ASPR TRACIE Technical Assistance Request

Requestor:  
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Request Receipt Date (by ASPR TRACIE): 21 February 2017  
Response Date: 23 February 2017  
Type of TA Request: Standard

Request:

The ASPR TRACIE Team was asked to collect resources related to the methods in which healthcare personnel and emergency medical service (EMS) providers are assessing and more efficiently providing needed services to the community.

Response:

The ASPR TRACIE team conducted an online search for community access to healthcare, barriers to healthcare access, improving healthcare access, telemedicine to improve healthcare access, and community paramedicine. We also reviewed existing ASPR TRACIE Topic Collections for materials on these subjects; namely, the Pre-Hospital and Virtual Medical Care Topic Collections. Resources gathered are listed below.

Section I: Community Paramedicine  
Section II: Telemedicine Resources: Applications for Telemedicine and Lessons Learned  
Section III: Telemedicine Resources: Call Centers and Triage Lines  
Section IV: Telemedicine Resources: General Information  
Section V: Telemedicine Resources: Plans, Tools, and Templates  
Section VI: Resources Related to Community Access to Health Care  
Section VII: Agencies and Organizations  
Section VIII: Subject Matter Experts

I. Community Paramedicine Resources


The authors of this document propose a delivery strategy for an inter-professional practice of medicine – Mobile Integrated Healthcare Practice (MIHP). It is intended to serve a range of patients in the out-of-hospital setting by providing 24/7 needs based at-home, integrating acute care, chronic care, and prevention services.

The authors undertook an extensive literature review to help gain a clear understanding of the emerging research surrounding the concept of community paramedicine. Results were promising, but research is limited.


This website provides an overview of community paramedicine, as well as information on the 13 Community Paramedicine pilot projects in a dozen California locations that are being conducted by the California Emergency Medical Services Authority (EMSA), in collaboration with the California Health Care Foundation (CHCF). The projects focus on providing services where access to healthcare is limited or when a short-term intervention is needed.


This website includes information on the Community Paramedic Program, which provides training for first responders at the appropriate level to serve communities more broadly in the areas of: primary care, public health, disease management, prevention and wellness, mental health, and oral health. The program also adapts to the specific needs and resources of each community.


The author summarizes findings from a March 2013 meeting of emergency medical services (EMS), healthcare, and government stakeholders who discussed "how to best categorize, formalize and maximize the value and integration of EMS into our current and future healthcare system." Participants came to consensus on several points regarding community paramedicine.


The authors provide an overview of community paramedicine in the United States and abroad and highlight several areas for more research.

This report provides a brief history of emergency medical services and community paramedicine in California including some recommendations for further exploration of the field to meet community health needs in the future.


This document provides information on the development and characteristics of innovative healthcare initiatives, such as mobile integrated healthcare and community paramedicine. It is a summary analysis report that addresses the results and conclusions of a survey conducted by NAEMT in 2014 related to the nation’s currently operating MIH-CP programs.

National Conference of State Legislatures. (2016). Beyond 911: State and Community Strategies for Expanding the Primary Care Role of First Responders.

This website highlights resources and case studies in the field of Community Paramedicine, which may assist others with implementing this type of pre-hospital care.


This report provides a summary of topics covered by the 2012 National Consensus Conference on Community Paramedicine (CP) attendees. The report is divided into six main sections: Education and Expanded Practice Roles; Integration of CP Providers with Other Health Providers; Medical Direction and Regulation; Funding and Reimbursement; Data, Performance Improvement, and Outcome Evaluation; and Community Paramedicine Research Agenda.


This document was designed around the resources and tools that were paramount in the development of Abbeville’s Community Paramedicine program. Version one, The Abbeville Experience, showcases examples, resources, tools, recommendations, lessons learned and best practices. As a result, the Blueprint is specific to South Carolina and is geared towards EMS agencies.

The Joint Committee on Rural Emergency Care of and for the National Association of State EMS Officials and the National Organization of State Offices of Rural Health. (2010). Improving Access to EMS and Health Care in Rural Communities: A Strategic Plan.

This paper is an initiative of the Joint Committee on Rural Emergency Care to provide national EMS planners with strategies for improving both rural EMS and healthcare in general.

