Emergency Medical Services (EMS): Challenges in Rural Colorado

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This Fact Sheet illustrates the challenges emergency medical service providers face in rural Colorado. A strong statewide healthcare infrastructure must include an awareness of, and attention to, the special circumstances and challenges of healthcare delivery in rural areas of the state. CRHC has created a multitude of Fact Sheets about other health topics as they relate to rural Colorado.

Challenges for Rural EMS in Colorado

On average, U.S. residents need emergency medical services (EMS) twice in their lifetime (Office of Technology Assessment, University of Minnesota Rural Health Research Center, 1990). EMS is an important part of the healthcare system. This is especially true for people in sparsely populated, rural and frontier areas where access to primary and specialty healthcare services is more limited and usually involves commuting longer distances than urban residents.

Tumbleweed EMS was established over 30 years ago when the local mortician asked for help. He would "drive like mad" to the nearest hospital with a sick or injured patient in the back of his hearse. There was no one to help him at the scene of an accident or during the harrowing drive. About this same time, EMS was starting to emerge as a field in the United States. A few individuals from Tumbleweed and two nearby communities got together and started an 'association for EMS'. It is still in operation today.

Note: *Throughout this paper we've inserted vignettes about a small, all-volunteer rural emergency medical service located in rural Colorado and their challenges and successes. We made up the town of Tumbleweed, but all of the examples come from conversations with rural EMS providers.*

What is EMS?

As compared to other services of public safety and health, the field of providing emergency medical services (EMS) is relatively new, only about 30 years old. The National Highway Traffic Safety Administration (NHTSA) initially created organized EMS in an effort to reduce traffic-related deaths. According to NHTSA, the primary goals of EMS were "to provide immediate medical assistance at the place of injury or illness and during transit, provide rapid and safe transportation to a medical facility, and to coordinate with hospital care through triage."

Emergency medical services (EMS) straddle public safety, emergency services, and medical care. It includes transport services to hospitals, and medical care delivered at the site of an emergency and while in transport. EMS is an organized and coordinated effort to respond to emergencies in a defined geographical area, such as a county. Emergency medical care ranges from Basic Life Support (BLS) to Advanced Life Support (ALS) to Critical Care Transport.

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Colorado Rural Health Center
225 East 16th Avenue, Suite 1050
Denver, CO 80203
Phone: 303-832-7493
From Rural Colorado: 800-851-6782
Fax: 303-832-7496
E-mail: info@coruralhealth.org
Website: www.coruralhealth.org

"Enhancing healthcare services in Colorado by providing information, education, linkages, tools & energy toward addressing rural healthcare issues."

Significant advances have been made in this very short time, including improved communications and response time, the employment of increasingly sophisticated equipment, and better medical training for volunteers and staff who deliver these services.

> ***Basic Life Support (BLS)*** *is limited to fundamental patient assessment and life saving skills and the techniques needed to move patients on to higher care safely.* ***Advanced Life Support (ALS)*** *includes invasive skills and medications that require more background knowledge to administer.* ***Critical Care Transport*** *is reserved for highly skilled teams that can move patients (who are critically dependant on life support technology and medication) from one healthcare facility to another.*

The Challenges

Higher Per-Person Costs — Sparse populations covering large geographic areas make the per-person cost of providing emergency care expensive. EMS has fixed costs in operations and capital costs, i.e., ambulance vehicle license, insurance, and maintenance; facility or building rent and maintenance; liability insurance; training for volunteers, staff, and physician advisor; utilities; and supplies, including expensive medications with short shelf lives. Most of these fixed costs are constant regardless whether an EMS provider responds to 10 or 100 calls monthly. The current reimbursement system, such as Medicare, is based on per trip (or per mile) and does not consider the cost of constant readiness.

Recruitment and Retention — Recruiting and retaining staff and volunteers who are available, trained, and committed is one of the major challenges currently being reported by Colorado rural EMS providers. Rural and frontier EMS agencies are often dependent on volunteers, and volunteerism is declining as people focus on their paid jobs and as rural areas experience a decreasing and aging population. Retaining EMS providers in rural areas is challenging because of demanding expectations to conduct administrative work and fundraising, health risks, and the costs and time to meet training requirements. Dedicated EMS providers often find themselves saddled with administrative duties that they have little or no training to perform the tasks, which can lead to resignations.

