

Mobile Integrated Health Care and Community Paramedicine: An Emerging Emergency Medical Services Concept

Bryan Y. Choi, MD*; Charles Blumberg, BS; Kenneth Williams, MD

*Corresponding Author. E-mail: bchoiemdoc@gmail.com, Twitter: [@bchoiemdoc](https://twitter.com/bchoiemdoc).

Mobile integrated health care and community paramedicine are models of health care delivery that use emergency medical services (EMS) personnel to fill gaps in local health care infrastructure. Community paramedics may perform in an expanded role and require additional training in the management of chronic disease, communication skills, and cultural sensitivity, whereas other models use all levels of EMS personnel without additional training. Currently, there are few studies of the efficacy, safety, and cost-effectiveness of mobile integrated health care and community paramedicine programs. Observations from existing program data suggest that these systems may prevent congestive heart failure readmissions, reduce EMS frequent-user transports, and reduce emergency department visits. Additional studies are needed to support the clinical and economic benefit of mobile integrated health care and community paramedicine. [Ann Emerg Med. 2016;67:361-366.]

A **podcast** for this article is available at www.annemergmed.com.

0196-0644/\$-see front matter

Copyright © 2015 by the American College of Emergency Physicians.

<http://dx.doi.org/10.1016/j.annemergmed.2015.06.005>

INTRODUCTION

“Mobile integrated health care and community paramedicine” is the current term for a new model of community-based health care delivery that primarily uses emergency medical services (EMS) personnel and systems.¹ Mobile integrated health care and community paramedicine programs address wellness, prevention, care for the chronically ill, postdischarge care, social support networks, and increasing medical compliance for a local population. The model’s providers, often called community paramedics if trained at that level, perform assessments and interventions on an outpatient basis but usually do not provide acute transport.¹ First conceived of in programs attempting to expand access to services for underserved rural populations, the delivery system is one potential way to improve health system engagement with the community.

DATA SOURCES

To our knowledge, there are few published peer-reviewed scientific descriptions of mobile integrated health care and community paramedicine. We identified information on it through a comprehensive search of the PubMed literature database, using the following key words: “MIH/CP,” “mobile integrated health care,” “community paramedicine,” “community paramedic,” and “home health care.” White papers and consensus conference proceedings published by the National Association of State EMS

Officials and the National Association of EMS Physicians provided additional references. Finally, we also included news articles, expert opinion pieces, and preliminary data from current mobile integrated health care and community paramedicine initiatives.

HISTORY OF MOBILE INTEGRATED HEALTH CARE AND COMMUNITY PARAMEDICINE

The first well-studied mobile integrated health care and community paramedicine programs in the United States were designed to address rural health care needs. Compared with residents in urban communities, rural community residents tend to have insufficient access to health care and exhibit worse health outcomes.² There are fewer physicians and higher rates of tobacco use, infant and adolescent mortality, self-reported adult obesity, and substance abuse.^{3,4} Injuries sustained in rural areas also tend to be more severe than those sustained in urban settings.⁵ With only 14% of practicing primary care physicians providing services to the 25% of the nation’s population who reside in rural areas,⁶ community leaders and EMS providers developed early mobile integrated health care and community paramedicine programs to provide improved access to health care in these communities.

One well-documented early community paramedicine program originated in 1992 as a consortium effort of the University of New Mexico School of Medicine Department

of Emergency Medicine, the New Mexico Department of Health, and the rural town of Red River.⁷ The consortium created a pilot program featuring expanded EMS services to fill health care gaps in a town whose closest hospital was 60 minutes away.⁸ The program was funded with \$394,000 in federal grant money and backed by legislation passed by the state senate. The program featured 78 approved protocols and a 980-hour training program administered by the University of New Mexico EMS academy. Provider scope of practice was expanded to cover chronic disease surveillance, community health education, and prevention. Providers were also authorized to administer medications, including oral antibiotics, and perform simple procedures such as suturing. Although the program generated considerable initial publicity, interest in it eventually waned, with only 1 of the original 16 expanded-EMS providers remaining in practice in 1997. The program voluntarily ceased operations in 2000.⁷

