agenda*") with the support of the Federal Office of Rural Health Policy (Health Resources and Services Administration, US Department of Health and Human Services), was a landmark consensus document of the national EMS and rural health communities. It spurred the launch of many new resources for rural EMS system development (e.g. guides for rural EMS managers) and practices for EMS (e.g. community paramedicine). It also resulted in the formation of the Joint Committee on Rural Emergency Care (JCREC), a coalition of four national organizations (a fifth, the National Association of EMS Physicians was added in 2018):

- National Association of EMS Physicians (NAEMSP)
- National Association of State EMS Officials (NASEMSO)
- National Organization of State Offices of Rural Health (NOSORH)
- National Rural Health Association (NRHA)
- National Rural Health Resource Center – Technical Assistance and Services Center (NRHRA-TASC)

The JCREC has been of sufficient importance, that these organizations have supported an active workplan and meeting schedule ever since its formation. It is now the sponsor of the largest rural EMS and care conference in the country.

In 1996, the National Highway Transportation Administration released the *EMS Agenda for the Future*, a broad-spectrum visionary guide for American EMS system development. In 2004, rural EMS leaders developed the *2004 Agenda* as a companion document to address the unique challenges of EMS in rural and frontier communities. These communities are marked by long distances, challenging geography, low call volumes, higher cost per call to maintain the system, fewer monetary and other resources, and a dependence on volunteerism. Both documents were organized based on fourteen components/attributes of an EMS system. These were originally suggested as 15 components/attributes in the Federal EMS Act of 1973[3], which was intended to create EMS as a system of care.

Introduction

The 2019 *Rural and Frontier EMS Three Year National Tactical Plan* builds on the work of the original 2004 agenda and proposes a three-year tactical approach to implementing some of the most important, yet feasible remaining recommendations of the over 120 contained in the 2004 *Agenda.* Understanding the changes in the national healthcare environment, and specific trends and issues in the past few years, has shaped consideration of the recommendations and some recrafting of them. Some of these include the "volume to value" reimbursement emphasis, rural hospital closures, and the way EMS will be treated under evolving healthcare financing legislation.

The 2019 project utilized the expertise of the National Association of State EMS Officials to lead the effort, selected a Steering Committee primarily from the JCREC membership, and employed the author of the 2004 *Agenda* to serve as the primary writer. The Steering Committee consisted of:

Alia Hayes, New Hampshire State Office of Rural Health
Andy Gienapp, Wyoming Office of EMS
Dr. Chelsea White, University of New Mexico
Gary Wingrove, Mayo Clinic
Diane Calmus, National Rural Health Association
Teryl Eisinger, National Organization of State Offices of Rural Health
Christy Edwards, Federal Office of Rural Health Policy (FORHP, HRSA, USDHHS)
Jim DeTienne, Montana EMS
Joyce Hospodar, Arizona Center for Rural Health
Jeanne-Marie Bakehouse, Colorado EMS
Nicole Clement, National Rural Health Resource Center
Nita Ham, Georgia State Office of Rural Health
John Barnas, Michigan Center for Rural Health
Kevin McGinnis, Primary Writer, National Association of State EMS Officials

The Steering Committee reviewed the recommendations of the 2004 *Agenda* and participated in a rating process for importance, feasibility for achievement in three years, and relevance to the JCREC. The scoring resulted in a clear grouping that had received a preponderance of the votes. These were then presented at the National Rural EMS and Care Conference in Tucson, Arizona in April, 2018, and at the Rural Committee of the National Association of State EMS Officials annual meeting in the same month. The recommendations were rated by the EMS providers, state rural health officials, EMS physicians, or state EMS officials attending these meetings. They were also invited to add to the list of recommendations. During the course of this process and subsequent discussion, attendees approved a group of recommendations.

The Steering Committee disseminated a copy of a draft for review by those affiliated with JCREC member organizations and the public in general. It contained one recommendation for each of fourteen EMS system attributes identified in the 2004 *Agenda.* The purpose was not only for general input, but also to help the Steering Committee prioritize the fourteen recommendations. The Steering Committee realized that the magnitude of effort represented by the fourteen recommendations might be excessive in a three-year timeframe. The fourteen recommendations were, as a result, grouped in a further prioritization by the Steering Committee into five for implementation in 2019-2022 and seven for later implementation (four recommendations were combined, resulting in two less recommendations). The first five are contained in the body of the document and Appendix A and the latter seven in Appendices B and C.

It is expected that the objectives listed for each of the first five EMS system components will be considered for inclusion in the JCREC workplans to be adopted for the next three years starting

in 2019. Given the voluntary nature of participation in and the staffing of JCREC, its members will partner with other associations and federal agencies to complete the tasks required. As a result, the Steering Committee created a second opportunity for review of the document by the JCREC members, other cited participant organizations, and the public prior to publication.

Another national EMS planning process was underway during completion of this tactical plan. It was called "EMS 2050" and was sponsored by the National Highway Traffic Safety Administration's EMS Office[4]. While not complete at the time of this publication, its progress was followed throughout. EMS Agenda 2050 has one overarching principle, the development of people-centered EMS systems. It also has six supporting principles:

1. Sustainable and Efficient
2. Reliable and Prepared
3. Socially Equitable
4. Adaptable and Innovative
5. Inherently Safe and Effective
6. Integrated and Seamless

When EMS Agenda 2050 is published, the work on the six recommendations described below will consider these principles.

Integration of Health Services

Where We Are

One of the greatest impacts of the 2004 *Agenda* was its effect on the promulgation of EMS-based community health services, now central to the concept of "EMS 3.0"[45]. The EMS 3.0 initiative was developed by several national EMS associations to encourage EMS systems and agencies to transform themselves as broader, more integral services within the transforming community healthcare systems. This would be accomplished by assessing unmet health needs in a community and using EMS and affiliated resources to meet them, while continuing to serve the traditional EMS emergency response and medical transportation role. This would also potentially provide additional revenue streams to support the traditional EMS safety net services, particularly in rural communities.

The EMS-based community health services to which the 2004 *Agenda* referred, have included community paramedicine (CP) which is the practice of using EMS resources to meet unmet community health needs and mobile integrated healthcare (MIH) which employs both EMS and other health and medical practitioners. The 2004 *Agenda* noted that in many rural settings, EMS personnel were already serving in other healthcare roles, and had been doing so for over a decade[5]. The EMS 3.0 model encourages the proliferation of this within a carefully coordinated network of relationships within the health care system, so that all services that EMS provides are effectively integrated to avoid duplication and to assure a high quality patient experience, continually improved EMS response to all calls for care, and appositive impact on population health.

Though first coined as a conceptual term in a publication in 2001[6], community paramedicine was not familiar to the national EMS community until a few years after the 2004 *Agenda* was published. In 2018, the National Association of EMTs (NAEMT) published its Mobile Integrated Healthcare and Community Paramedicine Second National Survey which identified over 200 communities with EMS 3.0 component services in place[7].

