



ACCESS TO EMERGENCY MEDICAL SERVICES IN RURAL COMMUNITIES

POLICY BRIEF AND RECOMMENDATIONS TO THE SECRETARY

NOVEMBER 2022



National Advisory Committee on Rural Health and Human Services

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EDITORIAL NOTE

During the 90th meeting of the National Advisory Committee on Rural Health and Human Services (hereinafter referred to as “Committee”), members explored issues related to the access to emergency medical services (EMS) in rural areas. Typically, the Committee travels to a rural part of the country to hold its meeting and to visit local providers, allowing members to hear directly from stakeholders. However, due to the COVID-19 pandemic, the meeting was held virtually.

Rural EMS agencies from different regions of the country were gathered via Zoom to create virtual site visits. Committee members were divided into two groups, one that would focus on the financial issues related to EMS service in rural areas, the other on workforce issues. These discussions helped the committee formulate this policy brief and summaries of which can be found in the Appendix.

ACKNOWLEDGEMENTS

The Committee acknowledges the assistance and contributions of those who helped plan the meetings as well as those who presented to the members. These individuals were: Gary Wingrove (the Paramedic Foundation), Yvonne Jonk (Maine Rural Health Research Center), Kristi Martinsen (Federal Office of Rural Health Policy), Max Sevareid (National Highway Traffic Safety Administration Office of EMS), Maria Durham (Centers for Medicare & Medicaid Services), Dia Gainor (National Association of State EMS Officials), Guy Dansie (Utah EMS Bureau), Sam Hurley (Maine Office of EMS), Jamie Pafford-Gresham (Pafford Medical Services), Jim Finger (Rutland Regional Ambulance Services), Jules Scadden (Dystart Ambulance Services), Shawn Phillips (Lafayette County EMS), Loretta Christensen (Indian Health Service), Darrell LaRoche (IHS), and Tahleah Chappel (Federal Office of Rural Health Policy).

The Committee also extends its appreciation to Patrick Grady for coordinating the activities of this meeting, summarizing the Committee’s findings, and drafting this policy brief.

RECOMMENDATIONS AND CONSIDERATIONS

The Committee is charged with advising the Secretary of the U.S. Department of Health and Human Service (HHS or the Department) on rural issues. In response to that charge, the Committee includes recommendations that fall under the authority of the Secretary. The Committee also includes a number of policy considerations that fall outside of HHS authority but could be addressed by other policy makers.

Recommendations:

Recommendation 1: The Committee recommends the Secretary support ongoing research on ambulance deserts and their impact on health care outcomes.

Recommendation 2: The Committee recommends the Secretary ensure in regulations and guidance that community paramedicine providers have the ability to deliver services to Medicare beneficiaries "incident to" the services of a physician/non-physician practitioner and encourages that such policies allow for community paramedicine providers to practice under general rather than direct supervision.

Recommendation 3: The Committee recommends the Secretary support analysis of the use of on-site and en-route telehealth in emergency medical services (EMS) for appropriate triage care to identify future policy options.

Recommendation 4: The Committee recommends the Secretary consider CMS ground ambulance data collection in future rulemaking on the Ambulance Fee Schedule. The Secretary should also consider the MedPAC study on standby costs to help inform future policy making on Medicare ambulance reimbursement.

Recommendation 5: The Committee recommends the Secretary direct the CMS Innovation Center to develop a pilot payment model that is focused on addressing chronic disease and emergency medical service gaps from a population health perspective.

INTRODUCTION

Rural emergency medical services (EMS) provide essential care to remote and isolated communities, however, they are often overstretched, understaffed, and underfunded. Rural EMS is faced with greater physical distances when responding to calls, difficulty recruiting and retaining its workforce, and higher fixed costs. These types of issues are not exclusive to rural areas; however, they are amplified by rurality. Additionally, EMS is predominately locally based in the United States, which complicates regional coordination. In some areas there is not an adequate EMS presence to respond to emergencies, and in other areas there are overlapping service areas. Altogether, these issues have made rural EMS provision strained, uneven, and for some communities, unsustainable. Some of the challenges faced in providing EMS in rural areas are directly linked to issues at the Federal level (reimbursement, training, etc.), while others are at the state or local level (such as training standards, financial support, etc.).

Note: While air ambulance services have an important role to play in the provision of EMS in rural areas, the Committee focused its discussions on ground ambulance services, and as a result, this policy brief only focuses on ground ambulance services.

BACKGROUND

Rural Access Issues

Rural geography and demography pose fundamental problems for EMS access, as the goal is to provide timely care for the patients that rely on them. Vast ambulance coverage areas, challenging terrain and weather, and delayed notifications lead to prolonged time between the emergency incident and the patient's arrival at the hospital.¹ This delay in EMS activation and travel time can be especially problematic when a patient is experiencing a condition that requires rapid treatment such as a heart attack, stroke, or severe trauma. Research supports the idea that EMS response times are longer in rural areas. A 2017 article published in *JAMA surgery* found that the national average from the time of a 911 call to arrival on scene was 7 minutes. However, that time increases to more than 14 minutes in rural settings, with nearly 1 of 10 encounters waiting almost 30 minutes for the arrival of EMS personnel.² The National Emergency Medical Services Information System (NEMSIS) hosts a national database that, in addition to tracking other data, has information on the breakdown of an average call time base on urbanity. Below, Figure 1 shows how Frontier, Rural, Suburban, and Urban calls times differ. The components of each call time are broken out into chute time (the time between when a call is dispatched to the time an emergency vehicle begins to travel to the location), scene response, scene time, transport, and return to service. To understand each step of the response timeline, please reference Appendix B.

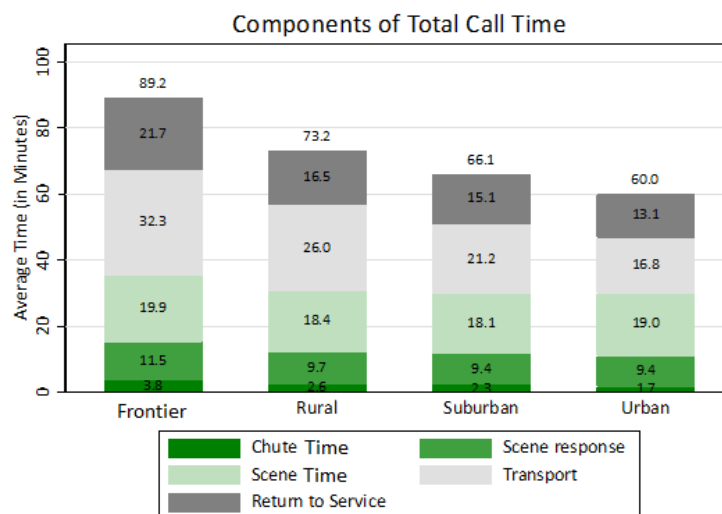


Figure 1: Components of Total Call Time

On average, frontier and rural calls take longer than suburban and rural calls. As is shown in Figure 1, a significant portion of this difference can be attributed to longer average transport and return to service times. This issue of longer travel times could potentially be exacerbated as the Rural Emergency Hospital (REH) becomes a new provider type in 2023. REHs will provide outpatient hospital and emergency department (ED) services without acute care inpatient services. As part of the statutory eligibility requirements, REHs must transfer patients for acute inpatient cares. This requirement could pose an additional burden on rural EMS providers as they may be responsible for more transfers from REHs to full-service hospitals. The Committee focused on the REH provider type in its October 2021 Policy Brief to the Secretary.³

Regardless of the applied definition, rural health researchers, advocates, policymakers, communities, and programs generally describe rural populations as older, sicker, and poorer than their urban counterparts.⁴ Recognizing that the level of rurality and the individual nature of a rural community can greatly vary, generally rural communities are older, see higher rates of chronic health conditions, and report a lower median income than urban. These factors affect how EMS providers serve rural communities. Rural EMS providers report that they respond to a greater share of higher acuity calls where the need for medical attention is more immediate. NEMSIS tracks acuity data and breaks out calls into three categories: lower acuity, emergent, and critical. In lower acuity calls the patient presents with symptoms of an illness or injury that have a low probability of progression to more serious disease or development of complications. In emergent calls the patient presents with symptoms of an illness or injury that may progress in severity or result in complications with a high probability for morbidity if treatment is not begun quickly. Finally, in critical calls the patient presents with symptoms of a life-threatening illness or injury with a high probability of mortality if immediate intervention is not begun to prevent further airway, respiratory, hemodynamic and/or neurologic instability. Below, Figure 2 displays NEMSIS data showing that rural providers respond to higher acuity calls at a higher rate than their urban and suburban colleagues. While frontier providers receive fewer calls the proportion of critical calls that frontier providers respond to is over twice that of urban providers.

