Paramedic Specialization: A Strategy for Better Out-of-Hospital Care

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Abstract

Demographic, economic, and political forces are driving significant change in the US health care system. Paramedics are a health profession currently providing advanced emergency care and medical transportation throughout the United States. As the health care system demands more team-based care in nonacute, community, interfacility, and tactical response settings, specialized paramedic practitioners could be a valuable and well-positioned resource to meet these needs. Currently, there is limited support for specialty certifications that demand appropriate education, training, or experience standards before specialized practice by paramedics. A fragmented approach to specialty paramedic practice currently exists across our country in which states, regulators, nonprofit organizations, and other health care professions influence and regulate the practice of paramedicine. Multiple other medical professions, however, have already developed effective systems over the last century that can be easily adapted to the practice of paramedicine. Paramedicine practitioners need to organize a profession-based specialty board to organize and standardize a specialty certification system that can be used on a national level.

The Challenge

Health care in the United States has been characterized as a fragmented "nonsystem" with very high costs, significant inefficiencies, and disappointing outcomes.[1] As a result of both rising costs and the reforms initiated by the Patient Protection and Affordable Care Act, it is anticipated that team-based care by a variety of health professionals in nonacute care settings will increase.[2] Among the health care professions, there is significant variability in educational preparation and ongoing controversy over the scope of practice boundaries between various groups of health professionals.[3] Because of rising health care costs driven by an aging populace and rising costs in acute care services, however, a more cost-effective deployment of nonphysician health care professionals in the out-of-hospital environment will be required, especially considering the lack of primary care resources in many areas. Currently, a significant amount of health care costs are driven by hospital services, many of which could be reduced or avoided by improved management of chronic care in the community, more accessible and appropriate evaluation and resolution of unscheduled needs for care, regionalization of emergency services, and a reduction in hospital readmissions. More accessible and appropriate evaluation and resolution of unscheduled needs for care offer the promise of rerouting the estimated 15% of emergency medical service (EMS) transports to the emergency department for nonemergent conditions and are estimated to save $283 to $586 million per year.[4] Likewise, regionalization of care at designated specialty centers, including both EMS and transportation components, has been shown to reduce mortality and long-term disability in patients with time-sensitive acute care conditions, including trauma, ST-segment elevation myocardial infarction, stroke, and sepsis.[5-8]

However, these opportunities to improve outcomes depend on a competent, coordinated, 24/7 accessible network of community-based clinicians and transportation resources capable of providing a range of scheduled and unscheduled care service. Paramedics with specialty training may be what is needed in most communities to integrate existing resources through the use of practitioners already located within the EMS and air and ground medical transportation systems.

Could EMS Providers Play a Role?

Virtually all communities have a local EMS system, and many have developed regionalized air and ground medical transportation systems based on regional acute and emergency transportation needs. These services are provided by a combination of paid and volunteer providers working in fire department, hospital-based, local government, or nongovernmental organizations that offer universally accessible 24/7 health care to the vast majority of the US population. These systems also maintain or work with dispatch centers capable of prioritizing requests for service, tracking the availability of resources, and accessing additional resources from adjacent communities when requests for service exceed capacity. A number of authors have proposed that the EMS system could play a meaningful role in the coordination and delivery of mobile integrated health care within communities and is an integral resource for the regionalization of care.[9,10] However, these roles will require an EMS workforce that has a variety of new specialized skills built on the existing emergency care educational model.

Overview of EMS

EMS in the United States has existed in its current form for more than 4 decades. In 2011, an estimated 203,000 paramedics were credentialed in the United States by various state and territorial jurisdictions.[11] In October 2013, it was further reported that almost 80,000 paramedics were currently certified by the National Registry of Emergency Medical Technicians (NREMT),[12] a nongovernmental national certification organization. Although it is unknown how many of those paramedics have obtained or use additional specialized knowledge to enhance their practice beyond traditional emergency response activities, paramedic practitioners have been historically involved in a number of specialty areas including critical care transport,[13] tactical EMS, military, wilderness medical care, and occupational medicine. In addition to these areas, significant efforts are now being undertaken to better understand and develop the paramedic role in primary care,[14] particularly as it relates to mobile health care, community paramedicine, and

home health services. Many of these areas of specialization require knowledge and skills that are beyond the scope of typical paramedic education and practice. For the paramedic to perform effectively in these areas and to ensure the public is protected from harm, a comprehensive and uniform national approach to paramedic specialization is required. Many states have individually addressed specialized EMS practice issues through the regulation of education, scope of practice, or physician medical direction; however, these efforts remain parochial and uncoordinated. It is time now for paramedicine practitioners to embrace the development of a comprehensive and professionally driven specialty certification system that can be effectively used by EMS and transport services, policy makers, regulators, fellow health care providers, and the public. A formalized, specialty certification system will serve to define and validate the expertise required for paramedics to safely and effectively perform at the highest levels of paramedicine and should be modeled after similar efforts already undertaken by other health professions.