According to a survey conducted in 2014, the National Association of State EMS Officials (NASEMSO) found evidence of widespread EMS 3.0 component adoption:

- Ninety-two percent of state EMS offices were aware of CP-MIH activity, from planning to routine delivery of services.
- Eighty-six percent of states have laws which enable CP-MIH to be provided by licensed EMS personnel.
- Sixty-seven percent of states were aware of health systems facilitating CP-MIH.
- Five states reimburse for CP-MIH services to Medicaid patients, while 45% of states are working towards this.

- Three national commercial health insurance companies and the Centers for Medicare and Medicaid Services (CMS) have funded pilot CP-MIH programs.
- One major commercial health insurer is implementing reimbursement for CP-MIH services in its 14 states. [8]

Between the pilot of reimbursement models, the current activities, and a concerted push to change the CMS status of EMS providers from "suppliers" to "providers", the funding tide for EMS 3.0 is turning.

NAEMT has largely carried the banner of the EMS 3.0 movement, with a webpage and annual summit conferences promoting the initiative[45]. Both NASEMSO[9] and NAEMT[10] have webpages dedicated to the EMS 3.0 component services of CP and MIH. These list resources for CP-MIH service implementation and related purposes and update the status of rules and regulations pertaining to CP-MIH. Both NASEMSO and NAEMT have active EMS 3.0/CP-MIH related committees. International Roundtable on Community Paramedicine[11] and Community Paramedicine Insights Forum[12] series of webinars have been active for over six years.

Where We Want to Be

The 2018 recommendation selected for this Tactical Plan is:

"Encourage EMS-based community health service program development through the funding of pilots, cataloguing of existing successful practices, exploration of opportunities for expanded EMS scopes of practice, and on-going reimbursement for the provision of such services."

Although the 2004 *Agenda* largely succeeded in achieving this aspiration, some states still struggle with implementing legal details of CP-MIH, some still encounter resistance to the concept from organizations representing other health care practitioners, and adequate funding of EMS 3.0 component services and practitioners has not yet been achieved. Tribal EMS, either Indian Health Service or through the tribe itself, have both the need to be a recipient of this recommendation's benefit and an example where EMS 3.0 has been successful.

How We Get There

Objectives (See Appendix A for Action Steps)

1. Provide a coordinated source for EMS 3.0 and CP-MIH information for state EMS and health agencies and for local and tribal EMS and other entities wanting to implement EMS 3.0 and component CP-MIH services.

2. Publicize the need for EMS 3.0 transformation and for CP-MIH practitioners well integrated with other health care practitioners.

3. Track and publicize information on reimbursement and funding changes as they occur.

Legislation/Regulation of Clinical Care and Transportation Decisions/Resources

Where We Are

Since publication of the 2004 *Agenda*, the federal EMS landscape was given more formal shape by the Moving Ahead for Progress in the 21st Century Act of 2012 which formally authorized the national EMS Advisory Council (NEMSAC), initially formed in 2007[46]. Created as a representative council, NEMSAC's charter requires "geographic and demographic diversity" as well as suggesting specific tribal EMS representation[47]. This was significant in that it more firmly provided a federally designated lead agency for EMS within the Department of Transportation though coordinating broadly through the Federal Interagency Committee on EMS (FICEMS) touching all federal agencies with EMS roles.

On the state level, significant legislative change impacting rural EMS occurred largely as a result of the 2004 *Agenda*. Funding support of EMS-based community health services began with 2011 legislation in Minnesota[48] moving EMS toward a more integrated role within the health care system and stimulating development of the concept of EMS 3.0 discussed in the previous section[45]. Subsequently, similar changes to laws or rules, or interpretations of existing laws or rules, indicate that some 86% of states enable EMS 3.0 development[49].

One legislative/regulatory area that potentially remains deficient despite the 2004 *Agenda*, is rural EMS representation in state level EMS planning and coordination. Most state EMS agencies exert a leadership role in system development (as NASEMSO encourages) while others limit themselves to regulatory functions. Most states have statewide representative bodies in an advisory or authority role to guide EMS system development[13].

These state committees or boards often have a subcommittee structure for planning or operational purposes which may make recommendations to the state group and EMS agency or may be delegated the authority to act on behalf of the state group and EMS agency (e.g. a licensing committee might hear complaints about licensees and take action; a medical oversight board might authorize treatment protocols; a trauma committee might designate trauma centers). These committees often cover some of the fourteen EMS system component/attribute areas of 1996 *EMS Agenda for the Future* (e.g. education, medical oversight, human resources).

Beginning with statewide trauma system planning in the early 1990's, and with broadened recommendations for regional, accountable systems of care (e.g. stroke, trauma, heart attack) by the Institutes of Medicine *Future of Emergency Care* report series in 2006[14], the establishment of systems of care for time-dependent emergency conditions have been the focus of many state EMS lead agencies.

Whether drawn from the component/attribute model (e.g. education committee, medical oversight committee) or the systems of care approach (e.g. trauma committee, stroke committee) state EMS system planning and implementation committees, as with the primary state EMS board/committee, generally involve a representative advisory group of stakeholders from around the state.

As EMS systems conduct planning, implement change, and generally evolve through decisions of these committee structures, there is concern that smaller, rural agencies and facilities may not be adequately represented in the primary state board/committee or in the component-based or systems-of-care-based committees described above.

Where We Want to Be

The recommendations selected for this Tactical Plan are:

"Assure that state EMS lead agency advisory boards are adequately representative of rural/frontier EMS interests."

"Assure that state EMS systems utilize statewide and regional EMS committees charged with overseeing the development and improvement of systems of care and of other EMS system components/attributes that include adequate rural representation."

How We Get There

Objectives (See Appendix A for Action Steps)

1. Define "adequate representation"

2. Achieve adoption of definition.

System Finance

Where We Are

Rural EMS agencies evolved largely as volunteer-based services. As volunteers have become increasingly scarce in the face of greater requirements for EMS professional licensure and economic pressures in general, communities are confronted with the real cost of staffing an EMS agency. With rural hospital closures, rural ambulance services are called upon to transport patients more patients and longer distances, stretching their staffing and vehicle resources even more. There are no dependable sources of revenue to support these costs other than patient charges, or third-party insurance reimbursement. Staffing an advanced life support ambulance twenty-four hours a day can cost between a quarter and a half million dollars[50,51]. Local governments face new demands to subsidize such cost as volunteerism succumbs to the pressures described. Informed self-determination, discussed in the Public Information, Education, and Relations section below, and funding of EMS 3.0 services, as discussed above, hold promise in these regards, but further analysis is needed in general.

The negotiated ambulance fee schedule rule created by the Centers for Medicare and Medicaid Services (CMS) includes Congressionally mandated temporary increases in payments for rural and "super rural" ambulance services[15,52]. No permanent increase has been enacted by Congress. Rural and Super Rural services are reimbursed at below cost levels, especially those with lower call volumes and greater transport distances.

