

Delivery of Emergency Care in Rural Settings

An Information Paper

Introduction

It is estimated that approximately 42% of American emergency departments (EDs) are located in rural counties and that these rural EDs see around 17% of all ED visits.¹ Many rural populations are older, sicker, poorer, and often more medically vulnerable than urban counterparts. Additionally, longer transport times to rural EDs can potentially delay access to ED care for time-sensitive conditions. As the economics of the United States healthcare system evolve, increasing numbers of rural hospitals are closing which may further jeopardize the medical safety-net of rural America.

The unique challenges facing rural EDs have been published in various venues. This information paper will attempt to provide a broad overview of the complex topic of delivery of emergency care in rural settings. Due to the variety of local and regional challenges facing rural EDs, along with the rapidly changing landscape of public policy, it is impossible to create a comprehensive document that is not immediately outdated. Therefore, while this paper will cover many of the major overlying topics, the authors encourage the reader to pursue further detail via the reference sources and more recent legislative summaries.

Background

Rural hospitals and rural EDs are the safety net for those patients in remote areas who experience medical emergencies. Often these facilities are in sparsely populated areas and may be the only medical resource for miles. Many rural EDs may also have low patient volumes. With the combination of low volumes and a changing healthcare landscape, many rural facilities operate at a negative operating margin and require state and federal assistance to remain operational. For these reasons and others, the North Carolina Rural Health Research Program has noted that 78 rural hospitals have closed since 2010.² Multiple sources have estimated many more rural facilities are at risk of closing nationwide.

In addition to the aforementioned financial and patient demographic challenges, the practice of rural emergency medicine also faces unique workforce challenges, compared to more densely populated areas. Due to a limited number of residency-trained, board-certified emergency physicians (EPs) nationwide, coupled with a relatively small percentage of these physicians choosing to practice in rural communities, the workforce may inherently differ from that of more metropolitan areas.

Rural emergency medicine also faces other unique challenges with respect to patient demographics and baseline health status. In many rural areas, the patient population may be highly impoverished with little access to the greater healthcare system. A significant portion of rural America may be uninsured or underinsured and even those with insurance may not have access to providers or specialists in their vicinity. Lastly, the overall health of most rural communities is generally poor. A 2017 study by iVantage Analytics demonstrated that “rural healthcare providers serve populations which are not only socioeconomically disadvantaged but also suffer from numerous health disparities and poorer outcomes than non-rural communities”.³

Rural Emergency Medicine Workforce

All patients, regardless of setting, deserve prompt access to high-quality emergency care. The American College of Emergency Physicians (ACEP) supports the principle that emergency physicians should be residency trained and emergency medicine board certified. ACEP’s definition of an emergency physician emphasizes the fundamental concept that emergency care is best provided by physicians who are residency trained in emergency medicine, and that there is no substitute for residency training in emergency medicine.⁴

Despite this valid philosophical stance, data suggests that emergency medicine residency–trained/board-certified emergency physicians may never be able to fully meet workforce demands, at least in the foreseeable future, particularly in rural areas.^{5,6} Therefore, the ED workforce in many rural areas may by necessity differ from that in urban areas. The current rural ED workforce is diverse. For example, data from Iowa showed that almost a quarter of EDs were staffed exclusively by family medicine physicians, and only 12% of EDs were staffed by residency–trained EPs.^{7,8} Nurse practitioners (NPs) and physician assistants (PAs) provided sole coverage in 39% of these hospitals. Emergency medicine collaboration with family medicine may also have potential to meet workforce needs in rural communities.^{9,10} The realities of ED workforce challenges require that rural hospitals have credentialing policies that ensure that every emergency provider possesses the necessary skills and experience to provide safe, high quality emergency care. ACEP supports innovative approaches to raise the level of care, as well as the cognitive and technical skills of all emergency providers, such as the CALS course.¹¹ A “patient-centered approach” is required to ensure that additional training, oversight, and continuing medical education is available for rural emergency physicians, PAs, and NPs.

ACEP supports initiatives to improve the quality of emergency care in rural areas and expand the size of the rural emergency care workforce. Approaches such as those recommended by the Institute of Medicine (IOM) report and the Future of Emergency Medicine Summit include continued efforts to improve rural emergency medicine training for residents¹², increased collaboration between emergency medicine and primary care specialties¹³ and increased links between academic medical centers and rural hospitals.

The specialty of emergency medicine must continue to evolve to meet the needs of rural America by strengthening the workforce with ongoing training and education, enhanced recruitment and retention, and new collaborative models.

