Service Integration and Workforce Trends in Emergency Medical Services

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To commemorate the report credited with the development of modern emergency medical services (EMS), the Institute of Medicine of the National Academies (IOM) examined the current status and future of emergency care in America. *Emergency Medical Services at the Crossroads* reports the IOM's findings and provides an informative view of our nation's EMS or prehospital emergency care system.[1] The report is part of a trend in exploring and dissecting the American system of emergency care, identifying problem areas, and making recommendations for improvement. The IOM highlights many system-wide deficiencies that inhibit EMS from accomplishing its primary mission of responding to emergencies whenever and wherever. Based on these findings, the IOM labeled the US "ill-prepared" and referred to the current EMS situation as nothing less than a "crisis."[1]

For some time, efforts have been underway to resolve many of the EMS challenges identified in the IOM's analysis. These include promoting integration of EMS with other health care services and addressing challenges associated with maintaining a skilled and experienced workforce. More recently, health care pioneers have invested time and energy into expanding the health care role and responsibilities of EMS personnel to include more preventive and primary care tasks.[2-6] As potential momentum for the formation of future policy and research in North Carolina, these trends deserve some attention.

Integration of the EMS System

The provision of basic EMS care involves overcoming many organizational obstacles on a day-to-day basis. One such obstacle is the organizational clash between police, fire, and EMS—the 3 components of the public safety triad. While these 3 are often seen working together at the scene of an accident or emergency situation, substantial differences in roles and responsibilities have created conflict and inhibited integration.[7-9] Specifically, there appears to be a lack of mutual professional respect for the vital roles filled by EMS, hospital staff, and public safety staff. Integration among these professionals and organizations is stalled or significantly hindered by institutional and/or cultural barriers.

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Integration refers to the formation of a seamless communications network among all parties and agencies involved in the care of an individual's emergent or chronic health needs. Improved integration of EMS services with those provided by public safety, public health, and all other health care services has been touted as a solution to access and EMS infrastructure problems.[10,11] The Medicare Rural Hospital Flexibility Program (Flex) is perhaps the most visible integration improvement effort for EMS. This program was created as part of the Balanced Budget Act of 1997 to strengthen and improve rural health care

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infrastructure primarily by converting small rural hospitals to critical access hospitals (CAHs). A CAH is a hospital that qualifies for special reimbursement and federal funding that reduces the likelihood of the hospital closing. The Flex program endeavors to integrate EMS into Flex-related rural health care networks. Since its inception, the program has supported numerous service integration activities led by local and state authorities. Some examples include partnerships between EMS systems in different areas of a state, support for the development of state prehospital databases and information systems, and creation of EMS partnerships with many of the 1286 designated critical access hospitals.

However, the investment in integrated EMS service structures has not been universally adopted. One evaluation finds that many states have chosen to focus on bolstering education systems, addressing human resource challenges, or providing local services small grants for purchasing equipment.[12] Integration initiatives are inhibited by uncertainty among all parties over EMS's role in health care networks, EMS fears over losing autonomy, preoccupation with day-to-day challenges, and a general misunderstanding of what integration is and what it means.[13] Despite these obstacles, interest and support for the integration of EMS is high, meaning that federal and state initiatives will likely continue to promote integration as a national EMS priority.

Addressing Workforce Challenges

Improved integration may curb poor recruitment and retention of EMS professionals which are, by all accounts the most widely reported problems for EMS systems.[14-23] National EMS organizations rank recruitment and retention first in a long list of challenges for rural EMS systems.[24,25] Exploration of new EMS staffing models was recently posited by the IOM as a possible remedy to workforce problems.[1] The National Highway Traffic and Safety Administration (NHTSA) Office of EMS, the federal Office of Rural Health Policy, and the National Rural Health Association are also actively examining these issues in order to improve knowledge around the EMS workforce.

There is very little certainty over the true size of the nation's EMS workforce. Estimates range from a few hundred thousand based on documentation from the US Department of Labor[26] to as many as 1 million (including all possible first responders) which is based on a survey of states conducted by an EMS consulting firm.[27] NHTSA is leading national efforts to improve and expand what we know by funding the Longitudinal Emergency Medical Technician Attributes and Demographics Study[1] and the Emergency Medical Services Workforce for the 21st Century project.

The current body of EMS workforce research does not adequately document the critical elements associated with turnover of EMS personnel, whether paid or volunteer, leaving many questions about the nature of the workforce problem unanswered. Factors like burnout, stress, and dissatisfaction with certain aspects of the occupation have been identified in several studies as influential or potentially influential in turnover.[28-30] Few studies have explored why individuals enter the profession. Among those studies exploring entry, excitement and altruism have been identified as two important attractants.[29,31] The influence of these factors may differ across rural and urban areas. Rural community EMS systems are staffed primarily by volunteers[32] who may enter and leave the profession for reasons that differ from paid professionals. Research is needed to identify what differences may exist between volunteer and paid personnel. With funding from the federal Office of Rural Health Policy, investigators at the Cecil G. Sheps Center for Health Services Research at the University of North Carolina are exploring some of these issues.