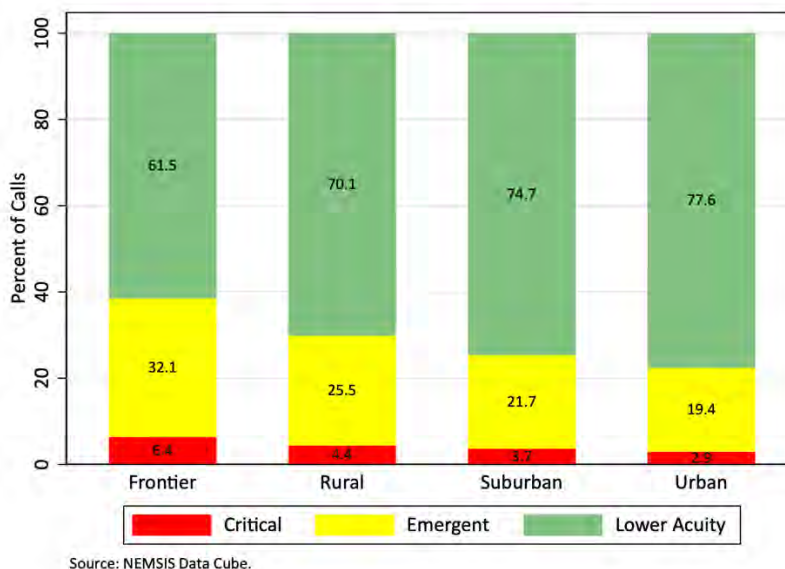
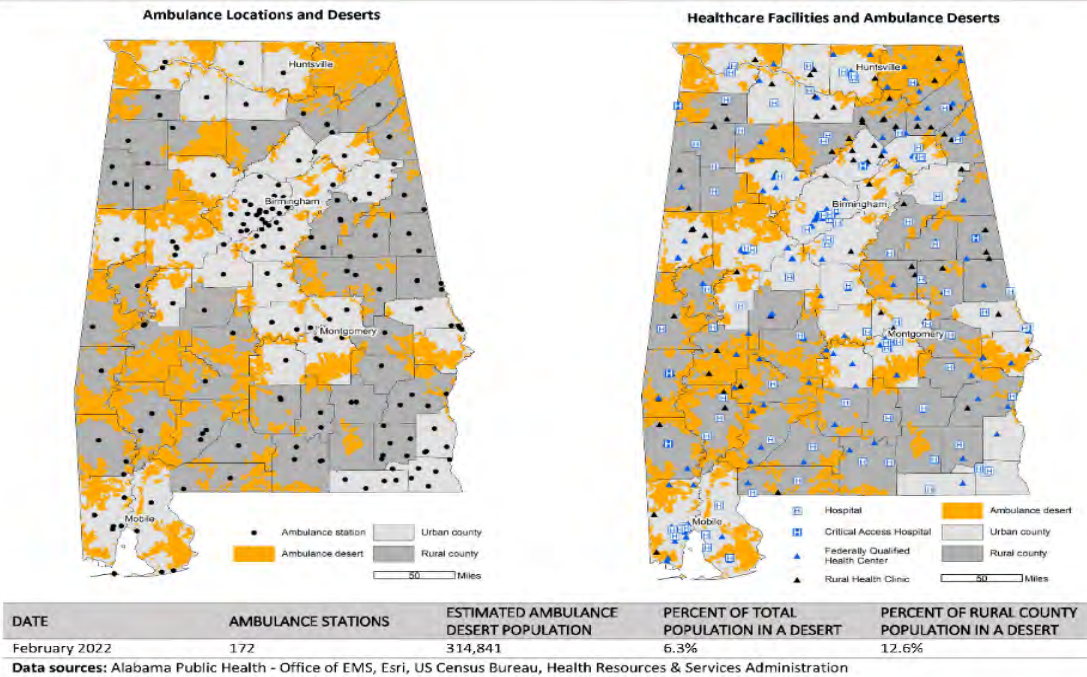


Figure 2: Acuity Level of Call

Rural hospital closures are also a factor in EMS access. Research indicates that rural ambulance travel times increase in the year directly following a closure.⁵ The Committee is concerned that closures are adding to wait times for rural residents. The use of averages are helpful in understanding the rural versus urban disparities broadly, however, some rural areas struggle with ambulance access more than others do. This has led some to coin the term ‘ambulance deserts’ to describe areas that have limited or no access to timely ambulance services. The Rural Health Research Center (RHRC) at the University of Southern Maine is currently studying this issue by mapping where ambulance deserts are on a state by state basis. Their research defines an ambulance desert as *populated census blocks with geographic centers outside of a 25-minute ambulance service area*. When the Committee met, this study was only part way through, but the researchers were able to share some of the early results. Below is one of the five maps that were shown to the members during the Committee meeting. The yellow areas represent ambulance deserts. Appendix C has the full set of preliminary state maps of ambulance deserts.

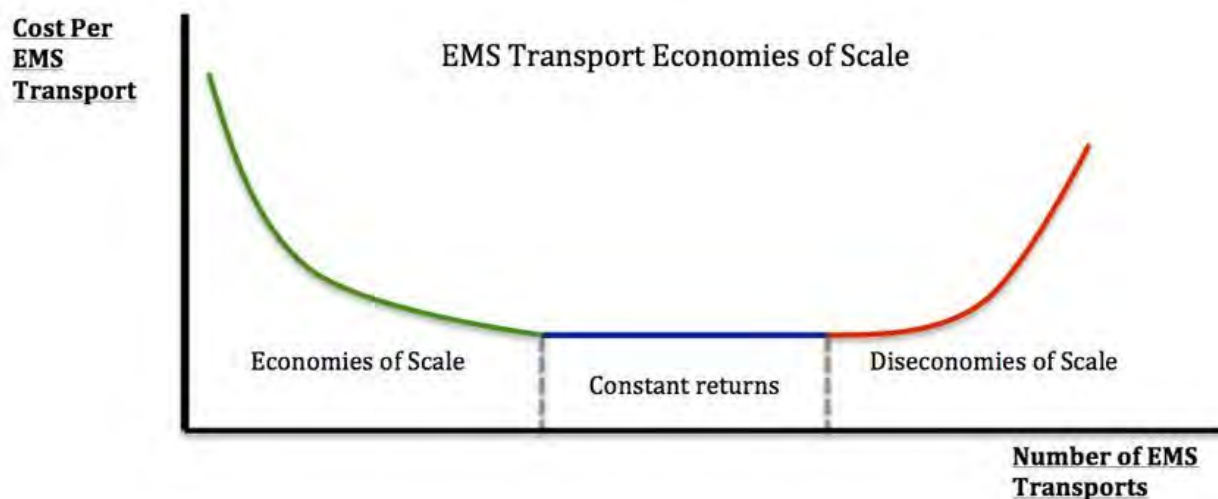
AMBULANCE DESERTS: ADDRESSING GEOGRAPHIC DISPARITIES IN THE PROVISION OF AMBULANCE SERVICES

ALABAMA



Financing EMS

Financing rural EMS is inequitable due to factors such as lower call volume, longer miles of travel, and an eroding tax base.⁶ The current CMS payment system, the Ambulance Fee Schedule, reimburses ambulance services a base rate for the level of service plus payment for mileage and applicable adjustment factors. The payment doesn't vary based on the patient care need, just based on mileage, but the base payment includes patient care services as part of the underlying cost of ambulance. This has led to frustration for ambulance providers due to the fact that they get paid the same for a 20-mile trip regardless of whether the patient needs minimal monitoring and no drugs or if that patient requires active life support measures for the entire transport to keep them stable.⁷ Moreover, rural EMS services incur significant costs maintaining sufficient personnel that are ready to respond at all times. They also face a higher burden with fixed costs, such as ambulances, equipment maintenance, facility rental costs, and employee salaries because low call volume makes it hard to recoup these expenses. Additionally, training for rural EMS providers can often cost more than urban EMS providers due to mileage and the time off required to attend classes, expenses that are often not reimbursed. These challenges are less of an issue in urban areas as per-run ambulance costs decline with higher run volumes.⁸ The low call volume in rural areas makes achieving economies of scale difficult. A visualization of this concept is provided below.



