NFPA®

451

Guide for Community Health Care Programs

2020

NFPA®

IMPORTANT NOTICES AND DISCLAIMERS CONCERNING NFPA® STANDARDS

NFPA® codes, standards, recommended practices, and guides ("NFPA Standards"), of which the document contained herein is one, are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together volunteers representing varied viewpoints and interests to achieve consensus on fire and other safety issues. While the NFPA administers the process and establishes rules to promote fairness in the development of consensus, it does not independently test, evaluate, or verify the accuracy of any information or the soundness of any judgments contained in NFPA Standards.

The NFPA disclaims liability for any personal injury, property, or other damages of any nature whatsoever, whether special, indirect, consequential or compensatory, directly or indirectly resulting from the publication, use of, or reliance on NFPA Standards. The NFPA also makes no guaranty or warranty as to the accuracy or completeness of any information published herein.

In issuing and making NFPA Standards available, the NFPA is not undertaking to render professional or other services for or on behalf of any person or entity. Nor is the NFPA undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances.

The NFPA has no power, nor does it undertake, to police or enforce compliance with the contents of NFPA Standards. Nor does the NFPA list, certify, test, or inspect products, designs, or installations for compliance with this document. Any certification or other statement of compliance with the requirements of this document shall not be attributable to the NFPA and is solely the responsibility of the certifier or maker of the statement.

ALERT: THIS STANDARD HAS BEEN MODIFIED BY A TIA OR ERRATA

Users of NFPA codes, standards, recommended practices, and guides ("NFPA Standards") should be aware that NFPA Standards may be amended from time to time through the issuance of a Tentative Interim Amendment (TIA) or corrected by Errata. An official NFPA Standard at any point in time consists of the current edition of the document together with any TIAs and Errata then in effect.

To determine whether an NFPA Standard has been amended through the issuance of TIAs or corrected by Errata, go to www.nfpa.org/docinfo to choose from the list of NFPA Standards or use the search feature to select the NFPA Standard number (e.g., NFPA 13). The document information page provides up-to-date document-specific information as well as postings of all existing TIAs and Errata. It also includes the option to register for an "Alert" feature to receive an automatic email notification when new updates and other information are posted regarding the document.

ISBN: 978-145592345-8 (PDF)

ADDITIONAL IMPORTANT NOTICES AND DISCLAIMERS CONCERNING NFPA® STANDARDS

Updating of NFPA Standards

Users of NFPA codes, standards, recommended practices, and guides ("NFPA Standards") should be aware that these documents may be superseded at any time by the issuance of a new edition, may be amended with the issuance of Tentative Interim Amendments (TIAs), or be corrected by Errata. It is intended that through regular revisions and amendments, participants in the NFPA standards development process consider the then-current and available information on incidents, materials, technologies, innovations, and methods as these develop over time and that NFPA Standards reflect this consideration. Therefore, any previous edition of this document no longer represents the current NFPA Standard on the subject matter addressed. NFPA encourages the use of the most current edition of any NFPA Standard [as it may be amended by TIA(s) or Errata] to take advantage of current experience and understanding. An official NFPA Standard at any point in time consists of the current edition of the document, including any issued TIAs and Errata then in effect.

To determine whether an NFPA Standard has been amended through the issuance of TIAs or corrected by Errata, visit the "Codes & Standards" section at www.nfpa.org.

Interpretations of NFPA Standards

A statement, written or oral, that is not processed in accordance with Section 6 of the Regulations Governing the Development of NFPA Standards shall not be considered the official position of NFPA or any of its Committees and shall not be considered to be, nor be relied upon as, a Formal Interpretation.

Patents

The NFPA does not take any position with respect to the validity of any patent rights referenced in, related to, or asserted in connection with an NFPA Standard. The users of NFPA Standards bear the sole responsibility for determining the validity of any such patent rights, as well as the risk of infringement of such rights, and the NFPA disclaims liability for the infringement of any patent resulting from the use of or reliance on NFPA Standards.

NFPA adheres to the policy of the American National Standards Institute (ANSI) regarding the inclusion of patents in American National Standards ("the ANSI Patent Policy"), and hereby gives the following notice pursuant to that policy:

NOTICE: The user's attention is called to the possibility that compliance with an NFPA Standard may require use of an invention covered by patent rights. NFPA takes no position as to the validity of any such patent rights or as to whether such patent rights constitute or include essential patent claims under the ANSI Patent Policy. If, in connection with the ANSI Patent Policy, a patent holder has filed a statement of willingness to grant licenses under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license, copies of such filed statements can be obtained, on request, from NFPA. For further information, contact the NFPA at the address listed below.

Law and Regulations

Users of NFPA Standards should consult applicable federal, state, and local laws and regulations. NFPA does not, by the publication of its codes, standards, recommended practices, and guides, intend to urge action that is not in compliance with applicable laws, and these documents may not be construed as doing so.

Copyrights

NFPA Standards are copyrighted. They are made available for a wide variety of both public and private uses. These include both use, by reference, in laws and regulations, and use in private self-regulation, standardization, and the promotion of safe practices and methods. By making these documents available for use and adoption by public authorities and private users, the NFPA does not waive any rights in copyright to these documents.

Use of NFPA Standards for regulatory purposes should be accomplished through adoption by reference. The term "adoption by reference" means the citing of title, edition, and publishing information only. Any deletions, additions, and changes desired by the adopting authority should be noted separately in the adopting instrument. In order to assist NFPA in following the uses made of its documents, adopting authorities are requested to notify the NFPA (Attention: Secretary, Standards Council) in writing of such use. For technical assistance and questions concerning adoption of NFPA Standards, contact NFPA at the address below.

For Further Information

All questions or other communications relating to NFPA Standards and all requests for information on NFPA procedures governing its codes and standards development process, including information on the procedures for requesting Formal Interpretations, for proposing Tentative Interim Amendments, and for proposing revisions to NFPA standards during regular revision cycles, should be sent to NFPA headquarters, addressed to the attention of the Secretary, Standards Council, NFPA, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101; email: stds_admin@nfpa.org.

For more information about NFPA, visit the NFPA website at www.nfpa.org. All NFPA codes and standards can be viewed at no cost at www.nfpa.org/docinfo.

NFPA® 451

Guide for

Community Health Care Programs

2020 Edition

This edition of NFPA 451, *Guide for Community Health Care Programs*, was prepared by the Technical Committee on Emergency Medical Services. It was issued by the Standards Council on June 10, 2019, with an effective date of June 30, 2019.

This document has been amended by one or more Tentative Interim Amendments (TIAs) and/or Errata. See "Codes & Standards" at www.nfpa.org for more information.

This edition of NFPA 451 was approved as an American National Standard on June 30, 2019.