Despite the failure of the Red River program, federal and state agencies issued statements supporting the integration of EMS with community health-focused initiatives, particularly in rural areas. In 1996, the US Department of Transportation EMS Agenda for the Future called for integrating EMS into the community and providing services typically associated with primary care, including preventive care, community health interventions, and outpatient management of chronic illness.⁹ This was followed by a 2004 US Department of Health and Human Services guide for service chiefs calling for community paramedicine to apply specifically to rural populations, and a 2010 Joint Committee on Rural Emergency Care strategic plan calling for community paramedics to receive training in general primary and preventive care.^{10,11} More broadly, a 2012 consensus conference of the National Association of State EMS Officials formally defined community paramedicine as “an emerging healthcare delivery model that increases access to basic services through the use of specially trained emergency medical service...providers in an expanded role.”¹²

The concept of mobile integrated health care practice was also introduced in 2012 as a proposed expansion of community paramedicine into multiple nonrural settings.¹³ The strategy included community paramedics as one of its many components, along with primary care offices, hospices, Visiting Nurse Association services, social services, and other home health care providers.^{13,14} The model also called specifically for community paramedics to play a larger role in reducing the need for patient transport and hospital readmissions.

In 2014 at the National Association of EMS Physicians annual meeting, a consensus panel unified mobile integrated health care

practice and community paramedicine under the term “mobile integrated health care and community paramedicine.” In addition, the term “community paramedic” was updated to “community paramedicine provider” to reflect the fact that not all providers were paramedics.¹²

OUTCOMES OF MOBILE INTEGRATED HEALTH CARE AND COMMUNITY PARAMEDICINE PROJECTS

There have been few data published on the safety, cost-effectiveness, and feasibility of mobile integrated health care and community paramedicine programs.¹⁵ Outcomes data will likely result from existing and pilot programs, many of which have specifically integrated evaluation components.

Most data on mobile integrated health care and community paramedicine clinical outcomes and cost-effectiveness originate from the MedStar Mobile Health Program in Dallas and Fort Worth, TX.¹⁶ MedStar's efforts focus on 2 areas: community health practice and the congestive heart failure Readmission Prevention Program. Patients enrolled in the community health practice receive a series of home visits provided by MedStar community paramedicine providers for education in the management of chronic medical conditions, as well as reinforcement of existing primary and specialty care network resources. If patients require 911 response, a community health practice practitioner is also dispatched to the call to ascertain whether transport to an emergency department (ED) can be safely deferred.¹⁷ From January 2010 to February 2015, 146 patients avoided 1,893 transports to the ED because of 911 calls, resulting in a Medicare charge avoidance of \$21,627 and payment avoidance of \$5,536 per patient.¹⁸

Conducted in a fashion similar to that of the community health practice program, the CHF readmission prevention program targets CHF patients in concert with local cardiologists.¹⁹ Compared with the national 2013 median risk-standardized readmission rate of 23%,²⁰ the rate for MedStar was 16.3% for the enrolled participants, a Medicare charge avoidance of \$30,343 and payment avoidance of \$7,620 per participant from October 2013 to February 2015.²¹ Participants also reported an overall patient satisfaction score of 4.9 out of 5.²²

Smaller North American urban and rural mobile integrated health care and community paramedicine programs have also provided outcomes data. A rural Nova Scotia program on Long and Brier Islands reduced ED visits by 23% in 2002 and 2003.²³ In Raleigh, NC, a program attempted to divert patients who were determined not to need ED level of care to the facility best suited to their specific health or social needs. The program triaged more than 300 patients to alternate treatment facilities such as

mental health crisis stabilization units and community alcohol treatment centers. Each successfully triaged patient represented 14 bed-hours returned to the ED, although 20% to 25% required subsequent transport to the hospital.²⁴