> *Tumbleweed EMS relies on volunteers to respond to emergency medical calls. Volunteers are increasingly difficult to recruit for a variety of reasons. More people are working full time, or even hold two jobs. Many people work outside the community; some are transient or seasonal workers. Others have families to care for. Many jobs do not support EMS volunteer activities. In general, there has been a general decline in volunteerism and community involvement nationally.*

Low Volume — Rural communities do not have the volume and associated profit potential to attract private sector EMS services. Call and run volumes are low, which is not attractive for private sector ambulance services. Low volume results in higher costs per run. Rural areas are dependent on the public sector to provide EMS, or on associations established with volunteers.

Limited Local Tax Base Options — Local governments in rural areas have a lower capacity to fund programs through taxes. Tax bases in rural areas founded on property and sales taxes are often low, resulting in limited ability to raise funds to support EMS. Private property market values may be low in comparison to urban areas, and limited retail services result in lower sales tax collections. Particularly in the west, much of the land is federally owned, eliminating local tax support as an option. According to the Atlas for the New West, 38% of rural Colorado is federally owned.

Training — Maintaining skills in a low-volume area is difficult for rural communities. Obtaining regular training, which often incurs travel expenses for trainees, is challenging in rural areas. For volunteers, training can also mean time away from work and additional personal expenses. While using technology, such as the Internet to provide ‘distance training’ opportunities, can remove the distance barrier, not all rural areas have adequate digital information infrastructures, e.g., high speed Internet service, required to make distance learning truly feasible.

The volunteers from Tumbleweed EMS are fortunate to be able to receive most of their training from the nearest hospital, which is only 30 to 40 minutes away. Financial support in the form of mileage reimbursement is available to the volunteers from the local EMS association. Fortunately, most of them can attend training without overnight lodging expenses. However the cost of training materials has doubled over the past five years and the association is no longer able to cover all the expenses, meaning that the volunteers themselves are responsible for some, if not all, of the costs for training materials. These costs can run as much as $876 per person for EMT-basic courses. Classroom time has also increased in the past five years, causing volunteers to take more time away from their regular jobs and their families.

Higher Proportion of Seniors — Rural areas have a higher proportion of seniors. 12.4% of rural populations in Colorado are over 65 compared to 9.7% in urban areas. This factor may also result in an increase in the number of calls from those suffering from aging-related injuries and illnesses, i.e. falls and cardiovascular disease. Additionally, there is a higher reliance on Medicare for reimbursement.

Lack of Public Transportation — A lack of public transportation results in a reliance on EMS for non-emergency transport. Across the country, some EMS providers in rural and frontier areas have stopped offering non-emergency transportation, such as trips to distant doctor's office from home and back, in order to keep EMS resources available for local emergencies.

Our agency can't afford to continue to provide $750 taxi rides for people that don't have means to get to the doctor. We've made three runs just so one older gentleman can pick up his medication at the pharmacy. – rural EMS Manager

Higher Proportion of Uninsured — According the Colorado Coalition for the Medically Underserved, there tends to be a higher proportion of uninsured people in rural communities than in urban. In fact, the counties with the highest uninsured rates (based on three different estimates) are Alamosa, Conjeos, Costilla, Rio Grande, and Saguache, which are all rural counties. Additionally, uninsured individuals are more likely to delay seeking healthcare, especially preventive healthcare, which can lead to a greater use of emergency services when illnesses become serious.

Rural Reimbursement Rates – Historically, both Medicare and Medicaid have inadequately reimbursed rural EMS providers, particularly those in low volume call areas. In an effort to address the special circumstances of rural EMS providers across the country, the Centers for Medicare and Medicaid (CMS, the federal agency that manages Medicare and Medicaid) implemented significant changes in reimbursement for all ambulance services in 2002. CMS implemented a new fee schedule for ambulance services that stipulates a base payment per trip that varies by the type of service provided and added a mileage payment, which varies by the length of the trip. It is hoped that this new methodology will better serve rural areas, especially since there is a higher proportion of seniors in rural communities and therefore more reliance on Medicare as an EMS funding source.