Origin and Development of NFPA 451

The first edition of NFPA 451, *Guide for Community Health Care Programs*, has been published after almost 5 years of development. The guide was originally requested by the International Association of Fire Fighters in 2013 because the concept of community paramedicine was spreading throughout the EMS industry, and EMS systems were searching for the best way to model themselves to meet the changing needs of their communities. At a time when the health care industry is undergoing major changes in the United States and throughout the world, the guidance in NFPA 451 is designed to add value, flexibility, and additional capabilities to EMS systems. Even the title of the document is designed for flexibility. While the systems for which this guide is designed are normally known as "community paramedicine" or "mobile integrated health care," the technical committee felt that these terms were limited and that "community health care programs" better reflects the need to be versatile and to partner with other organizations in order to be successful. NFPA 451 can apply to any EMS system regardless of type, delivery model, or affiliation, and might even bring systems of different types together.

The technical committee thanks the EMS associations that participated in technical committee meetings and conference calls to support the development of this guide. They would also like to thank the National Highway Traffic Safety Administration (NHTSA) office EMS for their support and assistance.

Finally, the technical committee would like to dedicate this first edition of NFPA 451 to the memory of its late inaugural chairman and the person with whom the NFPA 451 project began, Kenneth R. Knipper. Ken was a visionary EMS leader representing the National Volunteer Fire Council on many EMS committees and projects. It was his passion that this guide be for any EMS system — fire-based, hospital-based, private, third service, volunteer, and so on — and that it encourage EMS systems to be innovative in their approaches in order to best serve their communities. Ken and his family are thanked for their hard work and inspiration.

Technical Committee on Emergency Medical Services

Kyle R. Gorman, *Chair*
Portland, OR [SE]

Greg M. Ayers, Philips Medical, WA [M]

Chad E. Beebe, ASHE - AHA, WA [U]

Jason Brollini, United EMS Workers, CA [L]

Ken Brown, Goochland Fire Rescue (Retired), VA [L]
Rep. National Volunteer Fire Council

Michael Dailey, Albany Medical College, NY [SE]

Chad Deardorff, City of York Fire/Rescue Services, PA [E]

Jim Detienne, Montana EMS and Trauma, MT [E]
Rep. National Association of State EMS Officials

Jonathan Epstein, American Red Cross, MA [U]

Coleman D. Figg, Chesterfield Fire & EMS, VA [E]

Raymond Fowler, UT Southwestern Medical Center, TX [SE]
Rep. American College of Emergency Physicians

David R. Harris, U.S. Air Force, NJ [U]

James W. Horton, Fort Worth Fire Department, TX [U]

Michael Kass, Armstrong Ambulance Service, MA [U]
Rep. American Ambulance Association

Jeffrey T. Lindsey, University of Florida, FL [SE]

Charles Lucas, Bolivar County Fire Department, MS [E]

Richard D. MacKinnon, Jr., Town of Whitman Fire Department, MA [L]
Rep. International Association of Fire Fighters

Kevin J. McGee, Prince William County Fire & Rescue, VA [E]

Melissa McNally, American Medical Response, Inc. (AMR), FL [U]

Marc E. Nason, Artesia Fire Department, NM [U]

William S. Niehenke, Glatfelter Insurance Group, PA [I]
Rep. Volunteer Firemen's Insurance Services, Inc.

Richard W. Patrick, U.S. Department of Homeland Security, MD [SE]

Vincent D. Robbins, MONOC; Monmouth Ocean Hospital Service Corp., NJ [E]
Rep. National EMS Management Association

James Robinson, International Association of EMS Chiefs, DC [E]

Steve Rowland, Demers Ambulances USA, Inc., FL [M]

David Santilli, Bridgewater Fire, MA [E]

Jeffrey Siegler, Wuems, MO [U]
Rep. National Association of EMS Physicians

David O. Simmons, Firemen's Association of the State of New York, NY [U]

Benjamin Scott Stone, Los Alamos Fire Department, NM [E]

Gary Wingrove, The Paramedic Foundation, MN [SE]

Matthew Zavadsky, MedStar Mobile Healthcare, TX [U]

Alternates

Byron F. Andrews, III, Sterling Volunteer Rescue Squad, VA [E]
(Voting Alt. to IAFC Rep.)

Thomas Breyer, International Association of Fire Fighters, DC [L]
(Alt. to Richard D. MacKinnon, Jr.)

Justin Eberly, Volunteer Fireman's Insurance Services, Inc. (VFIS), PA [I]
(Alt. to William S. Niehenke)

Mark L. Johnston, The Christ Hospital, OH [SE]
(Voting Alt.)

Chetan Kharod, U.S. Department of the Air Force, TX [U]
(Alt. to David R. Harris)

Anthony McDowell, Henrico County, VA [E]
(Alt. to Kevin J. McGee)

Roshanna Minton, Wayne Township Fire Department, IN [E]
(Alt. to Chad Deardorff)

Terry Mullins, Arizona Bureau of Emergency Medical Services and Trauma (EMS), AZ [E]
(Alt. to Jim Detienne)

Ed Mund, Centralia, WA [L]
(Alt. to Ken Brown)

John Montes, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for documents relating to emergency medical services, except those documents covered by other existing NFPA committees.

Contents

NFPA 451

Guide for

Community Health Care Programs

2020 Edition

IMPORTANT NOTE: This NFPA document is made available for use subject to important notices and legal disclaimers. These notices and disclaimers appear in all publications containing this document and may be found under the heading "Important Notices and Disclaimers Concerning NFPA Standards." They can also be viewed at www.nfpa.org/disclaimers or obtained on request from NFPA.

UPDATES, ALERTS, AND FUTURE EDITIONS: New editions of NFPA codes, standards, recommended practices, and guides (i.e., NFPA Standards) are released on scheduled revision cycles. This edition may be superseded by a later one, or it may be amended outside of its scheduled revision cycle through the issuance of Tentative Interim Amendments (TIAs). An official NFPA Standard at any point in time consists of the current edition of the document, together with all TIAs and Errata in effect. To verify that this document is the current edition or to determine if it has been amended by TIAs or Errata, please consult the National Fire Codes® Subscription Service or the "List of NFPA Codes & Standards" at www.nfpa.org/docinfo. In addition to TIAs and Errata, the document information pages also include the option to sign up for alerts for individual documents and to be involved in the development of the next edition.

NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Annex A.

A reference in brackets [ ] following a section or paragraph indicates material that has been extracted from another NFPA document. Extracted text may be edited for consistency and style and may include the revision of internal paragraph references and other references as appropriate. Requests for interpretations or revisions of extracted text shall be sent to the technical committee responsible for the source document.

Information on referenced and extracted publications can be found in Chapter 2 and Annex B.

Chapter 1 Administration

1.1 Scope. This guide provides direction for planning, preparing, implementing, and evaluating community health care programs to agencies supporting the emergency medical services (EMS) mission.

1.2 Purpose. The purpose of this document is to provide a framework for the design and evaluation of comprehensive community health care programs provided by local EMS systems, which may include disparate elements of government or the private sector.

Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this guide and should be considered part of the recommendations of this document.

2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA *101®*, *Life Safety Code®*, 2018 edition.

NFPA 1500™, *Standard on Fire Department Occupational Safety, Health, and Wellness Program*, 2018 edition.

2.3 Other Publications.

2.3.1 Other Publications.

Dye, R., and D. Merriman. "Tax Increment Financing: A Tool for Local Economic Development," *Land Lines* (January 2006).

Merriam-Webster's Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

2.4 References for Extracts in Advisory Sections.

NFPA 79, *Electrical Standard for Industrial Machinery*, 2018 edition.

NFPA 402, *Guide for Aircraft Rescue and Fire-Fighting Operations*, 2019 edition.

NFPA 901, *Standard Classifications for Incident Reporting and Fire Protection Data*, 2016 edition.

NFPA 1500™, *Standard on Fire Department Occupational Safety, Health, and Wellness Program*, 2018 edition.

NFPA 1521, *Standard for Fire Department Safety Officer Professional Qualifications*, 2015 edition.

NFPA 1561, *Standard on Emergency Services Incident Management System and Command Safety,* 2014 edition.

NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, 2016 edition.

Chapter 3 Definitions

3.1 General. The definitions contained in this chapter apply to the terms used in this guide. Where terms are not defined in this chapter or within another chapter, they should be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster's Collegiate Dictionary*, 11th edition, is the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3 Guide. A document that is advisory or informative in nature and that contains only nonmandatory provisions. A guide may contain mandatory statements such as when a guide can be used, but the document as a whole is not suitable for adoption into law.

3.2.4 Should. Indicates a recommendation or that which is advised but not required.

3.2.5 Standard. An NFPA Standard, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be

considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA Manuals of Style. When used in a generic sense, such as in the phrase "standards development process" or "standards development activities," the term "standards" includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.

3.3 General Definitions.

3.3.1 Address. A number or other code and the street name identifying a location.

3.3.2 Alarm. A signal or message from a person or device indicating the existence of an emergency or other situation that requires immediate action.

3.3.3 Ambulance. A vehicle designed, equipped, and operated by approved personnel trained in the treatment of the sick or injured that responds to urgent, unscheduled requests for aid and/or transport of sick or injured persons.

3.3.4 Ambulance Service. An organization that utilizes approved personnel trained in the treatment and transportation (to an appropriate medical facility) of the sick or injured.

3.3.5* American College of Emergency Physicians (ACEP). A national organization of emergency physicians committed to advancing emergency care through continuing education, research, and public education.

3.3.6 Arrival. The point at which a vehicle is stopped at the scene of a response destination or address.

3.3.7 Arrived at Destination. The time that a responding unit arrived at the hospital or transfer point.

3.3.8 Automated Vehicle Locator (AVL). A computerized mapping system used to track the location of vehicles.

3.3.9 Available for Service. The time a unit is available for response.

3.3.10 Bloodborne Pathogens. Microorganisms that are present in human blood and can cause diseases in humans.

3.3.11 Call. A request for assistance to which equipment and personnel are deployed.

3.3.12 Call for Help. The time that a third party or a patient first attempts to contact outside assistance.

3.3.13 Call Intake. The procedure for answering the phone or other device that is used to receive a signal or message from a person or device indicating the need for medical assistance, learning the nature of the emergency, and verifying the address of the emergency.

3.3.14 Call Processing. The interval from call intake by the unit-dispatching agency to the time of unit notification, including answering the phone (alarm), gathering vital information, and initiating a response by dispatching the appropriate unit(s).

3.3.15 Chain of Survival. A metaphor to communicate the interdependence of a community's emergency response to cardiac arrest.

3.3.16 Compliance. Adherence or conformance to laws, regulations, and standards.

3.3.17 Cross-Trained/Dual Role (CT/DR). An emergency service that allows personnel trained in two service functions, such as fire suppression and emergency medical care, to function in either role.

3.3.18 Defibrillation. The delivery of an electrical shock to the heart intended to reverse abnormal electrical activity.

3.3.19 Defibrillator.

3.3.19.1 ***Automated External Defibrillator (AED).*** A device that administers an electric shock through the chest wall to the heart using built-in computers to assess the patient's heart rhythm and defibrillate as needed.

3.3.19.2 ***Manual Defibrillator.*** A device requiring operation by trained medical personnel that delivers an electric shock through the chest wall to the heart.

3.3.20 Deployment. The procedures by which resources are distributed throughout the service area.

3.3.21 Dispatch. To send out emergency response resources promptly to an address or incident location for a specific purpose.

3.3.21.1 ***Computer-Aided Dispatch (CAD).*** A dispatching method or process in which a computer and its associated terminal(s) are used to provide relative dispatch data to the concerned telecommunicator.

3.3.21.2 ***Emergency Medical Dispatch.*** The receipt and management of requests for emergency medical assistance in the emergency medical services (EMS) system.

3.3.22 Dispatch Time. A discrete time stamp that represents unit notification.

3.3.23 Documentation. The process of gathering, classifying, and storing information.

3.3.24 Emergency. A condition or situation in which a prudent layperson perceives a need for immediate response.

3.3.25 Emergency Medical Dispatcher (EMD). Emergency medical services (EMS) personnel specifically trained and certified in interviewing techniques, pre-arrival instructions, and call prioritization.

3.3.26 Emergency Medical Services (EMS). Providing patient services that might include the provision of assessment; treatment such as first aid, CPR, basic life support (BLS), and/or advanced life support (ALS); and other prehospital procedures, including ambulance transportation of patients.

3.3.27 Emergency Medical Services for Children (EMS-C). A national initiative to reduce child and youth disability and death from severe illness or injury.

3.3.28 Emergency Medical Technician (EMT). A term for any prehospital provider trained and certified at the EMT-Basic level or higher.

3.3.28.1 ***Emergency Medical Technician — Basic (EMT-B).*** A prehospital basic life support (BLS) provider trained according to the National Highway Traffic Safety Administration (NHTSA) National Standard Curriculum.

3.3.28.2 ***Emergency Medical Technician — Advanced (EMT-A).*** A prehospital provider trained according to the National Highway Traffic Safety Administration (NHTSA) National Standard Curriculum to intermediate levels.

3.3.28.3 ***Emergency Medical Technician — Paramedic (EMT-P).*** A prehospital provider trained according to National Highway Traffic Safety Administration (NHTSA) National Standard Curriculum to advanced levels.

3.3.29 Emergency Operations. Activities of emergency responders relating to rescue, fire suppression, emergency medical care, and special operations.

3.3.30 Employee Assistance Program (EAP). An EAP is an employer-sponsored service designed for personal or family problems, including mental health, substance abuse, various addictions, marital problems, parenting problems, emotional problems, or financial or legal concerns.