Future patient outcome and cost data from newer state- and government-supported programs have the potential to greatly add to or detract from continued support for the establishment and funding of similar programs. The Regional Emergency Medical Services Authority, based in Washoe County, NV, was the recipient of a 2013 Centers for Medicare & Medicaid Innovations grant for \$9.6 million to start community health programs focusing on alternative transport, in-home care by paramedics, and a permanent nurse help line for telephone evaluations, with the goal of saving \$10.5 million during a 3-year period.²⁵ From December 2012 to June 2014, the program's preliminary results include an estimated 1,795 ED visits, 354 ambulance transports, and 28 hospital readmissions avoided, with \$7.9 million in charge avoidance and \$2.8 million in Medicare payments avoided.²⁶

The California state government Emergency Medical Services Authority has also begun a community paramedicine pilot program involving 12 sites across the state, beginning with paramedic training in 2015 and expected to undergo independent evaluation in 2017.²⁷ Finally, a community paramedicine pilot program, which began in January 2014, was established to combat pediatric asthma readmissions in Indianapolis, IN.²⁸ However, there are currently no published data on the program's effectiveness.

In an effort to facilitate and standardize their appraisal, the Health Resources and Services Administration published an evaluation tool for mobile integrated health care and community paramedicine programs. The 2012 document is a self-assessment tool intended for use by not only program leadership but also key stakeholders in the community, including public health, hospitals, EMS, primary care, regulatory agencies, and any other health and social services groups affected by a mobile integrated health care and community paramedicine program. Programs are scored according to 3 major benchmark areas: continuing assessment and analysis of local community health needs, as well as establishment of a system to collect and process such data and ensure dissemination of that information to stakeholders; appropriate policy development, including prioritization of program resources, obtaining of proper legislative and regulatory authority for a program's operation, and continued quality assurance; and assurance to constituents of ongoing fulfillment of service obligations through dedicated medical oversight, ongoing cost-effectiveness, and maintenance of a competent, safe, and legally

compliant workforce.²⁹ The tool's intent is to allow a mobile integrated health care and community paramedicine program to prioritize activities, reinforce weaknesses, and benchmark itself over time. It is not intended to be used to compare different individual programs because they would likely serve different needs.

TRAINING FOR MOBILE INTEGRATED HEALTH CARE AND COMMUNITY PARAMEDICINE PROVIDERS

Mobile integrated health care and community paramedicine represents an expansion in the standard scope of practice for community paramedicine providers compared with personnel who perform only treatment centered on acute transport. Depending on the specific needs of the population being served and existing resources available in the community, some programs provide significant additional training for community paramedicine providers and thereby expand their scope of practice, whereas others do not. Expanded psychomotor, diagnostic, and triage skills, in addition to knowledge of cultural sensitivity, chronic disease pathophysiology, and facility with community resources, can be important parts of a community paramedicine provider's skill set. To meet this need, the Community Healthcare and Emergency Cooperative, based out of the North Central EMS Institute in St. Cloud, MN, has developed a community paramedicine educational curriculum. Undergraduate-level educational institutions may obtain the curriculum free and customize it for institution-specific community paramedicine training programs.³⁰

Hennepin Technical College in Brooklyn Park, MN, has offered a community paramedicine curriculum since 2008. This program has been adopted as an initial training option by mobile integrated health care and community paramedicine programs in several states.³¹ Individuals taking the course must be certified at the Emergency Medical Technician-Paramedic level and have 2 years of full-time work experience or the equivalent amount of experience gained through part-time employment. The curriculum includes 72 in-person and 72 online hours of classroom time, along with 196 hours of clinical training.³² Salient components of the course include

1. the boundaries and role of community paramedicine provider practice in the overall health care system;
2. skills required to inventory and evaluate extant community health services, map out community demographics, and assess the effect of socioeconomic factors on potential clients' health;
3. instruction on conducting expanded histories and physical examinations and accurately document

findings, as well as the importance of organized and secure recordkeeping; and
 4. the medical management of pertinent chronic diseases, the process of identifying and making appropriate referrals to medical and social services, and approaches to providing clinical advice and care.