This document addresses the need for each community paramedicine program to define its system-specific health status benchmarks and performance indicators and to use a variety of community health and public health interventions to improve the community’s health status. It also addresses reducing the burden of illness, chronic disease, and injury as a community-wide public health problem, not strictly as a patient care issue.

University of Minnesota, University of North Carolina at Chapel Hill, and University of Southern Maine. (2014). The Evidence for Community Paramedicine in Rural Areas: State and Local Finding and the Role of the State Flex Program.

The authors of this study examined the evidence base for community paramedicine in rural communities, the role of community paramedics in rural healthcare delivery systems, the challenges faced by states in implementing community paramedicine programs, and the role of the state Flex programs in supporting development of community paramedicine programs. Additionally, it provides a snapshot of community paramedicine programs currently being developed and/or implemented in rural areas.


The author of this white paper examines the ways in which community paramedicine is evolving in rural West Virginia and is becoming a model of community-based health care.

II. Telemedicine Resources: Applications for Telemedicine and Lessons Learned


The authors examined 39 studies related to telemedicine that met their inclusion criteria and determined that telemedicine can have a positive effect on emergency medical care.


The authors conducted a literature review covering 2007-2012 to identify mobile health care technology solutions to aid in disaster management. They found five types of applications: disaster scene management; remote monitoring of casualties; medical image transmission (teleradiology); decision support applications; and field hospital information
technology (IT) systems, most of which were still under development at the time of their review.


The authors conducted semi structured interviews with both regional key informants and national organizations with Gulf Coast recovery interests and determined seven factors for telehealth success: funding, regulatory, workflow, attitudes, personnel, technology, and evaluation.


The authors describe a mobile application that uses digital images of patients' burns superimposed on a patient-specific 3D model. The application was found to more accurately estimate burn size than burn experts when tested at two separate international burn meetings.


The authors describe the successful use of a telemedicine videoconferencing system to treat patients following a 2013 nightclub fire in Brazil.


Authors from the University of Texas Medical Branch (UTMB) describe how UTMB was able to get its telemedicine services up and running within a week following Hurricane Ike due in part to the flexibility of its data network and plasticity of its telemedicine program. They offer lessons learned from the UTMB experience for future disasters.


The authors tested an in-ambulance telemedicine system and found that pre-hospital diagnoses were in agreement with final diagnoses 90% of the time; pre-notification of the hospital via text message was successful 90% of the time; and transmission of a pre-hospital report was completed 95% of the time. Challenges experienced were related primarily to limited connectivity, but also to hardware, software, or human error.

Using experience from the 2010 Haiti earthquake, the authors discuss the need to ensure that networks are properly constructed and wireless connectivity is robust to optimize health care delivery, medical documentation, logistics, response coordination, communication, and telemedicine during disasters.

III. Telemedicine Resources: Call Centers and Triage Lines


This report summarizes the experience of jurisdictions across the country using hotlines and call centers to support the response to the 2009 H1N1 influenza pandemic. Algorithms for antiviral distribution; legal opinions on the use of hotlines; risk communication documents; and standing orders are included in the appendices.


The authors explain the development, testing, and implementation of a model to enable community health call centers (e.g., poison control centers, nurse advice lines) to support home-management and shelter-in-place approaches in certain mass casualty or health emergency events. The report includes a matrix with possible call center capabilities aligned with National Planning Scenarios and other guidance that can be tailored by call centers.

Center for Infectious Disease Research and Policy (CIDRAP) at the University of Minnesota. (2016). Using Hotlines in Disaster Preparedness and Response.

This webpage summarizes examples of the way that hotlines have and are being used to support disaster preparedness and response.


The authors describe a pilot program in which dental school faculty members received training in outbreak investigation and telephone triage to assist the New York City Department of Health and Mental Hygiene in preparing to respond to pandemic influenza. They propose the use of dental professionals and/or other "nontraditional healthcare personnel" in support of call centers and telephone triage lines.

The authors describe the Centers for Disease Control and Prevention's Nurse Triage Line Project and its goals of using a coordinated network of nurse triage telephone lines during a pandemic to assess the health status of callers, help callers determine the most appropriate site for care, disseminate information, provide clinical advice, and provide access to antiviral medications for ill people, if appropriate.