Source: Nathan Stanaway¹

The federal government's role in financing EMS has changed over time. In 1973, the EMS Systems Act of 1973 provided funding for the creation of more than 300 EMS systems across the nation. Funds were also allocated for future planning and growth.⁹ After nearly a decade of expansion, the Omnibus Budget Reconciliation Act of 1981 replaced the direct funding model with broader preventative health block grants.¹⁰ Once states had greater discretion regarding the use of funds, most chose to spend the money in areas of need other than EMS,¹¹ leaving many county and municipal governments with the primary responsibility for financing their EMS. This dynamic, the devolution of responsibility for funding services to the local level, posed a challenge to rural areas as many have and continue to experience population loss, weakening the tax base from which services like EMS can be funded.

In 1997, the Balanced Budget Act (BBA) of 1997 mandated that CMS implement a national fee schedule for ambulance services as a benefit under Medicare Part B. The Ambulance Fee Schedule (AFS) applies to all ambulance services, including volunteer, municipal, private, independent, and institutional providers, i.e., hospitals, critical access hospitals (except when it is the only ambulance service within 35 miles), and skilled nursing facilities. Today, CMS has add-on payments for providers in areas that are designated rural and super rural.² The AFS leads the way on payment policy, as commercial payers tend to mirror CMS payment policies.¹² Today, ambulance services are typically supported by fee-for-service public and private insurance payments and other funding sources (i.e., tax revenue, charitable contributions, and grants). However, unlike other emergency services such as police and fire departments, ambulance services infrequently receive direct funding on a local or regional level. Since the passage of the EMS Systems Act almost 50 years ago, EMS has experienced a loss of direct federal funding, that has prevented the full realization of the goal of the act -- the regional coordination and the improvement of care across the country.¹³

¹ Stanaway, Nathan. "How EMS agencies become stronger through consolidation" *Paramedic Chief Digital Edition*, November 2015. [How EMS agencies become stronger through consolidation \(ems1.com\)](https://www.ems1.com).

² CMS goes into more detail on the add-on payments for rural and super rural providers in their AFS public use files, which can be found at this link. <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AmbulanceFeeSchedule/afspuf>.

Rural Health Workforce Issues

Workforce shortages are endemic across all health professions in rural America, and this is no different for EMS. There are some unique factors for EMS that should be considered when thinking about rural EMS such as declining volunteerism, the financial and time burden of certification and re-certification, and the difficult nature of the job.

Reliance on volunteers. Rural ambulance services disproportionately rely on volunteers to staff ambulances and provide emergency services.¹⁴ A study published in 2020 found that 13% of all EMS professionals serve as volunteers, and of that group 74% reported working in rural communities.¹⁵ In that same study, 70% of EMS professionals that said they were being paid reported working in urban communities. These findings are based on cross-sectional evaluation of EMS professionals who recertified their National EMS Certification between October 1, 2017 and March 31, 2018 or October 1, 2018 and March 31, 2019. While, the findings are gleaned from a subset of all EMS professionals, they do provide evidence that rural EMS is generally heavily reliant on volunteers. In addition to this data, the Committee also heard from EMS professionals serving in rural areas that they are seeing a decline in the level of volunteerism, which adds to staffing difficulties. Even with this reduction in volunteerism many rural ambulance services employ a blended workforce of both volunteers and paid staff. Low call volume in rural areas and the difficulty that providers have with reimbursement drive this issue as well. Because of this dynamic, directors of rural ambulance services face issues recruiting, training, and retaining EMS professionals.

There are different levels of training certification that an EMS professional can attain. State governments and their offices of EMS are responsible for setting EMS training standards and certification levels. Generally, there are four levels of certification for EMS professionals that are nationally recognized in NHTSA's National Registry of Emergency Medical Technicians. In order of most basic to most advanced, they are Emergency Medical Responder (EMR), Emergency Medical Technician (EMT), Advanced Emergency Medical Technician (AEMT), and Paramedic.¹⁶ With each level of certification, more training and continuing education is required and this places a substantial financial burden on small, low volume ambulance services.¹⁷

In addition to larger forces like declining volunteerism and reimbursement issues associate with the low call volume in rural, the challenging nature of working in EMS makes recruitment and retention of workers, paid or volunteer, difficult. During the meeting, Committee members heard from many EMS providers about the emotional trauma that they incur as a result of their job. The Committee would like to see more support for EMS volunteers and professionals to help them deal with the trauma associated with their jobs. Additionally, EMS workers are being asked to work in high-stress environments at odd hours. For some, the compensation and benefits offered are simply not enough to take or stay in a rural EMS job.

Telehealth

As the core issues of EMS access, financing, and workforce persist, there have been innovations in telehealth and transportation, which have shown promise for improving EMS care and easing the burdens on EMS volunteers.¹⁸ In EMS, telehealth concepts are just now developing in light of the widespread adoption of telehealth during the COVID-19 Pandemic. Telehealth utilization in rural EMS could improve patient outcomes by rapidly connecting them with specialized care. EMS systems could also benefit as telehealth could improve their efficiency, enhance integration with the health care system, and improve decision making with patient care.¹⁹ For example, telehealth could be helpful in deciding whether a

patient needs to go to a larger hospital with a higher-level trauma center or whether they can be driven to a smaller rural hospital or critical access hospital (CAH)—utilizing resources more effectively. While the benefits of this leveraging of technology are obvious, there is still much to be learned about how financially limited rural EMS providers will pay for this kind of technology.

Air Ambulance

Air ambulances have long played a critical role as a transportation option where long distances and transport times demand a faster and more direct option. A report found that “over the past few years, the air ambulance industry appears to be changing, with fewer non-profit and hospital-based providers and more for-profit providers, and an increase in the overall number of air ambulance bases.” Air ambulance trips are very expensive, and there is potential for large out-of-pocket costs. Air ambulances previously were not allowed to send balance bills (when an out-of-network provider bills an individual for the difference between the billed charge and the amount paid by their plan or insurance) to Medicaid or Medicare, but privately insured individuals do not have the same protection. The No Surprises Act, a component of the Consolidated Appropriations Act, 2021, partially addressed surprise air ambulance bills. The law took effect January 1, 2022 and now privately insured patients will pay only the deductibles and copayment amounts that they would have paid for in-network air ambulance providers, and balance billing will not be allowed.

Source: Turrini, Gina et al. “Air Ambulance Use and Surprise Billing.” *Assistant Secretary for Planning and Evaluation Office of Health Policy*. September 2021.

<https://aspe.hhs.gov/sites/default/files/2021-09/aspe-air-ambulance-ib-09-10-2021.pdf>.

Federal Programs

Among the federal agencies that support EMS programs two have the most direct impact on EMS activities nationally, the Office of EMS, located in the National Highway and Transportation Safety Administration (NHTSA), and the Centers for Medicare and Medicaid Services (CMS).

NHTSA’s Office of EMS is the dedicated federal office for improving EMS systems, collaborating on EMS standards, and collecting nationwide EMS data. The office’s mission is to reduce death and disability by providing leadership and coordination to the EMS community in assessing, planning, developing, and promoting comprehensive, evidence-based emergency medical services and 911 systems.²⁰

To carry out their mission, the office works with partners from all levels of government as well as individuals in the EMS community. This collaboration was formally organized under the Federal Interagency Committee on EMS (FICEMS), which includes representatives from all federal agencies with EMS programs, and the National EMS Advisory Council (NEMSAC), which is composed of leaders in the EMS community who advise NHTSA on its projects and the future of EMS nationwide.²¹ In 2020, NEMSAC released a report on rural and volunteer EMS recruitment and retention.²² The Committee is encouraged by the long-term partnership between NHTSA and HHS through FICEMS. This partnership is valuable because NHTSA provides transportation and safety focus while working on EMS issues whereas the HHS focus is on the health care aspect of EMS. The collaboration between the two entities within FICEMS strengthens efforts to assure improved EMS access, quality, and safety.

The Office of EMS also funds the National EMS Information System (NEMSIS), which is the national database for EMS data from all states and territories.²³ The goal of NEMSIS is to improve understanding of, confidence in, and support for EMS data collection and analysis across all target audiences within the EMS community. NEMSIS provides the framework for collecting, storing, and sharing standardized EMS data from States nationwide. The NEMSIS uniform dataset and database help local, State and national EMS stakeholders more accurately assess EMS needs and performance, as well as support better strategic planning for the EMS systems of tomorrow. Data from NEMSIS is also used to help benchmark performance, determine the effectiveness of clinical interventions, and facilitate cost-benefit analyses.