Freestanding EDs in Rural Emergency Medicine

A freestanding emergency department (FSED) is a facility that is structurally separate and distinct from a hospital and provides emergency care. There are two distinct types of FSEDs: a hospital outpatient department (HOPD), also referred to as an off-site hospital-based or satellite emergency department (ED), and independent freestanding emergency centers (IFECs).¹⁴

Some have surmised that either of the above models of accessibility to emergency care would be more cost effective than a full-service hospital in a rural area. However, many barriers exist. IFECs are currently unable to participate as provider-based facilities, meaning they cannot accept Medicare or Medicaid which is often the primary coverage for patients in rural areas. This creates a significant financial barrier to the rural IFEC model, as they are unable to bill these patients. Additional legislative barriers exist for IFECs in that there are currently relatively few states that have legislation allowing IFECs. HOPDs are hospital affiliated, but typically must be within a specified distance from the affiliated full service hospital, a requirement that further limits the proliferation of HOPDs in remote areas.

When compared to a full-service hospital, freestanding emergency centers have the potential to be more efficient by dedicating to only emergency care with a leaner staffing model. Health quality in an FSED may also be comparable when they provide advanced imaging (CT, x-ray, and ultrasound) and a moderate-complexity lab on site. Such facilities can rapidly diagnosis, treat, and stabilize any acute illness, and many can keep patients in observation status for short stays. More complex or longer-stay patients would require transfer to higher levels of care.

Freestanding ED Section Related Links:

<https://www.acep.org/Clinical---Practice-Management/Freestanding-Emergency-Departments/>

Critical Access Hospitals

The Critical Access Hospital (CAH) is a hospital designation that was created to reduce financial vulnerabilities of rural hospitals and improve access to healthcare by keeping essential services in rural communities. Small, rural hospitals have faced financial challenges for decades. In response to a string of rural hospital closures, Congress passed the Balanced Budget Act (BBA) of 1997 that created the CAH designation. CAHs are limited to 25 inpatient beds with limitations on length of inpatient stay, which is designed to encourage transfer of complex cases. They must provide 24/7 emergency care and must be located more than 35 miles from another hospital. Further, they are paid through cost-based Medicare reimbursement – or fee-for-service reimbursement. That means that CAHs are paid for most inpatient and outpatient services to Medicare patients at 101% of reasonable cost. Finally, they must network with an acute care hospital to support transfers to a higher level of care.

As of April 2016, there are 1,332 CAHs in the United States.¹⁵ When hospitals consider moving into a CAH status, it is important to determine if the bed limit for CAH is a good match for that community's need. Services offered by a CAH should be aimed to meet the community's unique needs. The number and type of services offered in one community may be different than in another community.

In addition to creating the CAH designation, the BBA also created the Medicare Rural Hospital Flexibility Program (Flex Program) – with the purpose of supporting new and existing CAHs. The Flex Program provides federal grants to each state which are used to implement a CAH program with the following goals: support quality improvement, improve financial and operational performance, and support health system development. The Flex Program is supported by the Federal Office of Rural Health Policy (which is located within Health Resources and Services Administration), the Technical Assistance and Services Center and the Flex Monitoring Team – a consortium of researchers who evaluate the impact of the Flex Program.

The CAH system is a critical pillar supporting the health and emergency care needs of rural America. Legislative reduction in funding or support is a significant threat to this support system. Illustrating this point, a recent report by the Chertis Center for Rural Health estimates that the impact of recently recommended CAH reimbursement cuts over a 10-year period would result in \$1.2 billion in lost Medicare reimbursement among CAHs, 52,000 jobs lost in CAH hospitals and communities, and an estimated \$6.1 billion gross domestic product (GDP) loss.³

Critical Access Hospitals must provide 24-hour emergency services. They must have medical staff on-site, or on-call and available on-site in 30 minutes. The medical staff must meet the state licensure requirements and there must be a doctor of medicine, doctor of osteopathy, physician assistant, nurse practitioner, or clinical nurse specialist with experience and training in emergency care. In certain very limited circumstances, the coverage could be provided temporarily by a registered nurse.¹⁶ There must be at least one physician for a CAH, but that person does not have to be on-site. Advance practice providers can be an independent part of the medical staff.

From a quality perspective, CAHs are required to have arrangements for quality assurance –either with a hospital that is part of their network, with another CAH, or through a credentialing body like the Joint Commission. Additionally, under the Flex Program, the Medicare Beneficiary Quality Improvement Program (MBQIP) aims to improve the quality of care in small and rural CAHs by encouraging self-reported quality data. 92% of CAHs nationwide participate in the MBQIP program.¹⁷ This data is analyzed for benchmarking to inform the facility of its performance.

Critical Access Hospital Links:

<http://www.aha.org/content/13/infographic-cah.pdf>

<https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/CritAccessHospfetsht.pdf>
<http://www.aha.org/advocacy-issues/cah/index.shtml>
<https://www.hrsa.gov/healthit/toolbox/RuralHealthITtoolbox/Introduction/critical.html>
<http://www.flexmonitoring.org/data/critical-access-hospital-locations/>

Federal Legislation

In addition to CAH nuances, the rural health community is supported to varying degrees by several sources of state and federal funding. The primary reimbursement for patient care in rural communities is very often Medicare and Medicaid. Therefore, rural hospitals stand to be significantly and perhaps disproportionately affected by any changes to these programs.