This is a summary of a webinar focused on the Nurse Triage Line Project (including lessons learned from H1N1) and included representation from the public health law workgroups of the National Association of County and City Health Officials (NACCHO), the Association of State and Territorial Health Officials (ASTHO), and the Council of State and Territorial Epidemiologists (CSTE). Participants discussed how a coordinated network of telephone triage lines may be useful during a severe pandemic or other public health emergency; legal issues and concerns that may be associated with using such a network; and possible solutions for resolving issues and concerns.


This presentation discusses how Nurse Triage Lines (NTLs) may be used during disasters and includes an assessment of laws and regulations that impact the ability to set up NTLs in each state. Minnesota's experience during H1N1, and the CDC's Nurse Triage Line Project, are also discussed.


This workbook guides planners through the process of determining the need for a call center, as well as how to operationalize a call center for use during public health emergencies.


The authors present the rationale behind the Minnesota Flu Line, and describe its implementation during the 2009 H1N1 influenza pandemic.

The authors describe the successful use of a telephone nurse triage line (NTL) set up by the Minnesota Department of Health for evaluating individuals with influenza-like illness. The NTL diverted callers from acute care visits at low cost and had a high rate of satisfaction among callers.

The University of New Mexico School of Medicine. (2016). *Project ECHO*.

The Extension for Community Health Outcomes (known as Project ECHO) was created to help healthcare providers in rural and underserved areas with information they need to treat conditions such as Hepatitis C, chronic pain, and behavioral health disorders. In the event of a disaster, one or more of ECHO's "hubs" could assist with virtual healthcare delivery.


The author proposes bringing together the expertise of emergency response organizations, public health agencies, and poison control centers to institute call centers and/or triage lines to disseminate information to the public during emergencies, and answer questions and concerns to keep concerned individuals from flooding local emergency rooms. Real-world examples of successful collaborations from Canada, Great Britain, and the U.S. are included.

### IV. Telemedicine Resources: General Information


Participants in a conference breakout session were asked to respond to a series of questions about current and future use of telemedicine for public health disasters.


The authors discuss the use of telemedicine to bring the specialized expertise of burn centers to more patients. They also describe its challenges, including technical difficulties, legal uncertainties, limited financial support, reimbursement issues, and the need for more evidence of its value and efficiency.

The authors describe the Virtual Naval Hospital, a digital library set up in 1997 to "make the Internet a useful medical reference tool for naval primary care providers at the point of care, by helping them take better care of patients, and, as a health promotion tool for sailors and marines, to help personnel live healthier lives."


This vendor's guide provides overviews of 19 categories under telemedicine (e.g., pros and cons, telemedicine and clinical guidelines, telemedicine and Medicaid, and HIPAA and telemedicine).

Latifi, R. (2010). *Telemedicine for Trauma, Emergencies, and Disaster Management*. (Book available for purchase.)

This book discusses the use of telemedicine in the management of trauma, disaster, and emergency situations. Critical discussions on the practicality, logistics, and safety of telemedicine from recognized experts in the field are included.


The authors conducted a literature review covering 1980-2013 to identify when telemedicine or telepresence was reported for disaster management, both in real life and in mock and simulation situations. They conclude that it is critical to establish telemedicine infrastructure and protocols in areas prone to disasters prior to an event occurring to avoid having to establish a telemedicine program in a chaotic environment.


The authors discuss how telehealth provides surge capacity by providing medical and public health expertise at a distance, limiting safety and logistical concerns. They note several applications for telehealth in disaster response, and propose ways to expand its use more broadly in future.

This paper describes the use of telemedicine in the pre-hospital setting for disaster response. The authors discuss telemedicine disaster applications and technology, as well as implementation barriers and legal and ethical issues.


This report to Congress discusses telehealth and its potential uses during public health emergencies and disaster medical responses. Payment and reimbursement considerations, as well as pertinent legal issues, are included.


The authors developed and measured a model application in order to quantitatively analyze the potential health benefits of telemedicine in disaster response. They found that the model can support disaster response activities and enhance surge capacity; enhance the speed and effectiveness of medical response; and improve resource and operations planning, as well as internal and external situational awareness.

V. Telemedicine Resources: Plans, Tools, and Templates


This report summarizes the experience of jurisdictions across the country using hotlines and call centers to support the response to the 2009 H1N1 influenza pandemic. Algorithms for antiviral distribution; legal opinions on the use of hotlines; risk communication documents; and standing orders are included in the appendices.