CMS

As a large payer of ambulance services, CMS influences the viability of ambulance services across the country. Since its inception in the early 2000s The Medicare Ambulance Fee Schedule (AFS) has determined reimbursement rates for ambulance services. The AFS is updated each year and factors in rurality in its payment model. In 2018, Congress approved temporary add-on payments depending on the level of rurality of an ambulance run.

In 2007, CMS began to breakdown the geographical area definitions by zip code and created urban, rural and super rural designations. This change was in response to public requests and advocacy by the ambulance community. The new area definitions created were urban, rural, and super rural. These definitions were last updated in 2015-2016 based off on the 2010 Census and are still in place.²⁴

Temporary add-on payments for rural ambulance provider and suppliers are routinely updated by Congress. The temporary add-on payment for ground ambulance services that originate in rural areas (as defined by the ZIP code of the point of pickup) is a 3 percent increase in the base and mileage rate. Additionally, there is a 22.6 percent increase in the base rate for ground ambulance transports that originate in an area that is within the lowest 25th percentile of all rural areas arrayed by population density (known as the “super rural” bonus). Most recently, the Bipartisan Budget Act of 2018 extended the add-on payments through December 31, 2022.²⁵

Currently, CMS is conducting project called the Medicare Ground Ambulance Data Collection System with a select group of ambulance providers and suppliers. This data collection systems have been collecting information on cost, utilization, revenue, and other service characteristics since January 1, 2020 and will continue to do so through 2024. The information collected will be used to evaluate the extent to which reported costs relate to payment rates under the AFS, as well as to collect information on the utilization of capital equipment and ambulance capacity, and the different types of ground ambulance services furnished in different geographic locations, including rural and super rural areas.

Finally, Emergency Triage, Treat, and Transport (ET3) is a CMS Center for Medicare and Medicaid Innovation (CMMI) voluntary, five-year payment model implemented on January 1, 2021 that provides greater flexibility to ambulance care teams and 911 centers to address the emergency health care needs of Medicare fee-for-service beneficiaries during and following a 911 call. CMS will continue to pay to transport a Medicare fee-for-service beneficiary to a hospital emergency department or other covered destination. In addition, under the model, CMS will pay participants to 1) transport to an alternative destination partner, such as a primary care office, urgent care clinic, or a community mental health center (CMHC), or 2) initiate and facilitate treatment in place with a qualified health care partner, either at the scene of the 911 emergency or via telemedicine.²⁶ While this model is promising, eligibility to participate

in the ET3 Model is conditioned on the applicant proposing a model region located in a state or states where at least 15,000 Medicare FFS emergency ambulance transports occurred in the 2017 calendar year.²⁷ As a result, many rural providers were unable to take part in the model due to insufficient transport volume.

Other HHS Efforts

Elsewhere in HHS there are offices dedicating resources towards improving EMS access, training, and quality. These programs are based in HRSA, SAMHSA, and IHS.

The Medicare Rural Hospital Flexibility (Flex) Program provides funding to states with rural hospitals for the creation of rural health networks, promotes regionalization of rural health services, and improves access to hospitals and other services for rural residents.²⁸ HRSA's Federal Office of Rural Health Policy (FORHP) runs the Flex program, and includes an optional EMS component to it. The EMS component focuses on two primary areas of concern for rural EMS, improving the organizational capacity of rural EMS services and improving the quality of those services.²⁹

Treating infants, children, and teens seeking emergency medical care requires specialized pediatric skills, training, and equipment. HRSA's Maternal Child and Health Bureau (MCHB) operates the Emergency Medical Services for Children (EMSC) Program to improve access and quality of emergency care for children. EMSC expands and improves emergency care for children through research, partnership, and practice. In 2021, the program expanded efforts aimed at increasing the number of hospitals in rural, remote and/or tribal communities that are recognized by a state, regional, or territorial pediatric medical recognition program and increasing the number of pediatric emergency care coordinators in rural, remote, and/or tribal EMS agencies.³⁰ Currently, Colorado, Wisconsin, Kentucky, and Tennessee are taking part in the program using the funds to start initiatives to increase pediatric readiness in their hospitals, identify the needs for pediatric care coordinators, and provide statewide comprehensive training on pediatric care.³¹

In 2020 SAMHSA began administering the Rural EMS Training Program. The program's purpose is to recruit and train EMS personnel in rural areas with a particular focus on addressing mental and substance use disorders. This one-year program awards each grant recipient up to \$200,000. The awarded grant money can be spent on training and certification for EMS staff. The required activities for the program are:

- Train rural EMS personnel as appropriate to maintain licenses and certifications relevant to serve in an EMS agency, conducting courses that qualify graduates to serve in an EMS agency;
- Fund specific training to meet federal or state licensing or certification requirement;
- Ensure rural EMS personnel are trained on mental and substance use disorders and care for people with such disorders in emergency situations. This training can be provided via SAMHSA's Technology Transfer Centers;
- Acquire emergency medical services equipment (medical equipment purchase requires approval by SAMHSA); and
- Purchase of the opioid overdose antidote Naloxone and train EMS personnel on the use in emergency opioid overdose situations in rural areas.

Finally, under its statutory authority, the Indian Health Service (IHS) serves as a payor for EMS in tribal areas. Additionally, IHS operates the IHS Emergency Medical Services program to provide assistance to American Indian and Alaska Native people through the development of comprehensive EMS systems.³²

POLICY RECOMMENDATIONS

The Committee is charged with advising the Secretary of the U.S. Department of Health and Human Service (HHS) on rural issues. In response to that charge, this brief includes recommendations related to access to EMS, workforce, and reimbursement, areas which fall under the authority of the Secretary. The Committee also includes a number of policy considerations that fall outside of HHS authority but could be addressed by other policy makers.

Access to EMS

The Committee's recommendations to improve access to EMS in rural areas centers on the principles of improving our understanding of existing EMS capacity, funding services in areas where EMS is the most inaccessible and supporting new innovative models of care that utilize EMS as resource for rural communities.

The University of Southern Maine, a Rural Health Research Center (RHRC) funded by FORHP, will release a policy brief³³ on ambulance deserts in the Fall of 2022. This brief will shed light on an of the nation's EMS capacity and where there are gaps in EMS access. This research is the first of its kind to look into of the reality of ambulance deserts and will raise additional questions about the nature of these deserts as well as why they exist. The Committee feels that it is important to continue to support this research so that policymakers and the general public can develop solutions to this issue.

Recommendation 1: The Committee recommends the Secretary support ongoing research on ambulance deserts and their impact on health care outcomes.

While there is still more to learn about ambulance deserts, the Committee feels that there is already enough evidence to support the idea that there is a need to create a program that funds critical ambulance services in areas where ambulance deserts already exist. The Committee encourages the Secretary to work with Congress to create a grant program to expand emergency medical service areas into ambulance deserts.

The Committee heard from EMS experts on the value that community paramedicine could provide rural communities. Paramedics having attained a higher level of training than EMTs are well suited to serve residents in rural communities to help manage chronic care conditions. It is the Committee's understanding that community paramedicine programs can partner with physicians and other practitioners to provide chronic care management, prevention, and screening services under appropriate clinical supervision and bill for those services following current Medicare "incident to" billing rules, also called indirect billing, where the supervising practitioner submits the bill to Medicare.³⁴ However the regulations around incident to billing are complex and not well understood by practitioners or by EMS organizations, including EMS Directors, seeking to develop community paramedicine programs. The Committee believes HHS could enhance awareness of this billing option for community paramedicine programs. Additionally, Rural Health Clinics (RHCs) and Federally Qualified Health Clinics (FQHCs) cannot do "incident to" billing, meaning this type of partnership is not possible for them.

Recommendation 2: The Committee recommends the Secretary ensure in regulation and guidance that community paramedicine providers have the ability to deliver services to Medicare

beneficiaries "incident to" the services of a physician/non-physician practitioner and encourages that such policies allow for community paramedicine providers to practice under general rather than direct supervision.