3.3.31 Employee Illness and Injury. A work-related illness or injury requiring evaluation or medical follow-up.

3.3.32 Employee Turnover. Termination of employment with the organization for any reason.

3.3.33 Fire Suppression. The activities involved in controlling and extinguishing fires. [**1500,** 2018]

3.3.34 First Intervention Time. The time that the first emergency medical services (EMS) skill intercession (e.g., starting an IV, defibrillation, CPR, or extrication) is begun.

3.3.35 First PSAP Call Time. The time the telephone (or other notification device or mechanism) activates in the first public safety answering point (or other designated entity).

3.3.36 First Responder (EMS). Functional provision of initial assessment (i.e., airway, breathing, and circulatory systems) and basic first-aid intervention, including CPR and automatic external defibrillator (AED) capability. [**1710,** 2016]

3.3.37 Governance. All related federal, provincial, state, and local laws, regulations, administrative requirements, and policies.

3.3.38 GSA KKK Specifications. A set of federal specifications issued by the General Services Administration (GSA) relating to purchasing requirements for ambulance design and manufacture.

3.3.39 Hazard. A source of possible injury or damage to health. [**79,** 2018]

3.3.40 Hazardous Material. A substance that presents an unusual danger to persons due to toxicity, chemical reactivity, decomposition, corrosiveness, explosion or detonation, etiological hazards, or similar properties.

3.3.41 Health Care Financing Administration (HCFA). The former name of the Centers for Medicare and Medicaid Services (CMS).

3.3.42 Health Care Models.

3.3.42.1 ***Fee-for-Service (FFS) Models.*** A model that financially rewards providers based on the volume of services provided.

3.3.42.2 ***Value-Based Models.*** A model that financially rewards providers based on the value of the services they provide.

3.3.43 Health Maintenance Organization (HMO). An organized system of health care that provides or arranges for a range of basic and supplemental health care services to a voluntarily enrolled group of persons under a prepayment plan.

3.3.44 Incident Location. The address or other identifiable area of an event.

3.3.45 Incident Management System. A system that defines the roles and responsibilities to be assumed by responders and the standard operating procedures to be used in the management and direction of emergency incidents and other functions. [**1561,** 2014]

3.3.46 Incident or Onset Time. The time the incident occurred or the time that the symptoms developed.

3.3.47 In-Service Utilization Ratio. An efficiency ratio that divides the cumulative unit-elapsed intervals by the total time that a unit is on duty.

3.3.48 Interval.

3.3.48.1 ***Fractile Response Interval.*** A method of describing response intervals that uses frequency distribution as its basis for reporting.

3.3.48.2 ***Turnout Interval.*** The time from when units acknowledge notification of the emergency to the beginning point of response time.

3.3.49* Interview Ends. The time that the public safety answering point (PSAP) telecommunicator completes the interview with the caller.

3.3.50 Lead Agency. An organization assigned to organize the interagency oversight of the day-to-day conduct of policy related to a particular operation.

3.3.51 Life Support.

3.3.51.1* ***Advanced Cardiac Life Support (ACLS).*** A nationally recognized curriculum to teach advanced methods of treatment for cardiac, stroke, and other emergencies.

3.3.51.2 ***Advanced Life Support (ALS).*** Emergency medical treatment beyond basic life support level as defined by the medical authority having jurisdiction. [**1500,** 2018]

3.3.51.3 ***Basic Life Support (BLS).*** Emergency medical treatment at a level as defined by the medical authority having jurisdiction. [**1500,** 2018]

3.3.52 Management.

3.3.52.1 ***Critical Incident Stress Management (CISM).*** A program designed to reduce acute and chronic effects of stress related to job functions.

3.3.52.2 ***Total Quality Management (TQM).*** A management system fostering continuously improving performance at every level of function and focusing on customer satisfaction.

3.3.53 Medical Direction. The ordering of treatment, either through real-time communication or predetermined written protocols, by the appropriate medical command authority to approved clinical practitioners.

3.3.53.1 ***Off-Line (Indirect) Medical Direction.*** The medical direction that consists of predetermined standing orders, training, protocol development, and supervision that are authorized by the medical director.

3.3.53.2 ***On-Line (Direct) Medical Direction.*** The medical direction provided to out-of-hospital providers by the medical director or designee, generally in an emergency situation, either on-scene or by real-time communication.

3.3.54 Medical Director. A physician trained in emergency medicine, designated as a medical director for the local emergency medical services (EMS) agency.

3.3.55 Medical Oversight. The supervision, review, and administration of the medical aspects of an emergency medical services (EMS) system or agency and its providers.

3.3.56 Mobile Integrated Healthcare (MIH). The provision of health care using patient-centered, mobile resources in the out-of-hospital environment, including, but not limited to, services such as providing telephone advice to 911 callers instead of resource dispatch; providing community paramedicine care, chronic disease management, preventive care, or post-discharge follow-up visits; or transport or referral to a broad spectrum of appropriate care not limited to hospital emergency departments.

3.3.57 Multiple Casualty. Injury or death of more than one individual in an incident.

3.3.58 Mutual Aid. Reciprocal assistance by emergency services under a prearranged plan. [**402,** 2019]

3.3.59 National Association of EMS Physicians (NAEMSP). A national organization of emergency medical physicians and other professionals.

3.3.60 National EMS Information Systems (NEMSIS). The national repository that will be used to potentially store emergency medical services (EMS) data from every state in the nation.

3.3.61 National Highway Traffic Safety Administration (NHTSA). The agency under the United States Department of Transportation that is responsible for preventing motor vehicle injuries and deaths and provides national guidance on emergency medical services and systems.

3.3.62 National Institutes of Health (NIH). An agency of the Public Health Service of the Department of Health and Human Services, responsible for promoting the nation's health and providing medical research.

3.3.63 Non-Traditional Providers. Providers that may or may not be licensed/certified but who provide services necessary, such as social and health education, to meet patients' needs.

3.3.64 Outcome. The result, effects, or consequences of an emergency system encounter on the health status of the patient.

3.3.65 Patient Contact. The time that responding personnel first arrived at the patient's side.

3.3.66 Phone "Off-Hook" (answered in first PSAP). The time that the telephone is answered in the first public safety answering point (PSAP) center.

3.3.67 Protocol. Defines the prehospital care management of specific patient problems.

3.3.68 Public Safety Answering Point (PSAP). A facility in which 911 or other emergency calls are answered, either directly or through rerouting.

3.3.69 Quality Management (QM). The activities undertaken to establish confidence that the products or services available maintain the standard of excellence set for those products or services.

3.3.70 Response. The deployment of an emergency service resource to an incident. [**901,** 2016]

3.3.71 Response Resources Are Identified. The time that the public safety answering point (PSAP) telecommunicator, through computer-aided dispatch or other means, identifies the appropriate resources to send to the scene of the emergency.

3.3.72 Secondary Dispatch Phone "Off-Hook" Answered (if appropriate). The time that the second public safety answering point (PSAP) or second dispatcher answers the phone, begins the interview, collects caller data, and begins pre-arrival instructions.