The publication of *Accidental Death and Disability, The Neglected Disease of Modern Society* in 1966 by the National Academy of Sciences is widely credited as the foundation of modern EMS in the United States.[14] Subsequent efforts to organize EMS delivery led to a Presidential Commission on Highway Traffic Safety that, in 1969, recommended the creation of a national certification agency to establish uniform standards for training and examination of personnel active in the delivery of emergency ambulance service. Acting on that recommendation, the NREMT was founded in 1970.[16] Contemporaneously to these events, a number of localities began piloting paramedic or mobile intensive care programs to advance the level of EMS care within their communities.[17] After the passage of the federal EMS Systems Act of 1973, states were encouraged to develop licensing programs for EMS personnel.[18] Although the terms "licensing" and "certification" have been used interchangeably and argued for many years,[19] EMS providers are generally required to be certified as competent either before or during the process of obtaining a state license, sometimes called a state certificate, and before beginning practice. The paramedic education and certification process arose 35 years ago from a national curriculum developed by leading EMS agencies and the University of Pittsburgh.[20] The National Standard Paramedic Curriculum was revised by the US Department of Transportation in 1998,[21] and the current National EMS Education Standards for paramedics were completed in 2009. As of 2013, the NREMT, a national independent organization that implements and maintains uniform requirements for the entry-level certification and recertification of all levels of EMS practitioners, is recognized as a component of licensing in 46 states.[22] The NREMT, however, does not offer certification in any specialty areas.

Paramedic Practice in the United States

In 1996, the National Highway Traffic Safety Administration published a consensus document intended to guide the future development of EMS entitled "The EMS Agenda for the Future". From this work came the "EMS Education Agenda for the Future: A Systems Approach". A collection of documents were subsequently published by the National Highway Traffic Safety Administration NHTSA including the "National EMS Core Content", the "National EMS Scope of Practice Model", and the "National EMS Education Standards." These documents collectively provide the basis for the scope of practice and educational requirements for paramedics. In conjunction with the development of these documents, "The EMS Agenda for the Future" noted a disconnect between EMS education and formal higher education systems.[23] "The EMS Agenda for the Future" further called for the universal accreditation of EMS educational programs.[24] Although not yet fully implemented, the NREMT requires that applicants seeking NREMT certification as paramedics must have completed an educational program accredited by the Commission on Accreditation for the EMS Professions (CoAEMSP).[25] Most paramedic programs currently involve 2 to 4 semesters of college-level courses with associated clinical and field practica. Despite the fact that most paramedic education already includes, or is eligible for, college credit, currently no state nor the NREMT requires a college degree at any level as a condition for national certification.

An EMS practitioner's scope of practice varies significantly between states and may include a formal list of allowed assessments, procedures, and medications. EMS practice in the United States has also historically required close supervision of the practitioner by a physician. In many instances, this supervision is more direct than that seen in other allied health professions. In a few cases, state credentialing may be dependent on an individual supervision agreement between a paramedic and a physician. One justification for this degree of oversight has been the reluctance on the part of the EMS community to accept the rigor of formal education and/or degree requirements that are common in other health professions such as nursing and respiratory therapy with associated broader scopes of practice.

Despite the fact that specialized EMS practice has existed for many decades, formalized systems to educate, certify, license, and regulate these specialized paramedic providers have only begun to evolve. Although the few existing certifications continue to gain acceptance among air and ground specialty transport programs and their accrediting bodies, they have yet to gain widespread acceptance within the state regulatory community. This disconnect between paramedics currently practicing as specialists and regulators most certainly is multifactorial in etiology. In many instances, medical directors are afforded a high degree of latitude in determining functional scope of practice, likely contributing to the perceived lack of need for specialty certification. Additional causes are best illustrated through discussion of the evolution of specialty practice in other health professions.