While the Committee understands that community paramedicine programs can already bill for their services by utilizing "incident to" billing rules it also believes that there could be additional benefits from enabling them to directly bill Medicare for their services. Enabling community paramedics to directly bill for chronic care management and screening services would allow people to receive care in their homes and prevent unnecessary hospital or primary care visits that are often require traveling long distances. Providing community paramedics with a direct mechanism to bill for these services could reduce health care utilization while improving the health of some of older and sicker residents in rural communities. Finally, the Committee heard about the issues that rural EMS agencies had with qualifying for the ET3 Transport Model (see page 4) and would like future payment model programs to avoid this type of oversight. The Committee encourages the Secretary to work with Congress to allow community paramedicine programs in rural communities to bill Medicare directly for basic chronic care management, prevention and screening services.

It is currently unclear what the full breadth of uses that telehealth can have in EMS. The Committee feels that more information is needed to help policymakers understand how telehealth can be used appropriately when responding to a medical emergency.

Recommendation 3: The Committee recommends the Secretary support analysis of the use of on-site and enroute telehealth in emergency medical services (EMS) for appropriate triage care to identify future policy options.

Committee members heard from Indian Health Service (IHS) staff that residents on some tribal lands are not able to dial 911 and reliably get a response. The Committee recognizes this as a key impediment to accessing ambulance services and feels that this issue should be better understood and addressed. The Committee encourages the Secretary to work with Congress to close the remaining 911 gaps in tribal areas.

EMS Workforce

The Committee has one policy consideration to offer on workforce issues. The common denominator in workforce recruitment and retention issues is access to training. The Committee feels that the Department could play a greater role in supporting the affordability and accessibility of EMS training programs. Especially for rural practitioners who often have to pay great sums of money and travel far distances to attend EMS classes that are required for them to become or maintain an EMT or higher position.

As noted earlier, SAMHSA operates an EMS training program with a focus on mental health training. The Committee believes this program is important but would like to see a larger and broader national EMS training program established. Other programs like this already exist for nurses, mental health clinicians, dentists and primary care providers. Additionally, targeting these types of grants to educational institutions, such as community colleges rather than EMS agencies would help to decrease burden on struggling agencies. The Committee believes that EMS is important enough not only to rural, but also

the whole nation, to justify the creation of such a program. The Committee encourages the Secretary to work with Congress to provide emergency medical service training grants

Reimbursement

The Committee believes that the current system of EMS reimbursement is not accurately calibrated to the realities of what EMS does, particularly in rural, and believes that it is time to make a change. The Committee notes that Congress charged CMS with collecting ground ambulance data to help inform future policymaking on the Ambulance Fee Schedule (AFS). The Committee is encouraged by this and believes that the Secretary should take this as well as the forthcoming Medicare Payment Advisory Commission (MedPAC) study on standby costs into consideration when future rulemaking on the AFS comes up.

Recommendation 4: The Committee recommends the Secretary consider CMS ground ambulance data collection in future rulemaking on the Ambulance Fee Schedule. The Secretary should also consider the MedPAC study on standby costs to help inform future policy making on Medicare ambulance reimbursement.

The Committee understands that EMS can play a critical role in managing population health for the communities they serve. The Committee believes that the Center for Medicare and Medicaid Innovation (CMMI) is an appropriate place to test a new payment mode.

Recommendation 5: The Committee recommends the Secretary direct the CMS Innovation Center to develop a pilot payment model that is focused on addressing chronic disease and emergency medical service gaps from a population health perspective.

The Committee heard from multiple stakeholders about the importance of the temporary rural and super rural add-on payments that the AFS provides. These payments are crucial to ensuring the solvency of rural EMS providers, and the uncertainty of their extension makes it difficult for them to budget and plan for the future. To that end, the Committee believes that these temporary-add on payments should be made permanent and CMS should be given the authority to adjust them in the future via rulemaking. The Committee encourages the Secretary consider working with Congress to make permanent the rural and super rural add-on payments in the Ambulance Fee Schedule and give the Centers for Medicare and Medicaid Services the ability to adjust them in the future.

CONCLUSION

Modern EMS is still relatively new and changing as a field of medical practice. Professionalization and technology are improving and expanding the type of care that EMS can provide. Despite these advances there are barriers to unleashing the full potential of EMS. Nationally, EMS has been built as a decentralized system leading to redundancies in some areas and scarcity in others. This has exacerbated already existing rural/urban divides in access to care. Additionally, payment policies have not updated to recognize modern EMS for what it is, a provider of medical services, not just a stabilization and transport service. Downstream from this lack of adequate payment are the rural workforce recruitment and retention issues that are made even more difficult by an aging population and decreasing volunteer force. The recent demand that COVID-19 put on the health care system made clear that EMS provides enormous value to small rural communities. It is within our power to improve upon the current EMS

system by making investments that expand access to EMS in places that do not have adequate services by supporting the recruitment and retention of the next generation of professional EMS practitioners, and by aligning our reimbursement policies with the reality of the nature of modern EMS.

APPENDIX A – SITE VISIT PROFILE

In lieu of an in-person site visit, Committee members were able to virtually speak with four different EMS providers located in different rural areas across the country. The providers and Committee members were grouped into two subcommittees; one subcommittee discussed reimbursement issues and the other discussed workforce issues. Below is a description of the providers and the main takeaways from each group's discussion.

Reimbursement

The reimbursement subcommittee included two providers, Jamie Pafford-Gresham and Jim Finger, representing two different EMS agencies. Pafford-Gresham is the President and CEO of Pafford Medical Services, Inc. based in Hope, Arkansas. Pafford Medical Services began as a one ambulance (station wagon) operation in 1967 by her parents. With the help of her brothers, the family ambulance service has developed a network of rural EMS operations across six states and territories to become one of the largest private EMS companies in the nation with over 80 locations and 1600 employees, providing both air and ground services in 5 states and outlying U.S. Territories. Finger is the Chief Executive Administrator of Regional Ambulance Service in Vermont. Regional Ambulance serves 12 communities that covers 400 square miles in central Vermont.

While hailing from different areas of the country, both Pafford-Gresham and Finger had a singular message, the current payment structure for ground ambulance services is not working. They noted that the public assumes that EMS, fire departments, and police departments are funded through tax dollars the same way because they are all first responders. This is not the case, they are billing Medicare and Medicaid as well as private insurance, making those payers crucial to their financial solvency. Medicare comprises a large portion all rural ambulance payment and is a national leader in setting reimbursement rates. Pafford-Gresham raised the issue of the difference in Medicare reimbursement that occurs based on whether a patient is transported. Generally, if a patient is not transported by a ground ambulance service it is not reimbursed by Medicare. This is true regardless of whether the patient receives treatment and then refuses a transport. It is not financially viable for EMS services to travel long distances, increasing operating costs, to then arrive on scene and have the patient not require transport. Pafford-Gresham states that dynamic exists because ambulance services are fundamentally paid as a transport service rather than providers that they are.

Finger noted that COVID-19 has had a negative impact on EMS in Vermont. Call volume dropped at the beginning of the pandemic because patients with illnesses or injuries that were not COVID-19 related feared they could catch COVID-19 in the hospital. This caused a decrease in income for EMS agency and staff. Investing in personal protective equipment and other protective measures caused an increase in spending and additional financial strain on EMS agencies. Six months into the pandemic, call volume began to increase and now it is higher than it was before the pandemic. Concurrently, there is a shortage of EMTs, so ambulance services are understaffed and further strained. Hospitals and other health care facilities are facing severe employee shortages and are hiring EMS personnel for use in emergency departments. Hospitals can typically pay EMTs and paramedics a much higher salary than an EMS agency. This dynamic exacerbates the challenges that are preventing rural providers from meeting the needs of their communities due to a shortage of EMS personnel.

Both providers shared with the subcommittee the following rural ambulance agency issues:

- Long distance and challenging terrain that prolong emergency response and transportation times
- Insufficient payment by insurers to cover standby and fixed costs
- A changing workforce that has historically relied on volunteers but increasingly must include paid personnel
- A lack of regional EMS plans to coordinate services
- Insufficient state and federal policy coordination across oversight agencies

Types of EMS assistance needed include:

- The five-year extension of the Medicare add-on are necessary in rural communities
- Reclassifying misclassified zip codes by CMS as urban instead of rural
- End Sequestration and Pay-As-You-Go (PAYGO) cuts
- Direct funding for ambulance services
- Additional Medicare adjusters for EMS
- End the productivity adjustment for EMS

Workforce

The workforce subcommittee included two providers, Julie “Jules” Scadden and Shawn Phillips. Scadden is a Paramedic that has been involved in EMS for over 29 years and currently serves as the Director of EMS for Dysart Ambulance Service, a blended volunteer/paid ambulance service in central Iowa. In addition to leading Dysart, Jules is also an EMS educator and presented at state and national EMS conferences. Phillips is the EMS Director for Lafayette County EMS in Darlington, Wisconsin. Lafayette County EMS is a rural EMS organization that serves a population of just over 4,600 within a 137 square mile area. Shawn started in EMS 15 years ago as an EMT for a rural paid on call department. He quickly advanced to an Advanced EMT and then onto a Paramedic and finally a Critical Care Paramedic. Shawn took on the role of EMS Director for Lafayette County EMS after a number of tumultuous years where the agency had to transform from a volunteer only service to a blended service with both volunteers and paid staff.