Medicaid provides base reimbursement rates for one-way emergency medical service trips that, similar to Medicare, are inadequate for low volume service areas. EMS agencies participating in Medicaid must accept the Medicaid reimbursement level as payment in full. They cannot bill the consumer for a remaining balance in an attempt to try to meet their actual costs.

Loss of Hospitals and Primary Care Physicians in Rural Areas — Contributing to the rural-urban disparity in the provision of EMS services is the increased closure of rural hospitals and medical practices. As a result, there is increasing pressure on EMS providers to provide services outside their scope of practice. In addition, there is a greater call for emergency and non-emergency medical transportation to even more distant facilities and services.

Tumbleweed EMS provides basic life support services and their goal is to transport the patient as quickly and safely as possible to the nearest hospital. Their record shows good time with the exception of some weather delays and waiting for railroad trains, which can lead to 45-minute transport times.

Time and Distance — Rural EMS systems usually have longer travel time over greater distances to medical facilities, which is made more difficult and dangerous in adverse weather. The further a patient is from an emergency medical facility, the more a patient will benefit from an advanced level of local EMS; however, rural and remote areas are less likely to provide advanced levels of EMS. The advanced levels of care are difficult to establish and maintain in areas that experience insufficient volume. Paramedics will often relocate to areas that can compensate them for their skills and experience, making retention a problem for rural EMS providers.

For more information about National rural EMS issues, The *Rural and Frontier EMS Agenda for the Future* is available on the National Rural Health Association (NRHA) website: www.nrharural.org/emsagenda/ This document discusses many of the same issues that face rural Colorado, and it identifies strategies to address these issues at a national level.

We all work our magic in the field. Those who work in EMS are committed and passionate about their work, volunteers and paid staff alike. These dedicated individuals make things work and deserve recognition, training, and support. – rural Paramedic

Colorado Demographics

Rural State:

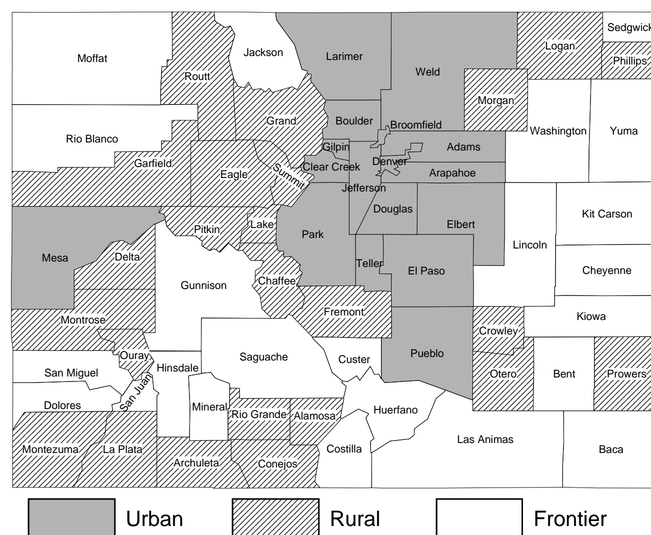
- 73% of Colorado's 64 counties are rural: 17 urban, 47 rural. Of these 47 rural counties, 23 are defined as frontier, having six people or less per square mile.

Population Growth:

- The average growth in population in rural counties from 1990-2000 was 32.5%.

Geographic Size of Counties:

- The average rural county in Colorado covers 1,632 square miles. Land area ranges from 150 square miles to 4,773 square miles. The state of Delaware is only 1,933 square miles.



Source: CRHC

Low Income:

- The average median income for Colorado's rural counties is $38,921 compared to $49,362 for urban counties.

Poverty:

- 9% of rural families live below the Federal Poverty Level vs. 6% in urban.

Older Community:

- The median age in rural counties is 37.95 compared to 34.07 in urban.

Smaller Labor Force:

- Only 66% of the rural population is considered 'eligible labor force' compared to 70% in urban.

This report was prepared by the Colorado Rural Health Council. The Council served as the advocacy arm of the Colorado Rural Health Center from 2001 to 2005. Members of the Council identified, discussed, and prioritized emerging rural health issues. They then developed strategies for educating others about these issues and addressing them. The Council was composed of representatives from public and private organizations statewide, interested and involved in rural healthcare.