Where We Want to Be

Rural EMS agencies need to be adequately funded to maintain a high quality, reliable safety net of emergency health services. Part of this may be addressed by adequate local funding of EMS as an essential community service, however state, federal and private health insurance companies contribute significantly to EMS agencies' ability to provide services through their control of revenue. At some point the "volume to value" concept of funding health care may positively impact EMS, especially as EMS agencies transform themselves into EMS 3.0 agencies[16].

Until that time, rural EMS agencies must continue to push for improved reimbursement. The recommendations selected, with one addition on data provision, are:

"Implement the following federal reimbursement reforms for emergency and interfacility EMS clinical care and operations: Employ definitions of "access" and "rural" (and its degrees) in reimbursement, such as those presented in Appendix J of the 2004 Agenda[17], which will help to maintain an adequate rural/frontier EMS infrastructure. Quantify necessary reimbursement levels for rural EMS with data collection to support the need."

The current CMS reimbursement arrangement in which EMS agencies are treated as product "suppliers" rather than care "providers" and the implementation of value-based and

population-based financing of services creates complexity and uncertainty among EMS agencies. While most providers still seem to believe that we are continuing toward population health-based funding of health services, the outcome of this trend is not clear. As a result, rural EMS funding may be too complicated an issue to fix by changing reimbursement definitions at CMS and quantifying the need for that change may exceed the capabilities of the JCREC. Therefore, JCREC will review the status of this issue in 2019 and seek guidance from the American Ambulance Association and other experts on ambulance service funding and reimbursement issues.

How We Get There

Objectives (See Appendix A for Action Steps)

1. Form a rural EMS "Sustainment" Work Group led by JCREC.

2. Define objectives for Tactical Plan update on this issue.

Human and Education Resources

Where We Are

A number of attempts have been made since 2008 to quantify the EMS workforce and determine whether there is a specific shortage in the workforce (e.g. *Research and Literature Review for Emergency Medical Services (EMS) Workforce Data Collection*, contained in NASEMSO's *EMS Workforce Planning & Development - Guidelines for State Adoption*[18]*).* While there are difficulties recognized with these attempts (e.g. varying definitions of "volunteer", individuals holding multiple jobs) there is some consensus that if there is a shortage, it is in rural areas. This is attributed to traditionally heavy reliance on a declining volunteer workforce and greater pay and benefits in urban/suburban settings to which rural EMS professionals are attracted.

Addressing recruitment and retention has been a perennial state EMS office issue for many rural states. There are no indications that more volunteers in rural EMS will be forthcoming. The JCREC has discussed the contribution of stress and mental health issues to retention of the rural EMS workforce and generally agrees that it needs to be further evaluated. Critical incident stress management (CISM) approaches in EMS and public safety have been plentiful for two to three decades, and there is at least one international standard for programs to manage stress in EMS[19].

The *Emergency Medical Services Education Agenda for the Future: A Systems Approach*[20] was published in 2000. Its implementation and revision have been ongoing. Its history has reflected progress in the sophistication and credibility of the education process through the development of organized standards not only for the practice of paramedicine but for the education and educational requirements for the practitioners.

This is positive progress for paramedicine (intended as a term to broadly include all EMS professionals) in its advancement to a profession, but it creates an increasing burden on rural EMS. As educational and certification requirements for practice increase and education centers centralize in urban areas, these requirements can grow beyond the reach of the potential rural EMS workforce, a significant portion of which is, to some extent, volunteer. Supplying an adequate EMS workforce with sacrificing certification standards is a perennial challenge.

The Joint Committee on Rural Emergency Care (JCREC) is an active forum for the improvement of rural paramedicine. Its focus has not, however, included topics involving rural EMS education. Strides have been made in distance learning, and in travelling simulation classes among other resources. Presumably these aid rural EMS students. The JCREC lacks the expertise to evaluate these and to suggest other solutions to the issues stated.

Where We Want to Be

State EMS offices and state offices of rural health will need to continue to try to support recruitment and retention by rural, largely volunteer services until communities realize the need to adequately understand and fund the services provided by EMS agencies. Recruitment and retention tools that these efforts provide should address stress factors and critical incident stress management programming.

Rural EMS education needs should be more frequently included in the routine discussion of the JCREC in order to make progress on these topics. The National Association of EMS Educators (NAEMSE)[21] has become a vibrant and credible organization of international stature.

The recommendations crafted by the Steering Committee are:

"Analyze, at the state EMS agency level, rural/frontier workforce recruitment and retention efforts, develop statewide plans for improvement, and address public policy changes necessary to support workforce needs in rural America."

"Actively consider and promote the unique needs of rural/frontier practice and EMS-based community health services through the development of non-traditional education methods focused on vocational training, maintenance of clinical skills, and affordability as the development and implementation process for the Emergency Medical Services Education Agenda for the Future: A Systems Approach evolves."

How We Get There

Objectives (See Appendix A for Action Steps)

1. Survey NASEMSO members to analyze rural/frontier recruitment and retention efforts.

2. Collect materials identified by states as having produced positive effects on recruitment and retention.

3. Develop and promote national policy change recommendation(s).

4. Solicit the representation of the National Association of EMS Educators on the Joint Committee on Rural Emergency Care.

Public Information, Education and Relations (PIER)

Where We Are

In rural America, state EMS officials experience the cumulative issues arising from:

- the decline of EMS volunteerism;
- the continued failure of the health finance system to reimburse even the costs of ambulance service operation;
- the closure of community hospitals; and
- the declining availability of medical specialties and primary care services.

The resulting pressures have led to closure of some fragile ambulance services and the reorganization of others into larger, regional entities.

A common theme seems to be that the solution to this will be found in volunteer recruitment and retention programs, management training, local EMT or other training program sponsorship efforts. Another is seeking other resources, such as grants, provided by the state or federal government or private sources to maintain EMS in struggling communities.

The provision of EMS, with some exceptions, has not been formally considered an essential service by state and local government. It has evolved with volunteerism as its strong foundation especially in rural areas. It has also evolved from a simple transportation service to the provision of an array of medical capabilities which are more difficult for the public to understand[22] and for volunteers to provide. In contrast, law enforcement and trash collection have been more often deemed essential services by government, have not evolved as services provided by volunteers, and are simpler services for the public to understand.

As a result of all this, there is a gap between the superficial solutions developed to date, and the real problem. At first glance, the challenges facing rural EMS seem to be about the loss of the volunteer workforce, when the reality is that the challenges lie within how rural EMS is viewed, valued, funded and structured.

Where We Want to Be

It may not be practical to attempt to formally establish EMS as an essential service in the eyes of all 56 states and territorial governments. Nor is it necessary. The tax-paying public is still responsible for making decisions about services they receive whether they are formally deemed essential or not. For instance, taxpayers in a town may opt for the expense of a local police department or may let police response fall to a county or state agency to save money in exchange for longer response times. While EMS may not be an essential service formally, the public expects it to exist. Decisions about the type and level of medical services provided by EMS include but go beyond speed of emergency response. They also include whether basic or advanced levels of emergency intervention are available and what other services (e.g. community paramedicine) are provided.