Both Phillips and Scadden agreed that the fundamental issue they face as leaders of EMS agencies is recruiting and retaining paid staff and volunteers. EMS has historically been all volunteers but is slowly moving into a blended service. There have always been workforce shortages and it is becoming an increasingly challenging issue. Low call volume and reimbursement makes it difficult to keep paid staff in rural and remote areas. Scadden and Phillips pointed out that if EMS were to be recognized as an essential service at the federal and state level then sustainable funding, reimbursement, and equipment would follow. Finally, the financial viability of EMS plays a direct role in the ability to recruit and retain a trained EMS workforce. For paid staff, offering competitive benefits packages and insurance provides one way that agencies can recruit staff. Scadden provided an example from her home state of Iowa where there is \$100 tax deduction for fire department and EMS volunteers. She let the Committee know that she appreciates the deduction also felt that more could be done to support first responders.

Scadden shared that the educational requirements, the cost of classes, and the locations of the classes necessitate upfront costs that can dissuade potential staff or volunteers from becoming an EMT. The classes required to fulfill licensing requirements are often only offered in-person many miles away from rural agencies. Additionally, there is little tuition support offered to providers to attend courses. Jules

recommended to the subcommittee that states do more to subsidize the cost of EMS courses as well as make them more accessible to rural providers by offering online options as well as in person classes.

Scadden also shared that EMS funding is another root cause of recruitment, training, and retention issues. Her ambulance service is located in a county with no hospital. Jules pointed out that when funding comes from the federal or state governments to the counties it is often funneled through hospitals. If a super rural county does not have a hospital that could impact the ability of an EMS agency to access downstream funding. In lieu of working with a local hospital, Jules works with her local public health department to coordinate population health efforts. Jules suggested that federal or state governments could provide local/regional public health departments with funding that can be used for EMS. This could help address potential funding shortfalls in rural areas without a hospital.

Philips shared the challenges that his agency faces when transitioning from a primarily volunteer service to a blended service. The local rural medical ambulance service in Darlington was founded in 1978 and it was a 100% a volunteer service. It was run by a municipal board with representatives from each municipality. In 2017 and 2018, there were internal difficulties between the board and EMTs. This resulted in a lack of EMTs, with only 10 people were responding to calls. Police officers and EMRs helped with staffing the ambulance service and began responding to all the calls, which interfered with their duties. In 2018, all the EMTs walked out on the department. The community hired a private ambulance service and had to pay a substantial amount of money for the service. Eventually, the ambulance service was not making enough money and left the area.

Today, Lafayette County EMS covers the City of Darlington and five surrounding townships. The coverage area is one hundred and thirty-seven square miles and there are approximately four thousand six hundred and sixty people served. Lafayette County EMS is licensed with the State of Wisconsin as an EMT service. The EMS agency uses state licensure flexibility from Act 97 “Flex Staffing” which allows them to shift the level of service that they provide based on the staff that they have available to them at any given time. For example, if there is a paramedic working at the time of an emergency Lafayette County EMS can respond at the paramedic level, but if there was only an EMT with basic life support training then they could still respond to an emergency as appropriate. This arrangement allows Lafayette County EMS to flexibly schedule its full time and on-call staff. In 2022, the service will have run approximately four hundred calls with one ambulance, 4 full-time EMTs, and 14 paid on-call staff.

Some rural EMS challenges are recruiting volunteers and people who choose EMT as a career. In rural communities EMS salaries are lower than in urban communities so people tend to migrate to the cities. A regional collaboration could strengthen the EMS system and provide more services.

APPENDIX B – Other Policy Considerations

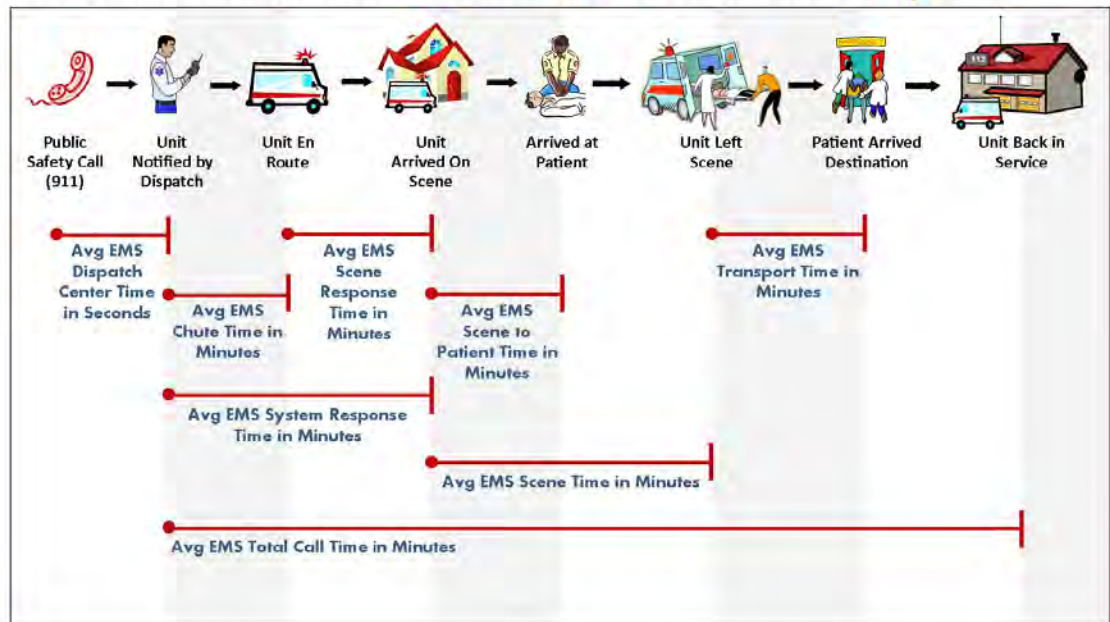
- The Committee encourages the Secretary to work with Congress to create a grant program to expand emergency medical service areas into ambulance deserts. **(See page 10)**
- Committee encourages the Secretary to work with Congress to allow community paramedicine programs in rural communities to bill Medicare directly for basic chronic care management, prevention and screening services. **(See page 10)**
- The Committee encourages the Secretary to work with Congress to close the remaining 911 gaps in tribal areas. **(See page 11)**
- The Committee encourages the Secretary to work with Congress to provide emergency medical service training grants. **(See page 12)**
- The Committee encourages the Secretary consider working with Congress to make permanent the rural and super rural add-on payments in the Ambulance Fee Schedule and give the Centers for Medicare and Medicaid Services the ability to adjust them in the future. **(See page 12)**