3.3.73 Secondary Dispatch Phone Rings (if appropriate). The time the telephone begins to ring in the second public safety answering point (or the call screener).

3.3.74 Staffing. The number and level of training of personnel deployed on an emergency call.

3.3.75 Standard Operating Procedure. A written organizational directive that establishes or prescribes specific operational or administrative methods to be followed routinely for the performance of designated operations or actions. [**1521,** 2015]

3.3.76 Standing Orders. A direction or instruction for delivering patient care without on-line medical oversight backed by authority of the system medical director.

3.3.77 System.

3.3.77.1 ***EMS System.*** A comprehensive, coordinated arrangement of resources and functions that are organized to respond in a timely, staged manner to medical emergencies regardless of their cause.

3.3.77.2 ***Geographic Information System (GIS).*** A system of computer software, hardware, data, and personnel to describe information tied to a spatial location.

3.3.78 Telecommunicator. The individual tasked by a public safety answering point (PSAP) agency or communications center as the first of the first responders whose primary responsibility is to receive, process, transmit, and/or dispatch emergency and nonemergency calls for law enforcement, fire, emergency medical, and other public safety or public health services via telephone, radio, and other communication devices.

3.3.79 Time of Discovery of Event. The time that a third party or the patient becomes aware of the need for assistance.

3.3.80 Time of Result of First Intervention. The time that the responder first identifies results of the first intervention (e.g., when extrication was completed, when return of spontaneous circulation occurred).

3.3.81 Transfer of Care. The time that responsibility for treatment is transferred from a prehospital provider to another —

when the hospital personnel physically take over care of a patient.

3.3.82 Turnout Activation. Personnel preparation, boarding the vehicle, starting the vehicle, placing the vehicle in gear, and moving the vehicle toward the emergency scene.

3.3.83 Unit. A staffed and equipped emergency response vehicle.

3.3.84 Unit Acknowledgment. The time that the response unit(s) acknowledges that they have received the notification.

3.3.85 Unit Arrived on Scene. The time that the vehicle comes to a complete stop at the scene.

3.3.86 Unit en Route. The time that the vehicle first begins moving toward the scene.

3.3.87 Unit Left Scene. The time that the vehicle first begins moving from the scene.

Chapter 4 System Governance

4.1* General. This chapter outlines the core elements of an effective process for identifying, developing, and implementing community health care system governance. Governance ensures that community health care system components and oversight are comprehensive, clearly articulated and defined. Appropriate mechanisms should be instituted to ensure participation of system stakeholders in developing policies and regulations related to community health care programs.

4.2 Governance. In a similar fashion to other public safety and public health services, components of a community health care program may be regulated. Entities seeking to create community health care programs should assess existing governance.

4.2.1 Legislative Process.

4.2.1.1 In the absence of statutory oversight, the agency proposing community health care programs intending on engaging emergency medical services (EMS) or nontraditional providers, or both, should work with advocacy groups, labor unions, insurance companies, health care stakeholders, and other stakeholder groups to start the legislative process.

4.2.1.2* Health care stakeholders pursuing legislation to create community health care programs should consider mechanisms for receiving compensation from payers.

4.2.2 The authority having jurisdiction (AHJ) should determine the qualifications of the providers supporting the program.

4.2.2.1 Programs supported by EMS or other health care providers may require licensing/certification.

4.2.2.2 Programs supported by nontraditional providers may not require licensing/certification but may necessitate limited qualifications determined by the AHJ.

4.2.3 The AHJ should create a system that allows for the ability to create programs that meet local need(s).

4.2.4 The community health care program administration should demonstrate the need for community health care services for the populations served, including, but not limited to, community need(s), the level of service to be provided, a plan for the operations of the program, and the mechanism to be used for evaluating quality based on the community needs assessment as addressed in Chapter 5.

4.2.5 The community health care program should identify the minimum roles, responsibilities, and education necessary to support a community health care program.

4.3 Local Governance. Program administration should be responsible for community health care program oversight and should be empowered to implement plans.

4.3.1* Planning. Program administration should design the program based on a systematic planning process.

4.3.1.1 Service Levels. Program administration should identify service types, levels, performance guidelines, and measures.

4.3.1.1.1 Program administration should consider factors consistent with local resources and needs, such as the following:

(1) Health care system capacity
(2) Reducing health care costs
(3) Community expectations
(4) Measurable patient outcomes
(5) Resource availability
(6) Financial capability

4.3.1.1.2 Program administration should use its data to identify specific needs that could be addressed with a community health care program.

4.3.1.1.3 Representatives of community health care user groups and EMS system stakeholders should be involved in designing expectations and developing policy.

4.3.1.1.4* Program administration should identify appropriate participants for program design and policy.

4.3.1.1.5 Program administration should have the authority to convene subject matter expertise to assist in designing and implementing policies, procedures, and operations.

4.3.1.2 Management Structure.

4.3.1.2.1 Program administration should have a defined management structure and clear lines of accountability. The existing management structure should be reevaluated periodically to ensure if appropriate supervisory resources are available.

4.3.1.2.2 Each position within the program should be defined according to its role and responsibilities.

4.3.2 Evaluation.

4.3.2.1 Program administration should ensure there is a quality management program as outlined in Chapter 8.

4.3.2.2 Program administration should develop processes, policies, and education that will enhance the components.

4.4 Patient Health Information Protection.

4.4.1 Program administration should ensure that appropriate policies and procedures are in place to protect patient and quality management records.

4.4.2 Program administration should have policies and procedures detailing how referrals will be received, processed, and distributed.

4.5 Provider Health and Wellness. Program administration should have policies and services in place to address provider health and wellness, including behavioral health.

4.6 Personnel Training Requirements.

4.6.1 Program administration should identify personnel to become community health care providers based on system needs, experience, interests, and their capabilities.

4.6.2 Program administration should prohibit the use of personnel who have not received the minimum training required by the organization.

Chapter 5 System and Community Needs Assessment

5.1* General. This chapter outlines a systematic approach for evaluating and analyzing a jurisdiction's existing emergency medical services (EMS) system as a means of adding a community health care program (CHP).

5.2 Community Analysis.

5.2.1 System Planning. The first step to establishing a CHP is an analysis of the existing system and its ability to meet local community needs. A collaborative approach should be established for assessing local needs and meeting those needs with specific service elements.

5.2.2 Evaluation of Existing System. Community needs and system components should be evaluated with specific attention paid to response data, patient care records, and other information, including, but not limited to, the following:

(1) Local demographics and their implications on service requirements for a range of constituency groups
(2) Age-related injuries and illnesses (e.g., pediatric, adolescent, or geriatric)
(3) Socioeconomic and environmental structures and associated injuries and illnesses, both acute and chronic (e.g., poverty, violent crime rates, insufficient prenatal care, or neglect)
(4) Gender-related injuries and illnesses, both acute and chronic (e.g., disease rates and treatment plans)
(5) Language, cultural diversity, and ethno-specific disease processes

5.3 Historical Patient Data, Call History, and Demand. Authorities having jurisdiction (AHJs) should identify potential prevention and management targets by assessing historical patient data and call history and analyzing call types or patients that place a high demand on the system. This information will be helpful in ascertaining the initial target population to be managed through a CHP.