As with all funding, the amount and nature of support for government reimbursement of medical services and block funding for various rural hospitals is constantly subject to change, based on budgetary changes and political philosophy. Medicare's existing Value-Based Purchasing Program threatens to reduce payments to rural hospitals that may struggle with various metrics and therefore be additionally penalized. The Affordable Care Act (ACA) should theoretically improve reimbursement to rural hospitals by reducing the number of uninsured patients; however, sources note that the ACA impact on the operating margins of rural hospitals is more likely to be negative, and their financial standing may become more tenuous by reductions in disproportionate share beginning in 2018.¹⁸ Furthermore, uncertainty about the consequences of recent legislative efforts to repeal or replace the ACA are leading to widespread cutbacks.¹⁹

Recent additional proposed legislation includes the 2015 Rural Emergency Acute Care Hospital Act²⁰ which would increase payment for emergency outpatient services, including telehealth and ambulance services. The payment would be at 110% of the reasonable costs of such services and is specific to only emergency care, not inpatient services. This would improve the financial viability of rural EDs. Furthermore, the 2015 proposed Save Rural Hospitals Act²¹ would offer funding for creation of a community outpatient hospital type system that could potentially meet the needs of rural patients.

As previously mentioned, with the rapid pace of political change and ongoing debate of funding for healthcare-related initiatives, it is likely more current legislation at the state and national level are available since this article was authored.

The statistics describing the need in rural areas are clear: though only 15% of the US population live in rural areas, sixty percent of trauma deaths occur in those regions. There are prolonged response times to the scenes of accident or illness and long travel distances to the nearest EDs.²⁰ The rural population is older, poorer, and sicker than urban counterparts and may be more challenged by problems caused by weather, geography, cultural, social and language barriers.²¹ Rural hospital closures disproportionately affect racial and ethnic minorities, and continued closures are likely without new models of reimbursement and healthcare delivery.²² Furthermore, the rate of rural hospital closures is rising.²³

When comparing rural hospitals in states that expanded Medicaid in response to the ACA to those that did not, non-expansion states were found to have provided greater financial vulnerability, leading the authors to conclude that policy makers should formulate strategies that maintain access to care for rural populations in non-expansion states.²⁴ In Georgia, a non-expansion state, Governor Nathan Dean proposed converting struggling rural hospitals into freestanding EDs to restore basic services to areas in need. Such facilities could combine emergency care with primary care and, if accepted at federal levels, could have far-reaching effects.²⁵

The Hospital Survey and Construction Act (the Hill-Burton Act), passed by Congress in 1946, nourished the development of not-for-profit and public hospitals after WWII. That bill enabled the number of hospitals in our nation to increase by 34%, strengthening the public hospital system and benefiting the economically disadvantaged rural areas in the south.⁶ Public hospitals, in turn, have contributed to American residency training for many. The charitable intent embodied in the Hill-Burton act, through its benefit to public and rural medicine, has been critical to the mission of the hospital in American society and to maintaining the quality of healthcare and graduate medical education in the United States.

As previously mentioned, with the rapid pace of political changes and ongoing debate of funding for healthcare-related initiatives, it is likely more current legislation at the state and national level is available since this article was authored.

Use of Telemedicine

Over the past decade, the use of telehealth or telemedicine has grown in its potential and practice to increase access to quality healthcare in rural and underserved communities. The use of this technology enables the provision of specialized care to those areas that might not otherwise have access to these resources due to a low volume of specialized cases or the expense of providing the service in a rural location. According to the Office of the National Coordinator for Health Information Technology, “telehealth” refers to a broader scope of remote healthcare services than the term telemedicine which relates to the clinical provision of services from a distance. Telehealth includes provider training, administrative meetings, and continuing medical education in addition to clinical services. Note the American Telemedicine Association utilizes the terms “telemedicine” and “telehealth” interchangeably, so this definition should not be regarded as final.

There are currently several forms of telehealth technologies that are commonly in use. Video conferencing is a system that allows two or more people/locations to communicate using simultaneous two-way audio and video transmissions. Systems often utilize low-cost, high-capacity broadband telecommunication services and, by using video compression techniques, allow for lifelike face-to-face interactions. Store-and-forward data, images or videos utilize a technique of capturing and transmitting information in formats such as video, photograph, x-ray images, hi-resolution dermatology images, text reports etc. to an intermediate location which sends the information to another intermediate or final station at a time in the future. This system is useful in those situations where real-time communication is not necessary, and the reviewer reads batches of files/studies at their discretion. Examples include tele-dermatology, cardiology EKG readings, radiology study interpretations and pulmonary function test readings by pulmonologists.