APPENDIX C – NEMSIS Total Call Time

NEMSIS Enhanced Cube v2 Timeline

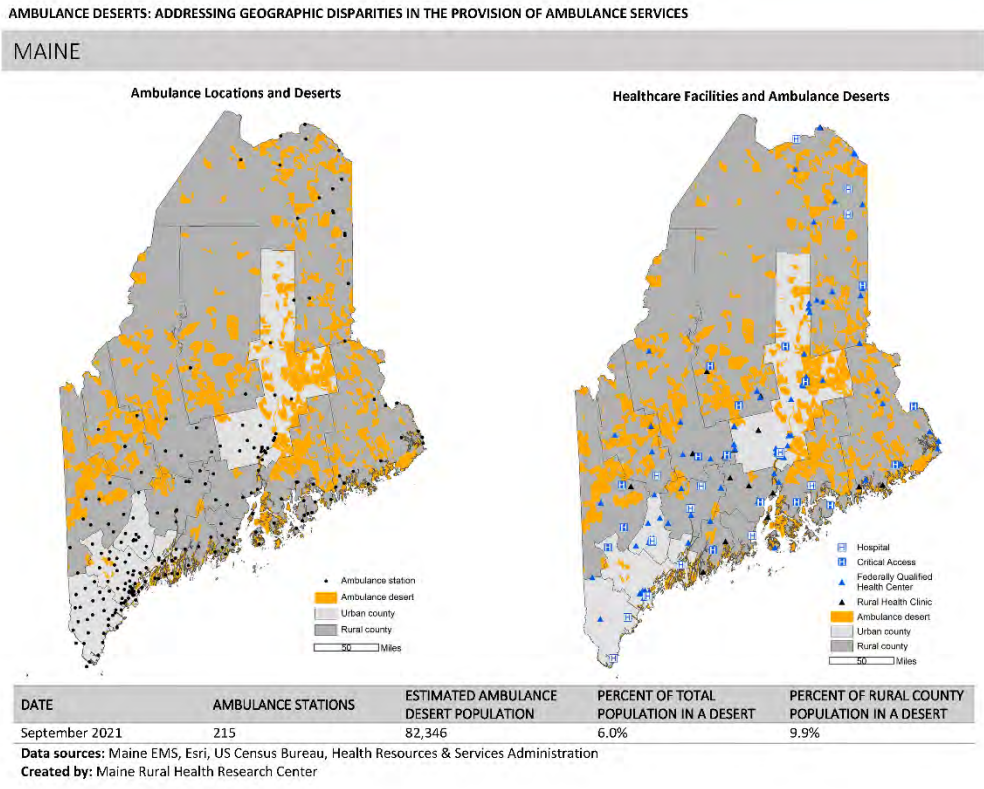
Overall timeline at a glance: The overall timeline shown below is to be used as a reference for the following pages where each individual time measure in the Enhanced Cube is defined as an **average time in minutes or seconds**.

The average times are the difference between the time element identified by ● and the time element identified by ┘.



APPENDIX D: Ambulance Desert Maps

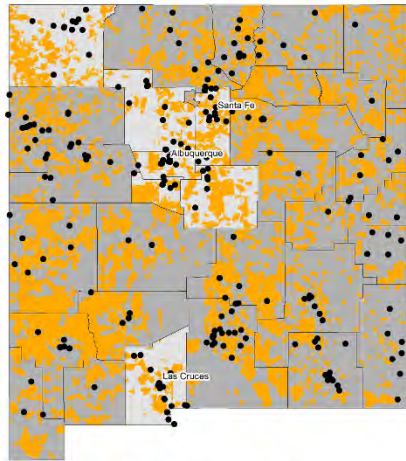
These maps represent in-progress work presented by researchers from the Maine Rural Health Research Center at the April 2022 meeting of the Committee. For the latest updates and publications related to this work, see the Rural Health Research Gateway project page, <https://www.ruralhealthresearch.org/projects/100002531>.



AMBULANCE DESERTS: ADDRESSING GEOGRAPHIC DISPARITIES IN THE PROVISION OF AMBULANCE SERVICES

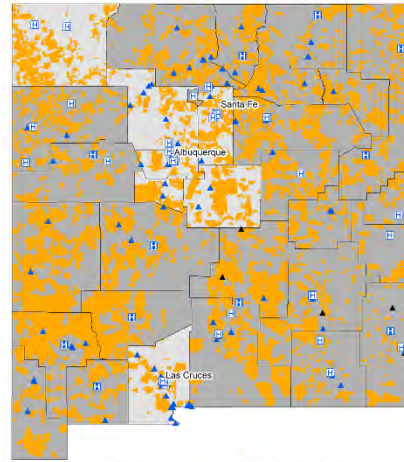
NEW MEXICO

Ambulance Locations and Deserts



● Ambulance station
 ■ Ambulance desert
 □ Urban county
 □ Rural county
 50 Miles

Healthcare Facilities and Ambulance Deserts



□ Hospital
 □ Critical Access Hospital
 ▲ Federally Qualified Health Center
 ▲ Rural Health Clinic
 ■ Ambulance desert
 □ Urban county
 □ Rural county
 50 Miles

DATE	AMBULANCE STATIONS	ESTIMATED AMBULANCE DESERT POPULATION	PERCENT OF TOTAL POPULATION IN A DESERT	PERCENT OF RURAL COUNTY POPULATION IN A DESERT
December 2021	246	119,854	5.7%	11.6%

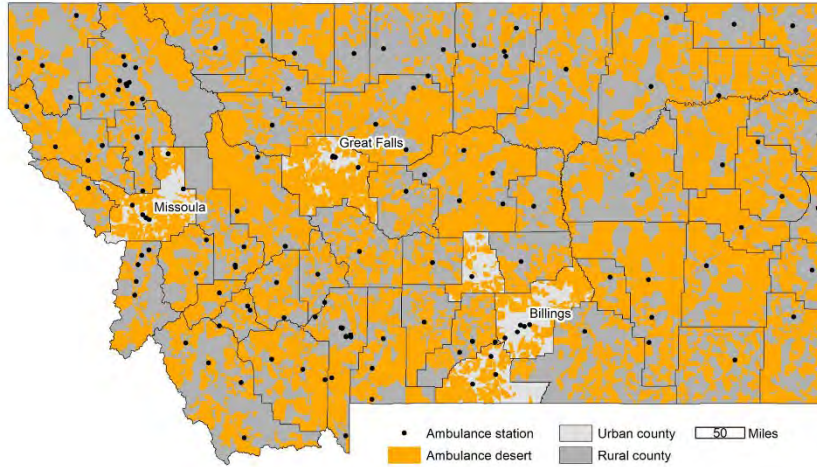
Data sources: New Mexico Department of Health, Esri, US Census Bureau, Health Resources & Services Administration

Note: [Add note on NM data limitations]

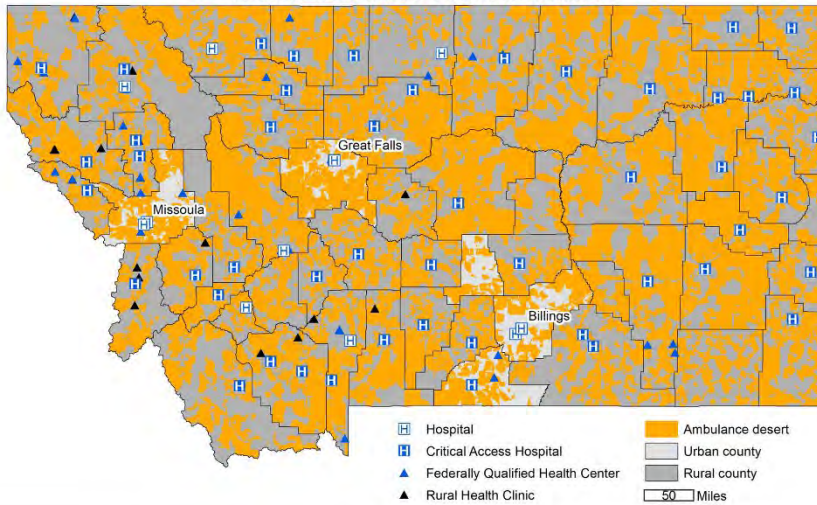
AMBULANCE DESERTS: ADDRESSING GEOGRAPHIC DISPARITIES IN THE PROVISION OF AMBULANCE SERVICES

MONTANA

Ambulance Locations and Deserts



Ambulance Deserts and Healthcare Facilities



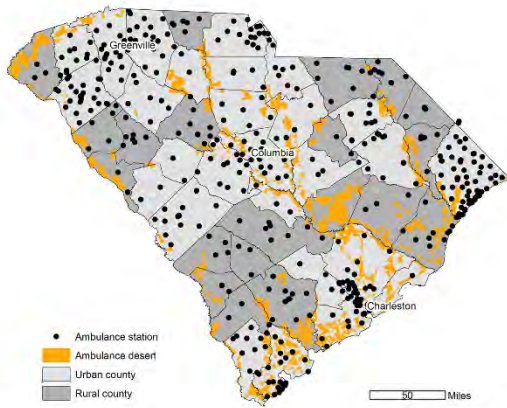
DATE	AMBULANCE STATIONS	ESTIMATED AMBULANCE DESERT POPULATION	PERCENT OF TOTAL POPULATION IN A DESERT	PERCENT OF RURAL COUNTY POPULATION IN A DESERT
November 2021	142	140,365	12.9%	16.0%

Data sources: Montana Department of Public Health and Human Services, Esri, US Census Bureau, Health Resources & Services Administration