Inver Hills Community College, in Inver Grove Heights, MN, started a similar program in 2013. The Inver Hills program requires 100 hours of online theory-based coursework and 200 hours of clinical training.³³

Nearly all formalized mobile integrated health care and community paramedicine training programs require substantial investment of time and money. Costs range from \$2,200 to \$2,500, not including living expenses and transportation, and thus present a potential barrier to entry for individuals hoping to receive expanded training, as well as programs attempting to establish themselves in local communities. However, these costs may also serve as a mechanism by which programs without appropriate financial, regulatory, and community stakeholder backing are prevented from potentially operating and causing harm.

MOBILE INTEGRATED HEALTH CARE AND COMMUNITY PARAMEDICINE PROGRAM DESIGN

Nearly 2 decades of experience with both successful and failed mobile integrated health care and community

paramedicine initiatives have allowed experts to form consensus about requirements for successful program implementation, even in the absence of validated national benchmarks or norms.²⁹ Most experts suggest the following:

1. Successful mobile integrated health care and community paramedicine program implementation requires a comprehensive assessment of local health care needs before program planning and implementation. Not every community has the same health care system gaps or priorities. Directors should invest time visiting and planning alongside services such as VNA and other home health care providers, and must receive buy-in from local primary care providers, community clinics, EMS agencies, and hospitals.
2. There are often regulatory and administrative barriers such as state or local legislation mandating EMS transport for all patient encounters. Directors should involve and gain cooperation from state and local health departments, elected officials, and firefighters’ or health care workers’ unions.
3. Potential sources of income and reimbursement must be addressed early, especially because the Centers for Medicare & Medicaid Services and a majority of commercial insurance plans currently reimburse EMS providers only for transporting patients. Programs must also address how they will continue operations, training, and quality assurance when initial funding or public interest and support eventually diminish.

<p>MIH/CP uses EMS providers to fill gaps in local health care infrastructure.</p> <p>MIH/CP works in conjunction, not in competition, with existing community health care services, ie, visiting nurse associations and primary care offices.</p> <p>MIH/CP may represent a change in scope of practice for some EMS providers.</p> <p>Potential Benefits of MIH/CP as a Health Care Model</p> <p>Every program is as unique as every community’s health care deficiencies.</p> <p>CP providers require additional training but already possess most of the needed skills.</p>	<p>EMS providers are the largest pool of health care system manpower and possess the best mobility.</p> <p>EMS providers enjoy community trust and easy access to patients’ homes and protected information.</p> <p>Potential Liabilities of MIH/CP as a Health Care Model</p> <p>Program implementation can be laborious and carry a significant risk of failure.</p> <p>Some EMS providers may see MIH/CP implementation as undue strain on staffing and payroll.</p> <p>Few published objective data on efficacy, cost-effectiveness, and safety of MIH/CP.</p> <p>No standardized reimbursement for CP providers on a federal level.</p>
--	---

Figure. Summary of potential benefits and liabilities of mobile integrated health care and community paramedicine as a health care model. *MIH*, Mobile integrated health care; *CP*, community paramedicine.