Remote patient monitoring is a type of ambulatory healthcare option that allows a patient to use a mobile medical device to perform routine testing and send the data to their healthcare team in real-time. The devices can be located in the patient’s home or other location, in addition to a health care or chronic care facility. Examples include diabetes monitors, heart and blood pressure monitors and tele-ICU monitoring. Mobile health or mHealth/home health care is a general term for mobile phone or wireless technology used in medical care, often used in context of expanding services to the developing world but not exclusive to the mission of the ED. In special circumstances, such as disaster management or austere health conditions, telehealth services provide help for episodic needs and use a number of wired, wireless, radio, and satellite communication methods to enable health care to be provided when other means may not be feasible or practical.

As with any technology, telemedicine carries with it both challenges and benefits. The current challenges are primarily regulatory in nature. The provider’s license to practice when telehealth consultations cross state or national boundaries has been a barrier, as the prescriber must have appropriate licensure and certification to enable the provider to perform a patient assessment by state law and allow prescriptions to be filled so that the care can be provided in a timely manner. An additional concern is liability coverage and maintaining clinical supervision of midlevel providers utilizing telehealth. Reimbursement has been a

challenge in some settings. Although the provider may not be physically present, the reimbursement of their time and expertise should be at a fair market value for the services performed.

The other main barrier relates to broadband and equipment availability/interoperability. Although the costs of obtaining the hardware for telehealth assessments have been rapidly decreasing and may be minimal, some areas may lack sufficient capital or knowledge to establish a telehealth site or may be geographically located in areas without internet or broadband access. Another barrier relates to not having compatible interfaces among different healthcare providers. The information should flow seamlessly across the system. The implementation group of the telehealth program needs to consider both the electronic and spoken language challenges in the planning process.

The ability to provide needed specialty expertise in rural locations without prior access to these services cannot be over emphasized. Technology has proven to be revolutionary in providing necessary care in the areas of cardiac and stroke care, as well as critical care disorders in the ED setting. The future advances of telehealth should improve access to even more rural and underserved areas, and this will help to improve the health care needs across the nation and world.

The ability to maintain a rural provider's knowledge base related to procedural skills and education has been a supportive aspect to retain providers in rural settings. Without this education, the providers may feel that their skills are deteriorating and wish to move to a more populated region. Telehealth training has been useful in holding educational sessions across vast distances for education, including rural providers. Although the emergency provider is well trained for a variety of acute emergent concerns, the ability to remotely consult a specialist who has a deeper knowledge of the specific care needs and who can address issues beyond the acute management is a welcome option.

Finally, patient satisfaction studies have found comparable satisfaction with telehealth consultation, compared with physical visits, and telehealth alleviates the need for logistical travel planning. The cost savings for the decreased transport of acute visits to tertiary care facilities and for follow-up visits helps to decrease both the patient's time and travel costs as well as rural facility costs of having an available specialized provider on site. There are additional savings realized by patients staying in the community where they live, due to the family support and psychological safety of staying in their home.

In summary, telehealth and telemedicine are dramatically improving the access of health care across rural and underserved areas across the nation and the world. This system enables rural providers to maintain their knowledge base and skills and improves the rural populations' access to needed, but difficult-to-recruit, specialists which can be lifesaving in the rare/high-risk scenarios when the full-time recruitment of a particular specialist for an area would be cost prohibitive. Telehealth use in the rural ED helps to bring a vast array of specialty expertise to the bedside in environments that are otherwise unable to provide these services. It is felt that this technology will only continue to grow as the health care system continues to evolve.

Rural EM Telehealth Links:

<https://www.ruralhealthinfo.org/topics/telehealth>

<https://www.ncbi.nlm.nih.gov/pubmed/11765886>

<https://www.ncbi.nlm.nih.gov/pubmed/17764784>

[http://www.annemergmed.com/article/S0196-0644\(16\)00212-2/fulltext](http://www.annemergmed.com/article/S0196-0644(16)00212-2/fulltext)

<https://www.acep.org/telemedicine/>

<https://www.ncbi.nlm.nih.gov/pubmed/22694296>

Summary

Rural emergency medicine is a tremendously important component of the healthcare framework for rural Americans. The viability of rural EDs and rural hospitals remains at risk by threats to reimbursement, funding, staffing, and other regulatory challenges. Emergency medicine workforce challenges are significant in some rural areas, and continued collaboration with primary specialties is essential to finding both short-term and long-term solutions. Critical Access Hospitals and various forms of freestanding EDs also have potential to creatively address the emergency medicine needs of rural communities. Telemedicine shows great promise in bringing more specialized care to the bedside than might ordinarily be possible in rural locations.

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