The 2004 *Agenda* repeatedly cites the concept of informed self-determination (ISD)[23] as fundamental in assuring that the type and level of EMS service provided to a community is that which a well-informed taxpayer base identifies that it is willing to fund.

Fourteen years later, there is only anecdotal evidence among the few ambulance agency assessments around the country that true ISD processes have been implemented. Further, there is little evidence that the public knows any better today than it did back then what type and level of service will respond when 9-1-1 is called and whether that level of service is satisfactory to the community.

Therefore, the following recommendation that proved the highest scoring of all recommendations considered by the Steering Committee, and was selected for the 2018 Tactical plan, is:

"Develop a national template for community EMS system assessment and informed self-determination processes to help communities determine and be accountable for their own EMS type, level and investment."

How We Get There

Objectives (See Appendix A for Action Steps)

1. Identify an opportunity to pilot an informed self-determination process and secure funding to do so.

2. Explore using the template to establish state EMS programs to train/maintain cadres of informed self-determination project managers.

Appendix A – How We Get There (Action Steps)

Integration of Health Services

Objectives	Action Steps	Who	Time Frame
1. Provide a coordinated source for EMS 3.0 and CP-MIH information for state EMS and health agencies and for local and tribal EMS and other entities wanting to implement EMS 3.0 and component CP-MIH services	Coordinate existing web page content	NASEMSO, NAEMT, Community Paramedic.org, and other JCREC members	2019
2. Publicize the need for EMS 3.0 transformation and for CP-MIH practitioners well integrated with other health care practitioners	Disseminate success stories of multidisciplinary partnerships	NASEMSO, NAEMT EMS 3.0 Initiative, other JCREC members	Ongoing

Objectives	Action Steps	Who	Time Frame
3. Track and publicize information on reimbursement and funding changes as they occur	Use websites and listservs to collect, post and disseminate this information	NASEMSO, NAEMT, communityparamedic.org, and other JCREC members	Ongoing

Legislation/Regulation of Clinical Care and Transportation Decisions/Resources

Objectives	Action Steps	Who	Time Frame
1. Define "adequate representation"	Establish draft definition	JCREC	2019
	Survey NASEMSO members on status of rural representation on state EMS boards, their committees, and system of care bodies if different	NASEMSO	2019
	Achieve NASEMSO consensus on definition	NASEMSO Rural Committee	No later than NASEMSO 2020 annual meeting
2. Achieve adoption of definition	Solicit date-specified adoption of definition	NASEMSO	2020-21
	Create and report status summary to JCREC	NASEMSO	2021

System Finance

Objectives	Action Steps	Who	Time Frame
1. Form a Rural EMS "Sustainment" Work Group led by JCREC	Form group through JCREC solicitation. Coordinate with NEMSAC, FICEMS and ASPR Council on Emergency Care finance support groups	NOSORH	2019
	Review recommendation and Appendix J of 2004 *Agenda* and achieve better understanding of impact of "volunteer subsidy"	Sustainment Work Group	2019
	Better define issues at play and changes in environment since 2004	Sustainment Work Group	2019
	Request American Ambulance Association (AAA) participation in Work Group or other guidance	Sustainment Work Group	2019
2. Define objectives for Tactical Plan/JCREC Workplan updates on this issue	Conclude review of issues at hand	Sustainment Work Group	Early 2020
	Draft objective(s) for JCREC consideration	Sustainment Work Group	By 2020 National Rural EMS Conference
	Update Tactical Plan and JCREC Workplan,	JCREC	2020-21

Objectives	Action Steps	Who	Time Frame
	and initiate work on objective(s)		
	Disband Work Group	JCREC	2022

Human and Education Resources

Objectives	Action Steps	Who	Time Frame
1. Survey NASEMSO members to analyze rural/frontier recruitment and retention efforts	Design survey; review at JCREC. Include CISM and other wellness and interventional support program considerations	NASEMSO JCREC	Fall 2019
	Conduct survey	NASEMSO	2019-2020
	Compile, analyze and report results	NASEMSO JCREC	2020
	Review survey for successful campaigns. Compare CISM and other wellness and interventional support programs against Canadian standard and National Alliance of Mental Illness resources	NASEMSO	2020
2. Collect materials identified by states as having produced positive effects on recruitment and retention	Add to JCREC member websites as available resources	JCREC	2020-2021
	Invite states reporting success to speak at National Rural EMS and Care Conference	JCREC	2021

Objectives	Action Steps	Who	Time Frame
	From survey results, identify successful initiatives that might be supported by national funding and/or policy changes	NOSORH	2020
3. Develop and promote national policy change recommendations	Craft into possible national action steps/legislation	NRHA JCREC	Late 2020
	Develop as policy platform item	NRHA	2020-2021
4. Solicit representation of NAEMSE on JCREC	Seek JCREC agreement to add NAEMSE as a member	JCREC leadership	2019
	Invite NAEMSE to join JCREC	JCREC leadership	2019
	Contact the NAEMSE executive director and invite NAEMSE to name a member	JCREC leadership	2019
	Invite new member to review and add to JCREC workplan at least one education-related objective	JCREC leadership	2019

Public Information, Education and Relations (PIER)

Objectives	Action Steps	Who	Time Frame
1. Identify an opportunity to pilot an ISD process and secure funding to do so	Work with FORHP to identify community EMS assessments proposed and scheduled to be conducted in 2019	NOSORH NASEMSO	2019
	Solicit one or more of those projects to utilize ISD-expert members of JCREC to participate in their pilots	ISD Expert Members of JCREC Paramedic Foundation	2019-2020
	Develop and pilot the template in one or more systems	ISD Expert Members of JCREC Paramedic Foundation	2019-2020
	Publish the Template	NOSORH NASEMSO Paramedic Foundation	2020-2021
2. Explore using the template to establish state EMS programs to train/maintain	Convene informal meeting of FORHP FLEX EMS Advisory Committee, NASEMSO, NOSORH and others to discuss this concept	NASEMSO/ NOSORH	2020-2021

Objectives	Action Steps	Who	Time Frame
cadre of ISD project managers	Include meeting recommendations in future Tactical Plan		

Appendix B – Priority Areas for Future Attention - Description

EMS Research

Where We Are

The 2004 *Agenda* cites the *National EMS Research Agenda*[24], a 2002 follow-on product of the original 1996 *EMS Agenda for the Future*). The *Research Agenda* called for a network of EMS research centers to be established and centrally coordinated. The 2004 *Agenda* elaborated that some of these centers should have a rural mission and qualifications. A Medline search from 2005–2007 for "Rural Emergency Medical Services" found 259 citations. The same search from 2003–2005 found 139 citations[25].