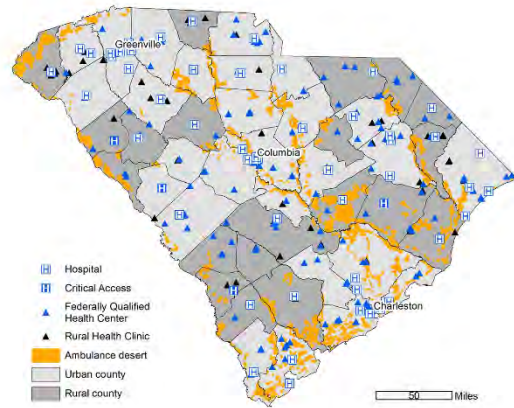
AMBULANCE DESERTS: ADDRESSING GEOGRAPHIC DISPARITIES IN THE PROVISION OF AMBULANCE SERVICES

SOUTH CAROLINA

Ambulance Locations and Deserts



Healthcare Facilities and Ambulance Deserts



DATE	AMBULANCE STATIONS	ESTIMATED AMBULANCE DESERT POPULATION	PERCENT OF TOTAL POPULATION IN A DESERT	PERCENT OF RURAL COUNTY POPULATION IN A DESERT
December 2021	461	83,587	1.6%	3.4%

Data sources: South Carolina Department of Health and Environmental Control, Esri, US Census Bureau, Health Resources & Services Administration

REFERENCES

- ¹ MacKinney, Clinton et al. “Characteristics and Challenges of Rural Ambulance Agencies— A Brief Review and Policy Considerations.” *Rural Policy Research Institute*, January 2021. <https://rupri.org/wp-content/uploads/Characteristics-and-Challenges-of-Rural-Ambulance-Agencies-January-2021.pdf>.
- ² Mell, Howard K. et al. “Emergency Medical Services Response Times in Rural, Suburban, and Urban Areas.” *JAMA surgery*, 152(10), 983–984. <https://doi.org/10.1001/jamasurg.2017.2230>.
- ³ The National Advisory Committee on Rural Health and Human Services. “Rural Emergency Hospital Policy Brief and Recommendations.” <https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/rural/publications/2021-rural-emergency-hospital-policy-brief.pdf>.
- ⁴ Schroeder, Shawnda. “Rural Communities: Age, Income, and Health Status.” *Rural Health Research Gateway*. November, 2018. <https://www.ruralhealthresearch.org/assets/2200-8536/rural-communities-age-income-health-status-recap.pdf>.
- ⁵ Troske S, Davis AF. “Do Hospitals Closures Affect Patient Time in an Ambulance?” *Rural and Underserved Health Research Center*, 2019. https://uknowledge.uky.edu/cgi/viewcontent.cgi?article=1007&context=rhrc_reports.
- ⁶ Chapman J. Rural Response to Coronavirus Could Be Hampered by Years of Population Loss. PEW. Accessed December 15, 2020. <https://www.pewtrusts.org/en/research-and-analysis/data-visualizations/2020/ruralresponse-to-coronavirus-could-be-hampered-by-years-of-population-loss>.
- ⁷ Legal Information Institute. (n.d.). *42 CFR § 414.610 - basis of payment*. Legal Information Institute. Retrieved from <https://www.law.cornell.edu/cfr/text/42/414.610>.
- ⁸ U.S. Department of Health & Human Services (2015). Report to Congress Evaluations of Hospitals’ Ambulance Data on Medicare Cost Reports and Feasibility of Obtaining Cost Data from All Ambulance Providers and Suppliers. Accessed November 20, 2020. <https://www.cms.gov/Medicare/Medicare-Fee-for-ServicePayment/AmbulanceFeeSchedule/Downloads/Report-To-Congress-September-2015.pdf>.
- ⁹ Ibid.
- ¹⁰ Ibid.
- ¹¹ National Academies of Sciences, Engineering, and Medicine. “Emergency Medical Services: At the Crossroads.” The National Academies Press, 2007. <https://doi.org/10.17226/11629>.
- ¹² MacKinney, Clinton et al. “Characteristics and Challenges of Rural Ambulance Agencies— A Brief Review and Policy Considerations.” *Rural Policy Research Institute*, January 2021. <https://rupri.org/wp-content/uploads/Characteristics-and-Challenges-of-Rural-Ambulance-Agencies-January-2021.pdf>.
- ¹³ National Academies of Sciences, Engineering, and Medicine. 2007. *Emergency Medical Services: At the Crossroads*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/11629>.
- ¹⁴ MacKinney, Clinton et al. “Characteristics and Challenges of Rural Ambulance Agencies— A Brief Review and Policy Considerations.” *Rural Policy Research Institute*, January 2021. <https://rupri.org/wp-content/uploads/Characteristics-and-Challenges-of-Rural-Ambulance-Agencies-January-2021.pdf>.
- ¹⁵ Cash, Rebecca E, et al. “Comparison of Volunteer and Paid EMS Professionals in the United States.” *Prehospital Emergency Care*. 2021 Mar-Apr;25(2):205-212. <https://doi.org/10.1080/10903127.2020.1752867>.
- ¹⁶ National Registry of Emergency Medical Technicians. “National EMS Certification.” <https://www.nremt.org/>.
- ¹⁷ MacKinney, Clinton et al. “Characteristics and Challenges of Rural Ambulance Agencies— A Brief Review and Policy Considerations.” *Rural Policy Research Institute*, January 2021. <https://rupri.org/wp-content/uploads/Characteristics-and-Challenges-of-Rural-Ambulance-Agencies-January-2021.pdf>.
- ¹⁸ HHS.gov. “What is telehealth?” <https://www.hhs.gov/hipaa/for-professionals/faq/3015/what-is-telehealth/index.html>.
- ¹⁹ Federal Interagency Committee on EMS. “Telemedicine Framework for EMS and 911 Organizations.” May 2021. https://www.911.gov/pdf/Telemedicine_Framework%20May_2021.pdf.
- ²⁰ Office of EMS. “What We Do.” <https://www.ems.gov/officeofOEMS.html>.
- ²¹ Ibid.
- ²² NEMSAC. “Rural and Volunteer EMS Recruitment and Retention” 01/15/2020. [https://www.ems.gov/NEMSAC-advisories-and-recommendations/2020/Rural & Volunteer EMS Recruitment & Retention Jan 2020.pdf](https://www.ems.gov/NEMSAC-advisories-and-recommendations/2020/Rural_%20Volunteer_EMS_Recruitment_%20Retention_Jan_2020.pdf).

²³ NEMSIS. "What is NEMSIS." <https://nemsis.org/what-is-nemsis/>.

²⁴ Centers for Medicare & Medicaid Services. "Ambulance fee Schedule Public Use Files." <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AmbulanceFeeSchedule/afspuf>.

²⁵ "Text - H.R.1892 - 115th Congress (2017-2018): Bipartisan Budget Act of 2018." Congress.gov, Library of Congress, 9 February 2018, <https://www.congress.gov/bill/115th-congress/house-bill/1892/text>.

²⁶ Centers for Medicare & Medicaid Services. "Emergency Triage, Treat, and Transport (ET3) Model." <https://innovation.cms.gov/innovation-models/et3>.

²⁷ Ibid.

²⁸ National Rural Health Resource Center. "Flex Program." <https://www.ruralcenter.org/tasc/flex>.

²⁹ National Rural Health Resource Center. "Flex Program Structure FY 19 – FY 23." <https://www.ruralcenter.org/sites/default/files/Flex%20Program%20Structure%20for%20FY%2019%20-%20FY%2023%20v1.0.pdf>.

³⁰ Health Resources and Services Administration. "EMSC State Partnership Rural Expansion Program." <https://www.hrsa.gov/grants/find-funding/hrsa-21-108>.

³¹ EMSC Innovation and Improvement Center. "Learn about the State Partnership Rural Expansion projects" September 2021. <https://emscimprovement.center/news/learn-about-the-state-partnership-rural-expansion-projects/>.

³² Indian Health Service. "Emergency Medical Services." <https://www.ihs.gov/dccs/ems/>.

³³ Rural Health Research Gateway. "Ambulance Deserts: Addressing Geographic Disparities in the Provision of Ambulance Services." <https://www.ruralhealthresearch.org/projects/100002531>.

³⁴ The Paramedic Foundation. "'Incident to' Community Paramedic Services Provided in a Patient's Home." http://paramedicfoundation.org/Portals/TPF/toolkit/Incident_to_CP_Services_in_a_Patients_Home.pdf?ver=2016-08-21-105606-000