5.3.1 Distribution of Demand.

5.3.1.1 A geographic information system (GIS) may assist in identifying the distribution of calls in a community.

5.3.1.2 The distribution of demand should also be assessed by periods of the day, as well as months and seasons of the year, to determine the existence of any temporal trends.

5.3.2 Local Industry. AHJs should consider assessing areas of commerce and industry that may have a high occurrence of injuries and illnesses that have placed a demand on system resources (e.g., entertainment venues, exposure to hazardous materials, injuries from machinery).

5.3.3* Social Service and Health Care Facilities. AHJs should consider areas that offer social services, such as shelters (e.g., faith-based, municipal, or otherwise) that may place a demand on system resources.

5.3.4 Unique Local Geographical or Environmental Conditions and Demand. AHJs should consider possible limitations in accessibility (e.g., special hazards, geographic topography, land mass separations, waterway and marine boundaries) to the target population that could affect service delivery.

5.3.5 Public Health. AHJs should coordinate with their public health department as a resource for assessing the population for areas of concern that create a demand on the system and identifying possible gaps in access to health care and prevention.

5.3.6 Other Local Data Resources (as appropriate). AHJs should identify and assess other local data sources that can provide insight regarding demand on the system, gaps in access to health care and prevention services, or other injury and illness risks in the jurisdiction.

5.4 Comparable Organizations/Professionals.

5.4.1 Political/Regulatory Organizations. AHJs should assess the political and regulatory environments to identify organizations performing identical or similar work.

5.4.2 Other Health Care Professions or Professionals. It is possible that other organizations or health care providers are already performing complementary community health care work in the jurisdiction, and are doing so through legislative authority, past practice, or both. AHJs should assess the existing health care environment for opportunities to build relationships with these groups to fill gaps in the health care delivery system.

5.4.3 Legal Analysis. AHJs should perform a legal analysis to ascertain if the proposed program is supported by state, provincial, or federal laws, rules, and regulations.

5.4.4 Stakeholder Engagement.

5.4.4.1* Once a plan for a CHP program has been created, AHJs should invite internal and external stakeholders to introduce the proposed plan, and be open to receiving their input and fostering partnerships for service delivery.

5.4.4.2 AHJs should consider collaborating with resources that are external to the EMS system.

5.4.5 Lack of Regulatory Authority. AHJs that are operating in areas that lack regulatory authority that allow EMS providers to perform community health care work should partner with EMS, public health, and public safety advocacy organizations and labor associations to lobby for change.

5.5 Determination of Prevention and Management Targets. AHJs should identify vulnerable population groups or specific demand types that would benefit from prevention and management programs (e.g., age-related primary illness and injury prevention programs, chronic illness management programs).

5.5.1 Collaborative Process. AHJs should develop a collaborative process with public health and the local health care community to identify what vulnerable population groups or specific demand types would benefit from prevention and management programs.

5.5.2* Selection of Initial Target(s). Once populations of interest have been identified, the target groups should be ranked from highest to lowest based on the demand these targets place on the existing system. It should be noted that the initial target population may have mixed needs.

5.5.3 Prevention Efforts. Illness and injury prevention and education efforts should be linked to community needs and resource availability.

5.6 Establish Program Goals and Objectives. Program goals and objectives should determine service levels as a function of community needs identified through AHJ evaluation/analysis and community needs assessments.

5.7 Analysis of Internal System Resources.

5.7.1 Internal Resources. AHJs should analyze the existing internal resources available to serve the needs of the initial patient target(s), including financial resources, equipment and facilities, and personnel in the system.

5.7.2 External Resources. The program analysis should consider the resources and accessibility of all health care resources available to the AHJs.

5.7.3 Required System Resources. Based on the internal and external resource assessment, AHJs should determine the need for additional resources, including capital purchases, personnel, and partnerships, which may be necessary for operational success but are not currently part of the system or the system's inventory.

5.7.4 Value. The program should be able to articulate the value this CHP will generate for various stakeholders.

5.8 Program Design. The program design should be flexible and based on continual evaluation according to defined indicators and performance measures.

5.8.1 Service Levels. Service levels should be linked to community needs and expectations and be within the scope of practice.

5.8.2 Providers. The AHJ should identify the roles, responsibilities, staffing, and training requirements of providers for the CHP to achieve the desired outcomes.

5.8.3* Provider Resources. EMS systems are composed of the personnel, vehicles, equipment, and facilities used to deliver emergency and nonemergency care to individuals outside a hospital. Key services of an EMS system include public access through a coordinated communications system, public safety, public health, EMS response, and patient transportation.

5.8.4* Service Types and Descriptions. Each type of service within the program should be clearly defined and fully described in the program design.

5.8.4.1 Role Definition. Based on the needs and wants of the community, several different types and levels of providers may be required. Roles and responsibilities for each type and level of provider should be identified to ensure that the desired level of care is delivered continually and effectively.

5.8.4.2 Community Health Care Provider. The role of each community health care provider should be clearly defined by the AHJ.

5.8.4.3 Partner Agencies. The program should identify the roles and responsibilities of each partner agency needed for the program to function.

5.8.4.4 Structure. Providers may be supplied by a single organization or through the combined efforts of multiple organizations.

5.8.4.5* Telecommunicators. Telecommunicators may be the initial point of contact for patients who may benefit from the program. In addition to providing verification of the incident address, notification of the closest provider, and prearrival instructions, telecommunicators may be required to perform additional tasks.

5.9 Analysis of Program Barriers. EMS systems seeking to engage in a community health program should assess the external health care environment and identify regulatory barriers (e.g., laws, rules, and regulations prohibiting EMS from performing work outside of the emergency setting) and operational barriers (e.g., proposed system design that encroaches on other health care professionals' work).

5.10 Provider Support. The program should address and consider methods to support an individual provider's needs for addressing caregiver emotional concerns, such as compassion fatigue.

5.10.1 Provider Training. Providers should receive training on the local resources available to help meet the needs of patients enrolled in the CHP.

5.10.2 Provider Safety. The following should be in place to reduce the amount and severity of injuries incurred by providers:

(1) Personal safety training
(2) Equipment safety programs
(3) Accountability/tracking/communications systems
(4) Information applicable to location and physical or environmental conditions, including neighborhood safety programs

5.10.3 Wellness. Health and wellness programs should be in place to monitor and support the overall wellness of providers.

5.11 Finances.

5.11.1 Comprehensive Financial Analysis. The financial status of the community and its capacity to support the CHP should be evaluated.