The Federal Office of Rural Health Policy (U.S. Department of Health and Human Services, Health Resources and Services Administration) has actively supported rural EMS research efforts and funded the 2004 *Agenda,* as well as this document. The Rural Health Research Gateway website lists research projects funded at rural health research centers. Between 2015 and 2017, while fifty-five research projects were funded, few of the projects focused on EMS. Of ten rural health research centers listed on the Rural Health Research Gateway website (https://www.ruralhealthresearch.org/centers), only one describes its project areas in an EMS-related area (ED access). This level of interest among rural health researchers should be improved to move the rural EMS agenda forward. Most state EMS offices do not have the resources to conduct this research on their own.

Where We Want to Be

The status of rural EMS research is not clear and should be analyzed for its adequacy. As a component of the rural health system, EMS is believed to be under ever-increasing pressure as other health resources disappear. The ability to adequately measure and express the issues that result is important. An exhaustive, coordinated, and thorough multi-disciplinary study of the current status of EMS in rural America is needed.

The recommendation selected for the 2018 Tactical Plan is recrafted from two earlier ones:

"Existing federally funded rural health research centers, potential non-governmental sources of support for rural EMS research such as the Robert Wood Johnson Foundation and foundation arms of the National Association of EMS Physicians, American College of Emergency Physicians, and the Association for Air Medical Services, should be consulted in establishing a plan to assess the adequacy of rural EMS research and to stimulate local, state-level and national efforts in this area if found to be inadequate."

How We Get There

Objectives (See Appendix C for Action Steps)

1. Assess the adequacy of rural EMS research, create an agenda for rural EMS research

2. Solicit research center and potential funder interest in areas of research need

3. Conduct Projects

Medical Oversight

Where We Are

Medical oversight of EMS practitioners remains a differently defined and practiced component of rural emergency medical care. It is largely dependent on geography, availability of potential medical directors, and financial and other resources. The requirements of state EMS offices vary as to the degree of oversight exerted on individual practitioners and agencies. Duties of a medical director may include credentialing practitioners to practice, permitting agencies to operate, establishing clinical protocols, evaluating practitioner and agency performance, providing training, performing skills verification, and responding on calls. Medical directors often are also volunteers, and must share those duties with their practices, facility obligations, and other requirements.

Training for medical directors has also varied in content and availability. The National Association of EMS Physicians has offered a National EMS Medical Directors Course & Practicum® associated with its annual meeting and at other times, and its Medical Direction Overview *Course®*[44] which is available on-line. A number of state EMS agencies have adopted the content from these or similar programs and have adapted them as in-person or on-line courses in their states. There does not seem to be a process for adjusting these courses for rural systems. The National Association of EMS Physicians was recently named a member of the JCREC. This will be beneficial in addressing the needs cited.

Where We Want to Be

The recommendation selected for the 2018 Tactical Plan is:

"Review all existing EMS medical oversight courses and establish a Rural/Frontier EMS Medical Directors Course which should be made available and distributed through multiple mechanisms to allow maximum access by EMS medical directors."

How We Get There

Objectives (See Appendix C for Action Steps)

1. Research the availability of EMS medical direction courses and assess their rural content.

2. Adapt a medical direction course for rural EMS system use and publish course materials.

Prevention

Where We Are

The role of preventive health services in community paramedicine is well-established and exhaustively discussed in the foundational documents on the future of EMS and EMS 3.0 presented in this document. That EMS has a role in the primary prevention of injuries and medical emergencies, as well as the secondary prevention role of responding to and mitigating their impact once they have occurred, is beyond question.

EMS agencies have a long history of providing some preventive health services in their communities. These include "buckle up" campaigns, child car seat installation, "vial of life", medical alert jewelry and similar efforts to provide patient history for EMS response, heart attack and stroke prevention education through CPR training, blood pressure clinics, and, most recently, the "Stop the Bleed" classes for mass casualty incidents.

Community paramedicine has identified organized services that can be offered specifically for at risk populations. Whether or not an ambulance service is prepared to take on these additional responsibilities must be assessed at each agency. On the one hand, offering the additional community paramedicine services might not require the same service members relied upon for emergency response, and may in fact attract community members not currently involved in EMS. Such services would also raise the profile and awareness of the EMS provider in the community and help with recruitment and public relations. On the other hand, it is another program to be organized, coordinated and supervised. Managers of smaller, rural services may have issues with achieving basic emergency response, may have personnel limitations such as availability (especially if a volunteer), limited management experience and training, or other reasons why taking on anything new is too challenging.

Wake County, North Carolina, EMS developed one of the first successful behavioral health intervention response program, and community paramedicine services are blending social worker, law enforcement and other responders in behavioral response teams around the country.

The Evaluation section of this document recommends promotion and utilization of the Wisconsin Office of Rural Health "*Attributes of a Successful Rural Ambulance Service*" evaluation tool[26] to enable rural service improvement. This tool emphasized the essential components of a successful rural ambulance service, and not only serves as an assessment tool but suggests how improvement can be achieved, especially when used with an accompanying workbook[27].

Where We Want to Be

The recommendation selected to be pursued in this Tactical Plan is, with a behavioral health addition:

"Make prevention one of the EMS-based community health service roles of adequately staffed rural/frontier EMS provider agencies. Behavioral illness prevention and intervention should be considered a component."

As we facilitate dissemination of the Wisconsin tool as part of the Evaluation component work and of the informed self-determination concept as a part of the PIER component plan, there is an opportunity to develop within those tools an item introducing prevention as an appropriate and expected basic role of the community EMS provider.

How We Get There

Objectives (See Appendix C for Action Steps)

1. Explore introducing an item on prevention into the Wisconsin Office of Rural Health's "*Attributes of a Successful Rural Ambulance Service*" assessment tool. Consider behavioral health prevention/intervention as well.

2. Assure that a prevention item exists in any assessment process used for informed self-determination purposes in the Public information, Education and Relations section. Consider behavioral health prevention/intervention as well.

Public Access

Where We Are

In late 1990's Montreal, the integration of triage nurses into the EMS dispatch center function gave early momentum to the *1996 EMS Agenda of the Future* concept that EMS need not handle all patient encounters as emergencies and that EMS might have a preventive role using other forms of clinical or social intervention. In the U.S., the Richmond (Virginia) Ambulance Authority was the early developer of the concept in its Community Health Access Program[28,29].

The National Academy of Emergency Medical Dispatch (now the International Academies of Emergency Dispatch or IAED) developed the "Omega" dispatch determinant code[28,29] which enabled non-emergent calls to EMS dispatch to be moved to a triage nurse for alternative handling. The IAED later developed the Emergency Communication Nurse System (ECNS) to guide the training and certification of triage nurses for this role integrated into the emergency medical dispatch system[30,31]. Many rural communities do not have access to emergency medical dispatch, or even 9-1-1 calling, and this is a limitation in developing these capabilities.

Home health agencies are adopting a variety of patient health measurement capabilities that can be remotely monitored. These provide the monitoring agencies an early alert of a patient's monitored condition that is causing vital signs to wander beyond acceptable limits. This remote monitoring may take the form of scheduled online appointments, the periodic sending of routinely collected data by the patient, or continuous monitoring with set alarms. When an alarm is sounded in whatever manner, the nurse determines an appropriate response. Activation of EMS may or may not include a community paramedicine type alternative response depending upon the extent of coordination between the two entities. Home health agency staff in at least one setting have considered utilizing community paramedics to serve in the monitoring function, providing the coordinated offering of the EMS agency's community paramedicine interventions.