The authors explain the development, testing, and implementation of a model to enable community health call centers (e.g., poison control centers, nurse advice lines) to support home-management and shelter-in-place approaches in certain mass casualty or health emergency events. The report includes a matrix with possible call center capabilities aligned with National Planning Scenarios and other guidance that can be tailored by call centers.

This action guide provides step-by-step instructions for successfully completing the CHANGE tool. CHANGE can be used to gain a picture of the policy, systems, and environmental change strategies currently in place throughout the community; develop a community action plan for improving policies, systems, and the environment to support healthy lifestyles; and assist with prioritizing community needs and allocating available resources.


This workbook guides planners through the process of determining the need for a call center, as well as how to operationalize a call center for use during public health emergencies.

VI. **Resources Related to Community Access to Healthcare**


The Institute of Medicine convened the Committee on the Learning Health Care System in America to explore the most fundamental challenges to health care and to propose actions that can be taken to achieve a health care system characterized by continuous learning and improvement. This report explores the imperatives for change, the emerging tools that make transformation possible, the vision for a continuously learning health care system, and the path for achieving this vision.


The authors of this study address the disparities in health care access, and an effort to redress them, from a public health perspective. Public health agencies can link people to needed services such as immunizations, testing, and treatment; ensure the availability of health care; ensure the competency of the public health and personal health care workforce; and evaluate the effectiveness, accessibility, and quality of personal and population-based services.

The article addresses five separate studies that concluded that nurse practitioners expand access to care, improve patient health outcomes, boost rural health care, lower primary care costs and reduce emergency room admissions. The five studies discussed in this article include:

- Montana State University: Nurse practitioner patients less costly to Medicare than physician patients
- Montana State University: MSU study finds nurse practitioners more likely than medical doctors to work in rural areas
- University of Texas Medical Branch at Galveston: Study backs quality of nurse practitioner, physician assistant care
- University of California, San Francisco: Full Practice Authority for Nurse Practitioners Lowers Primary Care Costs
- George Mason University: "Scope of Practice" Laws Raise Health Care Costs for Poor


This article addresses the importance of healthcare access to rural communities, and the barriers that rural residents experience.

### VII. Agencies and Organizations

**Note:** The agencies and organizations listed in this section have a page, program, or specific research dedicated to this topic area.

**Pre-Hospital-Specific Webpages:**

- American College of Emergency Physicians. [EMS and Disaster Preparedness](#).
- American Trauma Center. [Trauma Information Exchange Program (TIEP)](#).
- [Emergency Medical Services for Children](#).
- [EMSWORLD](#).
- [Emergency Nurses Association](#).
- [Federal Interagency Committee on EMS](#).
- [International Academies of Emergency Dispatch](#).
- [National Association of Emergency Medical Technicians](#).
National Association of State EMS Officials.

National EMS Information System.

National Highway Traffic Safety Administration. NHTSA EMS.

Paramedic Protocol Provider. EMS Protocols.

U.S. Department of Health and Human Services, Office of the Assistant Secretary for Preparedness and Response.

Telemedicine-Specific Webpages:

American Telemedicine Association.

Missouri Telehealth Network.

The UTMB Center for Telehealth Research and Policy.

UNM Center for Telehealth.

U.S. Department of Health and Human Services, Health Resources and Services Administration. Telehealth Programs.

VA Telehealth Services.

VIII. Subject Matter Experts

- Jeffrey Beeson, DO, RN, EMT-P Medical Director, Emergency Physicians Advisory Board, Fort Worth, TX, jbeeson@medstar911.org.

- Kevin McGinnis, MPS, Paramedic Program Manager, Community Paramedicine, Mobile Integrated Healthcare, Rural Emergency Care National Association of State EMS Officials (NASEMSO), mcginnis@nasemso.org.

- Brent Myers, MD, MPH, President-elect National Association of EMS Physicians (NAEMSP), Director and Medical Director Wake County Department of EMS Raleigh, NC, Adjunct Assistant Professor, Emergency Medicine University of North Carolina Chapel Hill, NC, brent.myers@wakegov.com.

- Lynn White, MS, National Director of Resuscitation and Accountable Care, American Medical Response, Greenwood Village, CO, Lynn.White@amr.net.