5.11.2 Budget. Each entity should develop a financial plan that reflects sound analysis and planning of short- and long-term operating need.

5.12 Oversight.

5.12.1 Medical Oversight. Based on the community needs analysis, the program may require associate medical directors whose specialties are closely related to the needs of the target population. The CHP program may also use other medical advisors to help develop protocols for specific disease processes. Providers within the CHP may be authorized to consult with an enrolled patient's centered medical home for specific, individual medical care coordination and intervention.

5.12.2 Program Administrative Oversight. (Reserved)

5.12.3 Participant Roles. The roles and responsibilities for each provider agency should be organized in a manner that ensures that every component contributes to the effectiveness of the program.

5.13* Continual Risk Assessment and Planning. The program should have a comprehensive process in place that provides continual analysis and mitigation of risk.

5.14 Program Design Analysis.

5.14.1 Data Collection and Evaluation. The program should be examined in detail over time using indicators set forth in existing industry standards, guidelines, or specific performance measures.

5.14.2 Data Sharing. Program data should be shared, as legally appropriate, among agencies and medical facilities in the community and within an individual patient's medical care network to improve program quality and patient outcomes.

5.15 Performance Measures as Program Design Features.

5.15.1 Performance Monitoring.

5.15.1.1 Program performance measures are designed to function as a framework for a new program design or as a tool through which a community may monitor the program. Through the continuous measurement of a program's structure, processes, and outcomes using designated indicators and performance measures, program planners may identify areas of the program design that require modification or enhancement.

5.15.1.2 Data collection and evaluation is required to assess the program modification and ensure that the program continues to be effective. If subsequent data shows that the original goals and objectives of the program are not being met, modification of the program design should be made.

5.15.2 Essential Program Analysis Components.

5.15.2.1 The nature of time presents a classic problem in semantics because the same term can have different meanings to different people. Additionally, traditional and unique EMS system designs have created a language of time incomparability. Consider creating a time template to differentiate clearly between discrete points of time versus intervals of time. The time template should represent the program's typical core desired outcomes in time and common operational situations. It is not expected that every time stamp be reported. Depending on the program's complexity and level of technology, it is understood that a function interval may be long or instantaneous. However, when reporting program performance, these consensus terms should be used.

5.15.2.2 AHJs should use consistent data definitions and evaluations for process and outcome measures to determine the impact of the program on the patients, populations, and stakeholders.

5.16 Program Expansion or Retraction. After a time, it may be necessary or advantageous to expand or contract the program to appropriately meet the community's changing needs or modify partnerships. As such, EMS systems that support a CHP should have a plan for "scope and breadth review." The plan for scope and breadth review should follow the same path described for initial program creation.

5.16.1* Program Assessment Cycle. The program should employ an assessment cycle.

5.16.2 Current Conditions. Program data should be used to identify current conditions and trends.

5.16.3 Changing Needs. The data should consider the nature of a changing geography and infrastructure over time, population distribution and demographics, and the alteration of the transportation network.

5.16.4 Regional Service Delivery. The AHJ may consider partnerships with other AHJ to form regional service models that meet the desired goals of health care system stakeholders.

5.16.5 Changing Demographics. The regular review should, at a minimum, reevaluate the changing demographic trends in the system.

5.16.6 Short-Term Changes. Individual events, such as concerts and sporting events or seasonal population shifts, may cause short-term demographic changes that require additional analysis and may require short-term program changes.

5.16.7 Long-Term Changes. Long-term changes, such as an aging population, should be considered when reevaluating the plan.

5.16.8 Changing Public Health Conditions. The program should conduct external environmental scans to anticipate or identify new public health threats to prepare the program for response.

5.16.9 Unique Local Needs. Unique features and hazards should be monitored when the program plan is updated.

5.16.10 Data Element/Collection/Analysis/Reporting. Regular analysis of program component data should be conducted to determine dynamic needs.

5.16.11 Routine Reevaluation of Data. Program performance measure data should be reviewed at least annually to evaluate the specific components within the program. Each component may need to be evaluated more often based on the original intent of the program and established goals.

5.16.12 Feedback Loop. A feedback mechanism should be in place to ensure that proposed and implemented changes in the program result in the desired improvements and meet the goals and objectives identified by program planners.

5.17 Preparedness. A CHP should also be used as a means to enhance disaster preparedness and resilience in addition to its use as a tool to prevent illness and improve overall community health. By identifying and tracking vulnerable populations within a community, a program could better manage a catastrophic incident by prioritizing evacuation practices and staging resources.

5.17.1 Disasters. The potential for disasters as a function of unique jurisdictional features, characteristics, and risks should be considered.

5.17.2 Resource Allotment. Resources to manage target populations should be allocated appropriately within the program to manage victims who have been evacuated or sheltered in place.

5.17.3 Master Planning/Forecasting. A master plan should be available that ensures the necessary resources are available to the program and will meet the needs of future requirements.

5.17.4 Disaster/Catastrophe Planning. The program should ensure that a plan is available to manage overwhelming or catastrophic events, including coordinating activities between and among participating entities.

5.18 Prevention.

5.18.1 Public Education and Injury/Illness Prevention. The program should include public education components designed to reduce injury and illness in the AHJ's service area.

5.18.2 Public Health. The AHJ should coordinate with public health programs to determine how its program can assist.

5.18.3 Other Programs. The prevention and public education plan should include an analysis of the environment and an analysis of the need for special prevention programs.

5.19 Quality. AHJs should have a system that evaluates how the program manages the needs of the target population, the provision of care, and its compliance with patient management plans.

5.19.1 Patient/Provider Satisfaction Within the Program.

5.19.1.1 The AHJs should evaluate patient and provider satisfaction.

5.19.1.2 Patient and provider satisfaction assessments should be conducted by a third party to avoid the appearance of bias.

Chapter 6 Financial Modeling

6.1* General. Value-based models, shared-risk contracting, and accountable care organizations (ACOs) are integral to financial modeling within the health care industry. An understanding of these concepts and applications will be needed when developing a financial model for a community health care program (CHP).

6.2 Budgeting. The CHP should have a preplanned budget that takes all costs and factors in its management into consideration, including other services provided by the managing AHJ and an understanding of how the program affects overall organizational operating budgets.

6.2.1* Service Delivery Costs. Determining service delivery cost is necessary to examine possible alternative payment models.

6.2.2* Enterprise Funds. Creating an enterprise fund is a formal way to fully account for the costs and revenue of a CHP.

6.2.3* Tax Increment Financing (TIF) Funding. TIF may be an available tool that allows the CHP to promote economic development by earmarking property tax revenue from increases in assessed values within a designated TIF district (Dye and Merriman 2006).