Where We Want to Be

The more integrated and coordinated that home health monitoring, community paramedicine, and home health services can be, the faster and more appropriate the health care system's response will be to a patient whose monitored condition begins to deteriorate. The earlier that this happens the better the opportunity to avoid a medical emergency. In a rural setting, with greater distances between patients and providers, a monitored change routinely communicated to a provider's system will allow an earlier intervention for a patient who may otherwise discount the issue as "not worth the drive/trouble" until it becomes an emergency.

The recommendation selected for the Tactical Plan, therefore, is:

"As home health monitoring devices and automated remote diagnostic technology develop, EMS leaders should pursue roles for EMS in their use to further EMS-based community health services."

How We Get There

Objectives (See Appendix C for Action Steps)

1. Explore increasing the involvement of EMS dispatch and Emergency Communication Nurse (or community paramedic dispatch) systems in health monitoring.

2. Pursue developing the concept of EMS-based home health monitoring integrated with EMS, community paramedicine and home health dispatch.

Communication Systems

Where We Are

Emergency medical services communications systems have not changed greatly since the 2004 *Agenda* however, that is on the verge of great change with the advent of the First Responder Network Authority, or "FirstNet"[32], in 2012, and its private partner FirstNet Built by AT&T[33] in 2017.

"Narrowband" (VHF, UHF, 700 MHz, 800 MHz trunked systems primarily capable of supporting voice communications and some light data like simple ECGs) communications remain the primary staple of dispatch, scene, transport and ambulance to hospital communications. Increasingly, because of perceived patient confidentiality and greater familiarity with devices and applications, EMS agencies utilize commercial wireless phones for calls to hospitals and other purposes. Commercial wireless services have also become accessible with modems in vehicles allowing access to the internet for communicating patient information and records, route guidance, and for other information needed on a call.

As described in the 2004 *Agenda*, commercial wireless access may be compromised in crowd event and emergency settings where EMS personnel have no greater priority status than the general public. Following a lengthy campaign by public safety for federal establishment of a nationwide broadband network dedicated to public safety, FirstNet is now being implemented. It is already being used in areas that have AT&T coverage, with priority and preemption granted to public safety. As the fifth largest wireless network in the country, it affords an almost unbounded bandwidth resource at much less expense than commercial wireless alternatives. It was also shouldered with a rural coverage mandate when created by Congress.

Until FirstNet is completely implemented, with reasonable coverage solutions for rural America, narrowband land mobile radio service needs to be continued. Fortunately, these systems were not as compromised by the "narrowbanding" issue raised in the 2004 *Agenda*, and national consensus standards process (e.g. APCO's Project 25[34]) has provided some assurance of interoperability among vendor products and systems. Unfortunately, the cost of Project 25 compliant devices remains an obstacle for some rural EMS agencies to adopt them.

Where We Want to Be

The Communications System recommendation that was chosen to be pursued in this Tactical Plan is:

"The Universal Service Program fund, Federal Communications Commission, frequency allocation and other national public safety communications organizations and agencies should work to assure that rural/frontier EMS communications are enhanced."

Its selection reflects the continued absence of affordable, universal communications coverage for EMS in rural America. Commercial wireless networks have improved the situation since

2004, but there is less of a business case for them to serve lesser populated areas. FirstNet has the mission to provide service in these areas. Even with the lower cost subscription rates charged by FirstNet in its first year, there is some question about its affordability for small, rural EMS agencies and individual, often volunteer, practitioners who want to use their own devices.

The Universal Service Fund and its Rural Health Care program (which is emphasizing the importance of telemedicine in rural areas) reduce the cost of broadband access for eligible rural health care provider entities like clinics and hospitals. The eligibility categories have not changed since 2004, except to add skilled nursing facilities, and do not include EMS specifically. In June, 2018 the Federal Communications Commission issued new rules for the Health Care Program, significantly increasing its funding[35,36]. Interestingly, the "Final Regulatory Flexibility Analysis (FRFA)" in Appendix B of the Rules issued in the Report and Order lists "Ambulance Services" as a category of small, rural entity potentially affected by the rules. This creates an opportunity that should be pursued. If it does not mean that EMS is eligible for the Rural Health Care program, such eligibility should be sought.

How We Get There

Objectives (See Appendix C for Action Steps)

Pursue eligibility under the Rural Health Care Program for FirstNet coverage and other coverage until FirstNet is available.

Information Systems

Where We Are

Since publication of the 2004 *Agenda*, the National EMS Information System (NEMSIS) has made great evolutionary strides in its ability to collect a breadth and depth of information with which to characterize EMS system performance and to serve as a basis for research. All 56 states and territories have agreed to use NEMSIS as a basis for EMS data collection[37]. NEMSIS houses sufficient data from around the country for reporting on national and state system performance.

There remains a concern that rural EMS system performance measurement and research efforts are hampered by the low volumes of patient encounters and other operational activity in rural systems.

Where We Want to Be

The recommendation selected for the Tactical Plan is:

"Encourage multi-system data collection for specific research and performance improvement (PI) purposes."

With the maturation of NEMSIS-based data reporting systems in states, the 2009 NHTSA published EMS performance measures for NEMSIS Version 2[38], and the contemporary EMS Compass project for NEMSIS Version 3[39] provide a basis of common data for aggregation of data from small, rural systems for analysis. The National EMS Quality Alliance work[40], a continuation of the work started by COMPASS, has the potential to continue this effort.

How We Get There

Objectives (See Appendix C for Action Steps)

1. Assess current status of rural EMS research and data collection capabilities for research.

2. Solicit materials from rural EMS researchers and state EMS data managers describing multi-system data collection methods used.

3. Publish toolkit for rural EMS multi-system research and performance measurement.

Evaluation

Where We Are

The 2004 *Agenda* cited efforts on the federal/national level to improve data collection and performance measurement. Most of those efforts, with the exception of NEMSIS, have run their course and are no longer a part of the fabric of rural EMS evaluation. We remain a nation of EMS service and system "haves" and 'have nots" with small, rural systems generally among the latter, lacking financial, human, and other resources.

The 1996 *EMS Agenda for the Future,* the 2004 *Agenda,* and the EMS 3.0 transformation initiative[41] have pushed EMS agencies and systems toward professionalizing how we do what we have always done: 9-1-1 response and medical transportation. But at the same time, they encourage transforming EMS into a broader partner in meeting community health needs by adopting community paramedicine programs and engaging in preventive health and community services.