Historically, extant programs have been open and enthusiastic about providing personal education on this level for all ranges of program involvement.³⁴ Structured development guidelines are available from numerous EMS-focused resources such as the Community Healthcare and Emergency Cooperative and International Roundtable on Community Paramedicine, which has held annual meetings since 2005.³⁵ Health care device and delivery companies such as Zoll have also started to offer mobile integrated health care and community paramedicine training and skills seminars directed at leadership and establishment of programs.³⁶

FUTURE DIRECTIONS

Although the definition and scope of mobile integrated health care and community paramedicine has been markedly refined since the publication of the National Consensus Conference on Community Paramedicine in 2013,¹² the main hurdle to the progression of mobile integrated health care and community paramedicine as a recognized health care discipline is the lack of safety, efficacy, and long-term outcomes data. Community paramedicine providers will have to demonstrate to government and private payers, as well as the rest of the medical community, that they are a safe and effective means of filling local health care gaps. Furthermore, they will have to justify financial reimbursement for these duties. Such arguments have been and likely will always need to be supplemented by evidence of patient benefit. Improved data reporting such as through the National EMS Information System and through state health information exchanges will be essential for regional assessment of these programs.

Funding for mobile integrated health care and community paramedicine programs thus far has been achieved mainly from grants from federal and state governments, as well as by ambulance services themselves. However, Medicare and most private insurers still do not provide reimbursement for EMS services performed without transport.^{37,38} Without fundamental changes to the Medicare reimbursement model, mobile integrated health care and community paramedicine programs may not be able to sustain operations on a wide scale. Two proposals that have been extensively explored are

1. to decouple EMS payment for treatment from that for transport; and
2. to institute a population-based payment system, like bundled payments already in existence, or shared savings models similar to an accountable care organization.³⁹

Although mobile integrated health care and community paramedicine does not represent a significant change in the

existing EMS scope of practice, EMS personnel function in these roles likely requires additional training in the care of subacute patients and those with semichronic disease, application of public health principles, and cultural competency. Training is also required for providers in programs providing primary care and screening functions. To further mobile integrated health care and community paramedicine acceptance by other medical professionals, stakeholders should highlight and distinguish the education and training of such providers from traditional EMS training. Efforts to implement mobile integrated healthcare and community paramedicine are most likely to reap benefits when implemented after intensive preparation to minimize the impact of liabilities inherent in such programs (Figure).

In summary, mobile integrated health care and community paramedicine is a concept that seems new but has actually been practiced for many years. Although EMS providers have served in an expanded role to fill local health care gaps nationwide, only recently have there been attempts to formally study the safety and cost-effectiveness of this model of care delivery and its place in the overall health care system. Initial data from established programs seem to support the use of mobile integrated health care and community paramedicine to reduce EMS and ED use while maintaining patient satisfaction. More study will be needed to explore the potential benefits, structure, and outcomes of such programs.

Supervising editor: Henry E. Wang, MD, MS

Author affiliations: From the Department of Emergency Medicine (Choi, Williams) at the Warren Alpert Medical School (Blumberg), Brown University, Providence, RI.

Funding and support: By *Annals* policy, all authors are required to disclose any and all commercial, financial, and other relationships in any way related to the subject of this article as per ICMJE conflict of interest guidelines (see www.icmje.org). The authors have stated that no such relationships exist.

Publication dates: Received for publication September 22, 2014. Revisions received February 11, 2015, and June 4, 2015. Accepted for publication June 5, 2015. Available online July 11, 2015.

REFERENCES

1. National Association of Emergency Medical Technicians. Vision statement on mobile integrated healthcare (MIH) and community paramedicine (CP). National Association of Emergency Medical Technicians; 2011. Available at: <http://www.naemsp.org/Documents/PRESS%20RELEASE%20NAEMT-Vision-News%2002-06-14.pdf>. Accessed August 16, 2014.
2. Gamm LD, Hutchinson LL, Dabney BJ, et al, eds. *Rural Healthy People 2010: A Companion Document to Healthy People 2010*. College Station, TX: Texas A&M University System Health Science Center, School of Rural Public Health, Southwest Rural Health Research Center; 2003.