In North Carolina, recruitment and retention are visible challenges for EMS and they receive substantial attention from the media and state EMS officials. In Wake, Cabarrus, Duplin, and other North Carolina counties EMS officials are facing critical human resource challenges including poor recruitment and high turnover.[18,21,33] In some North Carolina communities, fewer ambulances are put on the road due to inadequate staffing.[18] Reports suggest that EMS professionals in these areas leave for better pay in other systems or in other professions like nursing. In rural areas, low pay is a major factor detracting paid personnel,[33] whereas availability of time appears to be the primary detractor for volunteers.[15] The NC Association of EMS Administrators, in partnership with the NC Office of EMS, is surveying EMS officials, credentialed professionals, and students in an effort to increase the state's understanding of workforce challenges and help in the design of materials for increasing recruitment and retention.

Expanded Role for EMS Professionals

Career advancement is potentially an important factor in recruitment and retention of EMS professionals.[29,34,35] Other than assuming greater clinical responsibility through additional EMS-specific certifications, the EMS professional career is quite limited.[36] By placing EMS professionals inside the hospital and in primary health care clinic settings, as has been accomplished in many communities,[4,37,38] officials have expanded career possibilities while at the same time improving linkages between EMS and health care, which promotes integration. Nationally and internationally there is growing support for expanding the role and scope of EMS professionals.[2,37] The International Roundtable on Community Paramedicine (IRCP), for example, promotes expanded roles for EMS professionals and defines this new health care provider and model—the community paramedicine model—as "a model of care whereby paramedics apply their training and skills in 'nontraditional' community-based environments outside the usual emergency response/transport model."[3]

For many reasons, growth of community paramedicine programs in the US is possible and is potentially beneficial to EMS and communities. Community leaders are increasingly looking to midlevel and other health care professionals to fill voids in primary, dental, and mental health care services in rural and frontier areas where access is limited.[39] Emergency

medical services professionals are traditionally paid less than nurses and other professionals also serving expanded roles, and thus community paramedicine models are potentially cheaper to administer and have the potential to reach more citizens with fewer resources. Emergency medical services systems and professionals have historically been community-based, are visible and recognizable, and are respected and trusted by the public. Existing federal programs like the National Institutes of Health (NIH) Roadmap Initiative can be used to test and evaluate the clinical and cost effectiveness of community paramedicine.[4] Growth of community paramedicine lies, in large part, with the recognition from researchers, community leaders, and policy makers that EMS systems and professionals are highly skilled medical professionals with an established rapport with the community.

Next Steps for Addressing Integration and Workforce Issues

Monitoring national EMS trends is important for continued growth and improvement of EMS in North Carolina. Integration of EMS is a national priority receiving support from federal initiatives and national associations sensitive to EMS issues. Many obstacles to integration exist. Improved integration, however, can be achieved through expanding the role and responsibilities of EMS professionals, which may also have a positive impact on reducing personnel turnover. Where possible, the state and local EMS leadership in North Carolina should partner with state health care leaders and academic researchers to promote testing and evaluation of diverse models of integration. Local and state officials and industry leaders must take the initiative.

Historically, EMS in the state of North Carolina has been led by innovators and out-of-the-box thinkers. Recent efforts by state EMS leaders to explore workforce problems represent forward thinking and a step in the right direction towards improving workforce conditions. Next steps should include a planned approach involving local EMS systems, community leaders, state and federal EMS leadership, and academic researchers. The NC Center for Nursing (NCCN) is a good example for North Carolina EMS. The NCCN is a state-supported agency that provides ongoing analyses of the state's nursing workforce. A perfect storm of factors including the nursing shortage of the late 1980s led to the creation of the NCCN. While workforce challenges have plagued EMS for more than 20 years, that perfect storm has never effectively materialized for EMS. Twenty years of waiting has proven ineffective. Local and state officials must act and be proactive to address ongoing challenges before the true negative effects of inadequate staffing are revealed.

North Carolina is fortunate to have an exceptional pool of academic researchers and research institutions. Unfortunately, few researchers have been successful or have recognized the NIH Roadmap Initiative as an opportunity for improving EMS clinical procedures and service structure knowledge. Few have recognized community paramedicine as an emerging model of EMS care offering a variety of research opportunities. As a research approach, community-based participatory research offers a unique model for EMS researchers to explore integration, workforce, and other EMS systems and clinical care issues. North Carolina EMS researchers and practitioners should explore community-based participatory research as a vehicle for expanding EMS research. It is increasingly being recognized as a particularly well-suited approach to research involving partnerships with community members and community based health care organizations like EMS.[40]

It is important to have some sense of national EMS priorities and trends by which we can compare North Carolina's EMS development in relation to the rest of the country. Like many states, North Carolina is in the middle of an EMS workforce "challenge," but it is responding by first assessing the size and nature of the problem. Supporting integration and research into expanded roles for EMS professionals could help North Carolina leverage limited federal funding that could be key to improving the state's EMS system. **NCMJ**

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