Rural EMS agencies that still have a lot of work to do in professionalizing their emergency service delivery need guidance in evaluating where their strengths and weaknesses lie. State and regional EMS systems need to know where to invest training and funding to help those agencies address weaknesses in their organizations. While having weaknesses in the emergency response capability may not preclude taking steps toward community paramedicine (adding certain prevention services may actually help with staff recruitment and other community support), an agency would certainly benefit from a relatively easy, low-cost mechanism to conduct a self-assessment. Regions and states could benefit from aggregating the data from such assessments if it can be collected in a confidential, non-threatening manner.

A recent study of five states that have tried to conduct assessments of rural EMS agencies and/or systems documents varying focus and success[42]. The Wisconsin Office of Rural Health, with assistance from JCREC members, was one of these, and created an agency-level assessment tool, which has now been utilized in several settings with success[43]. This "*Attributes of a Successful Rural Ambulance Service*" can be used to aggregate data to higher levels as well. The FORHP has stimulated many more states to conduct such assessments, and these tools hold promise.

Where We Want to Be

The 2018 Tactical Plan recommendation selected is:

"Fund or otherwise enable the availability of training and toolkits to encourage effective local service/system quality improvement processes."

The phrase "or otherwise enable" was added by the Steering Committee to enhance the feasibility of the recommendation.

How We Get There

Objectives (See Appendix C for Action Steps)

1. Encourage awareness of the "Attributes of a Successful Rural Ambulance Service" assessment tool, and dissemination by state EMS and rural health offices, and by the Indian Health Service (IHS).

2. Evaluate penetration of evaluation tool; repeat as indicated.

Appendix C – Priority Areas for Future Attention – How We Get There (Action Steps)

Note: there are only "TBD" (to be determined) designations for time frames as these will be initiated after the first five higher priority areas in this document have been addressed.

EMS Research

Objectives	Action Steps	Who	Time Frame
1. Assess the adequacy of rural EMS research. Create an agenda for rural EMS research	Update Medline citation listing	TBD	TBD
	Conduct meeting on adequacy of rural EMS research with entities described in recommendation; establish a research agenda to define areas of needed work	FORHP/NAEMSP Rural Committee/ interested JCREC members	TBD
	Develop strategic plan for rural EMS research	TBD following meeting described above	TBD
2. Solicit research center and potential funder interest in areas of research need	Solicit interest of federally funded research centers, state-level and other organizations in needs list projects	TBD following meeting described above	TBD
	Help connect interested research centers with potential sources of funding	TBD following meeting described above	TBD
	Submit proposals for projects	Interested Centers	TBD

Objectives	Action Steps	Who	Time Frame
3. Conduct Projects	Start projects	Interested Centers	TBD
	Complete projects	Interested Centers	TBD

Medical Oversight

Objectives	Action Steps	Who	Time Frame
1. Research the availability of EMS medical direction courses and assess their rural content	Identify primary national and state EMS medical direction courses used in U.S. and assess rural content	NAEMSP and its Rural Committee	TBD
	Identify the best candidate course for adapting to meet rural EMS system needs	NAEMSP and its Rural Committee, with National Association of EMS Educators	TBD
2. Adapt a medical direction course for rural EMS system use and publish course materials	Identify material required to adapt the best candidate course to meet rural EMS system needs	NAEMSP and its Rural Committee, with National Association of EMS Educators	TBD
	Draft course content as identified above	NAEMSP and its Rural Committee, with National Association of EMS Educators	TBD
	Assure opportunity for review of draft by rural EMS and rural health interests	NAEMSP and its Rural Committee, with National Association of EMS Educators	TBD

Objectives	Action Steps	Who	Time Frame
	Produce course materials and make available to public	NAEMSP	TBD

Prevention

Objectives	Action Steps	Who	Time Frame
1. Explore introducing an item on prevention into the Wisconsin ORH *"Attributes."* Tool. Consider behavioral health prevention/intervention as well	Wisconsin EMS and the original JCREC members who contributed to the "Attributes" tool begin meeting to develop consensus on this addition (and any other updates appropriate at this time)	NOSORH JCREC members WI ORH	TBD
	Coordinate introduction of the new material into the tool with the Evaluation section work on promoting and disseminating the tool	NASEMSO NOSORH	TBD
2. Assure that a prevention item exists in any assessment process used for the informed self-determination (ISD) purposes in the Public Information, Education and Relations section. Consider behavioral health prevention/ intervention as well	As a national template for the ISD process is established, develop a prevention component consistent with the one developed for the Wisconsin ORH tool above	NASEMSO Paramedic Foundation FORHP	TBD

Public Access

Objectives	Action Steps	Who	Time Frame
1. Explore increasing the involvement of EMS dispatch and ECNS (or community paramedic dispatch) systems in health monitoring	Contact and explore this concept with IAED staff	NASEMSO	TBD
	Solicit examples of this practice through NASEMSO and NAEMT CP-MIH listservs and through NAEMT's list of respondents to its 2018 MIH-CP survey	NASEMSO	TBD
	Explore the concept of community paramedic triage model in the emergency medical dispatch system with IAED	NASEMSO	TBD
2. Pursue developing the concept of EMS-based home health monitoring integrated with EMS, community paramedicine and home health dispatch	Explore with National Association for Home Care and Hospice (NAHC) and its affiliate Home Care Technology Association of America (HCTAA) and the Home Care Association of America (HCAOA)	NASEMSO NOSORH	TBD
	Consider this concept in rural health policy platform	NRHA	TBD

Communication Systems

Objectives	Action Steps	Who	Time Frame
Pursue eligibility under the Rural Health Care Program for FirstNet coverage and other coverage until FirstNet is available	Determine EMS eligibility	NASEMSO through FirstNet	
	Determine FirstNet eligibility	NASEMSO through FirstNet	
	Publicize availability to rural EMS community	NASEMSO through Joint National EMS Leadership Forum associations; FirstNet	TBD
	Seek inclusion of ambulance services through law change or FCC interpretation if EMS proves ineligible under current law/rules	Current Joint Committee on Rural Emergency Care association through NRHA policy process	TBD

Information Systems

Objectives	Action Steps	Who	Time Frame
1. Assess current status and link with Research component above	Use the Research component Action Step above, to use Medline search to detect multi-system research and PI efforts reported in literature	TBD following research adequacy meeting described in Research section above	TBD
	Create a catalogue of these citations and publish as appropriate	TBD following meeting described above	TBD
2. Solicit materials from rural EMS researchers and state EMS data managers describing multi-system data collection methods used	Open solicitation of known rural health research centers and academic departments	TBD following meeting described above	TBD
	Open solicitation of NASEMSO Data Managers Council members	NASEMSO and TBD following meeting described above	TBD
	Compile information solicited	TBD following meeting described above	TBD
3. Publish toolkit for rural EMS multi-system research and	Create toolkit from information collected availability on JCREC member	TBD following meeting described above	TBD

Objectives	Action Steps	Who	Time Frame
performance measurement	Publish on JCREC member websites	TBD following meeting described above	TBD