3. Eberhardt M, Ingram D, Makuc C, et al. *Urban and Rural Health Chartbook*. Hyattsville, MD: National Center for Health Statistics; 2001.
4. O'Grady MJ, Mueller CD, Wilensky GR. Essential research issues in rural health: the state rural health directors' perspective. *Policy Anal Brief W Ser*. 2002;5:1-4.
5. US Congress. *Rural Emergency Medical Services—Special Report*. Washington, DC: US Government Printing Office; 1989.
6. Pasko T, Seidman B, Birkhead S. *Physician Characteristics and Distribution in the US: 2000-2001 Edition*. Chicago, IL: American Medical Association; 2000.
7. Hauswald M, Raynovich W, Brainard AH. Expanded emergency medical services: the failure of an experimental community health program. *Prehosp Emerg Care*. 2005;9:250-253.
8. Rowley TD. Solving the paramedic paradox. *Rural Health News*. 2001;8:1-6.
9. United States Department of Transportation, National Highway Traffic Safety Administration, United States Department of Health & Human Services Public Health Services, Health Resources & Services Administration, Maternal & Child Health Bureau *Emergency Medical Services Education Agenda for the Future: A Systems Approach*. Washington, DC: National Highway Traffic Safety Administration; 2000.
10. United States Department of Health & Human Services, Health Resources & Services Administration, Office of Rural Health Policy. *Rural and Frontier EMS Agenda for the Future: A Service Chief's Guide to Creating Community Support of Excellence in EMS*. United States Department of Health & Human Services; 2004. Available at: <ftp://ftp.hrsa.gov/ruralhealth/ServiceChiefsGuide.pdf>. Accessed August 16, 2014.
11. Joint Committee on Rural Emergency Care, National Association of State Emergency Medical Services Officials, National Organization of State Offices of Rural Health. *Improving Access to EMS and Health Care in Rural Communities: A Strategic Plan*. Published July, 2010. Available at: <http://www.nasemso.org/Projects/RuralEMS/documents/FinalApprovedbyNASESMSO-NOSORH.pdf>. Accessed August 16, 2014.
12. Patterson DG, Skillman SM. *National Consensus Conference on Community Paramedicine: Summary of an Expert Meeting*. Seattle, WA: WWAMI Rural Health Research Center, University of Washington; 2013.
13. Beck E, Craig A, Beeson J. Mobile integrated healthcare practice: a healthcare delivery strategy to improve access, outcomes, and value. *Modern Healthc*. 2013.
14. Goodwin J. Finding a new seat at the healthcare table. *EMS World*. 2013.
15. Pearson KB, Gale JA, Shaler G. *Community Paramedicine in Rural Areas: State and Local Findings and the Role of the State Flex Program*. Published February, 2014. Available at: <https://www.naemt.org/Files/MobileIntegratedHC/CP%20Policy%20Brief%202.pdf>. Accessed August 16, 2014.
16. United States Department of Health & Human Services, Agency for Healthcare Research and Quality, AHRQ Health Care Innovations Exchange. Trained Paramedics Provide Ongoing Support to Frequent 911 Callers, Reducing Use of Ambulance and Emergency Department Services. Published January, 2012. Available at: <https://innovations.ahrq.gov/profiles/trained-paramedics-provide-ongoing-support-frequent-911-callers-reducing-use-ambulance-and>. Accessed August 16, 2014.
17. Program overview—high utilizer 9-1-1/emergency department patients. MedStar Mobile Healthcare; 2014. Available at: <http://www.medstar911.org/community-health-program>. Accessed August 16, 2014.
18. Medstar high utilizer economic report thru February 2015. MedStar Mobile Healthcare; 2015. Available at: http://www.medstar911.org/Websites/medstar911/files/Content/1089414/MedStar_High_Utilizer_Econ_Analysis_thru_Feburary_2015.pdf. Accessed May 28, 2015.
19. MedStar CHF program overview. MedStar Mobile Healthcare; 2014. Available at: http://www.medstar911.org/Websites/medstar911/files/Content/1089414/MedStar_CHF_Program_Overview.pdf. Accessed August 16, 2014.
20. Yale New Haven Health Services Corporation Center for Outcomes Research and Evaluation. *Medicare Hospital Quality Chartbook Performance Report on Outcome Measures*. Centers for Medicare & Medicaid Services; 2013. Available at: <http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Downloads/-Medicare-Hospital-Quality-Chartbook-2013.pdf>. Accessed May 28, 2015.
21. MedStar CHF readmission reduction economic analysis through February 2015. MedStar Mobile Healthcare; 2015. Available at: http://www.medstar911.org/Websites/medstar911/files/Content/1089414/MedStar_CHF_Utilization_Analysis_10-13_thru_2-15.pdf. Accessed May 28, 2015.
22. MedStar CHF program patient satisfaction scores. MedStar Mobile Healthcare; 2014. Available at: http://www.medstar911.org/Websites/medstar911/files/Content/1089414/MIH_CHF_Patient_Satisfaction_6-14.pdf. Accessed August 16, 2014.
23. Misner D. Community paramedicine: part of an integrated healthcare system. *Emerg Med Serv*. 2005;34:89-90.
24. Andrews B, Duren J, Myers B. Community paramedics fill gaps, take load off EDs. *ED Manag*. 2014;26:30-34.
25. Community health programs: REMSA's Healthcare Innovation award. Published 2013. Available at: http://www.rccp.us/uploads/2/9/4/5/2945795/13.b-lessons_from_renos_cms_slides.pdf. Accessed December 12, 2014.
26. Blumberg C, ed. *Overview of REMSA CHP With Preliminary Outcomes, 1/20/15*. Reno Emergency Medical Services Agency; 2015.
27. Community Paramedic Pilot Project. State of California Emergency Medical Services Authority website. Published 2014. Available at: http://www.emsa.ca.gov/Community_Paramedicine. Accessed December 4, 2014.
28. Stevens A, Weinstein E. New program set to intervene to prevent readmissions, repeat ED visits due to acute exacerbations of asthma. *ED Manag*. 2013;25:139-141.
29. United States Department of Health & Human Services, Health Resources & Services Administration, Office of Rural Health Policy. *Community Paramedicine Evaluation Tool*. Published March, 2012. Available at: <http://www.hrsa.gov/ruralhealth/pdf/paramedicevaltool.pdf>. Accessed August 16, 2014.
30. A Catalyst for New Careers. North Central EMS Institute website. Published 2014. Available at: <http://www.communityparamedic.org/Colleges>. Accessed August 16, 2014.
31. Local Community Paramedicine Program Reached Students Beyond Minnesota. Hennepin Technical College website. Published May, 2015. Available at: <https://www.hennepintech.edu/news/pages/1128>. Accessed May 28, 2015.
32. Community Paramedic Program. Hennepin Technical College website. Published 2015. Updated June 18, 2015. Available at: <https://www.hennepintech.edu/cts/pages/1224>. Accessed June 18, 2015.
33. Community paramedic. Inver Hills Community College website, 2014. Available at: <https://www.inverhills.edu/Departments/EMS/CommunityParamedic.aspx>. Accessed December 4, 2014.
34. Zadavsky M. What community paramedicine is and why it's the future of our profession. *NAEMT News*. 2013.
35. IRCP History. International Roundtable on Community Paramedicine website. Published 2014. Available at: <http://www.ircp.info>. Accessed December 4, 2014.
36. Community Paramedicine Track. Zoll Incorporated website. Published 2014. Available at: <http://connect.zolldata.com/community-paramedicine>. Accessed August 16, 2014.
37. Centers for Medicare & Medicaid Services. *Ambulance Billing Guide December 2012*. Hingham, MA: NHIC Corp; 2010.
38. Committee on the Future of Emergency Care in the United States Health System, Board on Health Care Services, Institute of Medicine. *Emergency Medical Services: At the Crossroads*. Washington, DC: National Academies Press; 2007.
39. Munjal K, Carr BG. Realigning reimbursement policy and financial incentives to support patient-centered out-of-hospital care. *JAMA*. 2013;309:667-668.