Evaluation

Objectives	Action Steps	Who	Time Frame
1. Encourage awareness of the "*Attributes of a Successful Rural Ambulance Service*" assessment tool, and dissemination by, state EMS and rural health offices, and by the Indian Health Service (IHS)	Create a package for digital distribution with the assessment tool, accompanying workbook and sample reports from known uses of the tool. Coordinate with Prevention section activities	NASEMSO Rural Committee NRHRC Those involved in Prevention section work	TBD
	Distribute to NASEMSO and NOSORH members, and the IHS	NASEMSO NOSORH NRHRC	TBD
	Feature presentations on the tool at NOSORH and NASMEMSO regional and annual meetings	NASEMSO NOSORH	TBD
2. Evaluate penetration of evaluation tool; repeat as indicated	Survey state EMS offices on distribution of tool, adoption by agencies, and reports that have resulted	NASEMSO	TBD
	Repeat 2019 dissemination and promotion efforts as indicated by survey	NASEMSO NOSORH	TBD

Appendix D – References

1. https://nasemso.org/wp-content/uploads/Rural-Frontier-EMS-Agenda-for-the-Future.pdf; accessed 11/26/18.
2. https://www.ems.gov/pdf/advancing-ems-systems/Provider-Resources/EMS_Agenda_For_The_Future_2010.pdf; accessed 11/26/18.
3. http://www.cengage.com/resource_uploads/downloads/1435480279_241560.pdf; accessed 11/26/18.
4. http://emsagenda2050.org/; accessed 11/28/18.
5. https://nasemso.org/wp-content/uploads/Rural-Frontier-EMS-Agenda-for-the-Future.pdf, pp. 6-7; accessed 11/26/18.
6. Rowley T, *Solving the Paramedic Paradox*, Rural Health News, 8/3/Fall 2001.
7. http://www.naemt.org/docs/default-source/2017-publication-docs/mih-cp-survey-2018-04-12-2018-web-links-1.pdf?Status=Temp&sfvrsn=a741cb92_2; accessed 11/30/18.
8. https://nasemso.org/wp-content/uploads/CP-MIH-Survey-2014-2015.pdf; accessed 11/28/18.
9. https://www.nasemso.org/Projects/MobileIntegratedHealth/Documents-Resources.asp; accessed 11/28/18.
10. https://www.naemt.org/initiatives/mih-cp; accessed 11/28/18.
11. http://ircp.info/; accessed 11/26/18.
12. cpif.communityparamedic.org; accessed 11/26/18.
13. Organization, Staffing, and Functions of State EMS Offices; National Association of State EMS Officials Monograph; NHTSA/USDOT. April, 2017.
14. https://content.nremt.org/static/documents/IOM-fact-sheet.pdf; accessed 11/30/18.
15. https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AmbulanceFeeSchedule/Downloads/CMS-1002-FC.pdf; accessed 11/30/18.
16. https://naemt.org/initiatives/ems-transformation; accessed 11/27/18.
17. https://nasemso.org/wp-content/uploads/Rural-Frontier-EMS-Agenda-for-the-Future.pdf; APPENDIX J — Defining "Rural" For Reimbursement, pp. 92-101.
18. https://www.nasemso.org/documents/EMS-Workforce-Guidelines-11Oct2013.pdf; accessed 12/2/18.
19. https://store.csagroup.org/ccrz__ProductDetails?viewState=DetailView&cartID=&sku=2704398; Psychological health and safety in the paramedic service organization, standard # Z1003.1-18; published by CSA, January, 2018.
20. https://www.ems.gov/pdf/education/EMS-Education-for-the-Future-A-Systems-Approach/EMS_Education_Agenda.pdf; accessed 12/2/18.
21. https://naemse.org/; accessed 12/2/18.
22. https://nasemso.org/wp-content/uploads/Rural-Frontier-EMS-Agenda-for-the-Future.pdf; pp. 39-41; accessed 11/26/18.

23. *ibid*.
24. Sayre MR, White LJ, Brown LH, McHenry SD; National EMS Agenda Writing Team. National EMS Research Agenda. *Prehospital Emergency Care*, Jul-Sep 2002;6(3 suppl): S1-43.
25. http://www.emergencymedicine.pitt.edu/sites/default/files/Rural%20EMS%20Systems.pdf; accessed 12/1/18.
26. http://worh.org/attributes-successful-rural-ambulance-service; accessed 12/3/18.
27. http://worh.org/sites/default/files/EMS%20Attributes%20of%20Success%20Workbook.pdf; accessed 12/3/18.
28. https://www.jems.com/articles/print/volume-34/issue-8/vehicle-ops/omega-project-reclassifying-no.html?c=1; accessed 12/3/18.
29. https://www.ems1.com/ems-advocacy/articles/1977763-Q-A-What-is-the-future-of-911-dispatch/; accessed 12/3/18.
30. http://www.emergencydispatch.org/about_ecns; accessed 12/3/18.
31. https://iaedjournal.org/long-time-coming/; accessed 12/3/18.
32. https://www.firstnet.gov/; accessed 11/30/18.
33. https://www.firstnet.com/; accessed 11/30/18.
34. https://www.apcointl.org/spectrum-management/spectrum-management-resources/interoperability/p25/; accessed 12/3/18.
35. https://docs.fcc.gov/public/attachments/DOC-351946A1.pdf; accessed 12/3/18.
36. https://docs.fcc.gov/public/attachments/FCC-18-82A1.pdf; accessed 12/3/18.
37. https://nemsis.org/media/referenceMaterials/documents/NEMSIS%20MOU%20MEMBERSFINAL52.pdf; accessed 12/3/18.
38. www.ems.gov/pdf/811211.pdf; accessed 12/3/18.
39. www.ems.gov/projects/ems-compass.html; accessed 12/3/18.
40. www.nemsqa.org; accessed 12/3/18.
41. https://naemt.org/initiatives/ems-transformation; accessed 12/3/18.
42. http://worh.org/library/state-flex-program-rural-ems-assessment-strategies; accessed 12/3/18.
43. http://worh.org/attributes-successful-rural-ambulance-service; accessed 12/3/18.
44. https://ocpe.mcw.edu/emergencymed/content/naemsp%C2%AE-medical-directors-overview-course-2017-2018; accessed 12/3/18.
45. https://www.naemt.org/initiatives/ems-transformation; accessed 12/30/18.
46. https://www.ems.gov/nemsac.html; accessed 12/29/18.
47. https://www.ems.gov/pdf/NEMSAC-Charter-4-21-17-4-21-19.pdf; accessed 12/29/18.
48. http://www.dhs.mn.gov/main/idcplg?IdcService=GET_DYNAMIC_CONVERSION&RevisionSelectionMethod=LatestReleased&dDocName=dhs16_177475; accessed 12/29/18.
49. https://nasemso.org/wp-content/uploads/CP_State_Status_Board_CURRENT.pdf; accessed 12/29/18.
50. http://emsbillingservices.com/wp-content/uploads/2015/04/Rising_costs.pdf; accessed 12/31/18.

51. https://www.hsdl.org/?view&did=718817; accessed 12/31/18.
52. https://www.gao.gov/products/GAO-03-986; accessed 12/31/18.