6.2.4 Intergovernmental Transfer (IGT) Funding.

6.2.4.1* Variations of IGTs, which are transfers of funds from another government entity (e.g., county, city, or another state agency) to the state Medicaid agency, have been used to help cover the costs associated with traditional or enhanced emergency medical services (EMS) services, such as CHPs. Understanding how these programs are structured, the applicable federal requirements, and the considerations and risks is important.

6.2.4.2 One variation of IGTs, the ground emergency medical transportation (GEMT) services supplemental reimbursement program, is a certified public expenditure (CPE)–based program that provides additional funding to eligible governmental entities that provide GEMT services to Medicaid beneficiaries. *(See 6.5.1 for more information on the GEMT program.)*

6.3 Economic Models.

6.3.1 The Value Concept. Value in health care is dependent on the audience. Patients, providers, hospitals, elected officials, regulators, and medical directors may have different perspectives on what value means.

6.3.1.1* Currently, hospitals, payers, and patients may perceive value in avoiding preventable readmissions. Hospitals are financially penalized for high readmission rates and payers pay the cost of preventable readmissions, and patients may experience less than desirable outcomes. Readmission penalties are also being assessed to physicians, as well as home health and skilled nursing providers. Any of these providers may feel that readmission prevention programs are valuable. Providers doing CHP could expect that payers will use value-based measures for payment purposes.

6.3.1.2 CHP providers may be able to demonstrate value through improved patient satisfaction scores by conducting follow-up visits on patients discharged from hospitals and SNFs, which may be perceived as valuable to hospitals, physicians, home health, and skilled nursing providers because they are held financially accountable for these scores.

6.3.1.3 EMS agencies that can help reduce the cost of care for members of a specific payer group would be perceived as valuable. Collaborative development with these specific stakeholders is the best way for CHPs to demonstrate their value to each group.

6.3.2 Pricing Models. There are several common pricing models currently in place that can be used by CHPs.

6.3.2.1 Patient Contact Fees. Patient contact fees are fixed rates per patient contact for services.

6.3.2.2 Enrollment Fees. Enrollment fees are fixed amounts for each patient enrolled in the program. There are no patient contact fees once the enrollment fee is paid, and the patient contacts required to achieve the desired outcome are a risk borne by the agency.

6.3.2.3 Population-Based Payments. Population-based payments are fixed payments per member per month (PMPM) for all members of a defined population. For an insured group, this would be the amount paid to the agency for each member in the payer group.

6.3.2.4 Incentive-Based Payments. Under this model, the agency would be paid an incentive based on achieving a desired outcome. For example, if the goal of the agency's program is to reduce preventable emergency department visits by 10 percent in patients enrolled in the program, the agency would be eligible for an incentive payment once that goal is achieved.

6.3.2.5* Expenditure Avoidance. This could be a combination of the shared-risk contracting and the incentive-based payment. Similar to participation in an ACO, the expenditure avoidance model pays the agency a percentage of the expendi-

ture reduction, either per enrolled patient or across the population of enrolled patients.

6.3.2.6 Subscriptions Programs. (Reserved)

6.4* Payment Regulation.

6.4.1 Medicaid Legislation and Regulation. Currently, some states use Medicaid dollars to cover the cost of community health care services. Medicaid funding is generally a more flexible program because state legislation controls Medicaid payment policy, whereas, Medicare payment policy is determined through federal legislation.

6.4.2* Medicare Legislation and Regulation. As of the writing of this guide, Medicare has only funded CHPs in small trial batches.

6.5 Cost Reporting.

6.5.1* State Models for Reimbursement for Uncompensated Care. Some states may have supplemental reimbursement programs that provide additional funding to eligible governmental entities that provide ground ambulance services to Medicaid beneficiaries. Service providers eligible to participate in this program will receive supplemental reimbursement payments by completing a Centers for Medicare and Medicaid (CMS)–approved cost report form annually. The supplemental reimbursement payment is based on claiming federal financial participation on CPEs that have already been incurred by the public provider. The supplemental reimbursement amount is determined by the methodology approved by the CMS.

6.5.2* Developing Cost Reports. To participate in GEMT reimbursement programs authorized by a state Medicaid office, each publicly owned or operated GEMT provider must submit a CMS-approved cost report to their state Medicaid office by the deadlines required by the state.

6.5.2.1* Each GEMT provider should maintain fiscal and statistical records for the service period covered by the cost report.

6.5.2.2 Records should be accurate and sufficiently detailed to substantiate the cost report data.

6.5.2.3 Each GEMT provider should maintain fiscal and statistical records for the service period covered by the cost report.

6.5.2.4 Records should be accurate and sufficiently detailed to substantiate the cost report data.

6.5.2.5 Programs should retain necessary records for a minimum of three (3) years after the end of the quarter in which the provider submitted its cost reports to DHCS.

6.5.2.6 If an audit is in progress, all records relevant to the audit should be retained until the completion of the audit or the final resolution of all audit exceptions, deferrals, or disallowances.

Chapter 7 Medical Oversight

7.1 General. Because the provision of community health care is a practice of medicine, the necessity and value of effective and engaged medical oversight cannot be overstated. Treatment modalities may include such things as medication administration, therefore the designated medical director must be an appropriately board-certified, licensed physician who understands how out-of-hospital medical care is delivered in the community and, ideally, has appropriate clinical oversight of the emergency medical services (EMS) system that is being utilized for the provision of nonemergency health care (e.g., online and off-line medical direction, evidence-based protocol development, clinical quality management, understanding of emergency operations, understanding of longitudinal health care objectives, field experience). There are documents available to assist those physicians who are involved in medical direction and oversight of out-of-hospital health care delivery systems.

7.2 Medical Authority. The program should have a single medical authority (i.e., the medical director) or medical authority structure — with the medical director serving as its leader — in place that is responsible for patient care oversight. Individual agencies in the system may have medical directors that provide agency-specific or program-specific oversight.

7.3 System Support of Medical Authority.

7.3.1 The EMS system seeking to establish a community health care program (CHP) should ensure that the medical authority tasked with overseeing the program has an opportunity to provide input and direction in the initial planning, design, and implementation of the program.

7.3.2* The system should ensure that the medical director has the resources necessary to optimize obligation fulfillment.

7.4 Medical Authority Role.

7.4.1 The medical director for a CHP typically also provides medical oversight for the EMS system. Because every program is unique, however, medical authorities may be different physicians with subject matter expertise specific to the goals and objectives of their programs. In such instances, the physician medical director of the participating agency should ensure that medical care, whether emergency or nonemergency, provided by his or her crew members falls under the oversight of the single medical authority.

7.4.2 The role of the medical director for the program should be clearly defined and should include the following responsibilities:

(1) Recommending credentialing, recredentialing, and decredentialing of nonphysician community health care personnel to the appropriate credentialing agency
(2) Establishing an advisory committee consisting of stakeholders to review community needs and the effectiveness, safety, and value of the CHP
(3) Providing direction and authorization for the development and revision of the program's protocols; policies; standing orders; and procedures for all patient care activities, from enrollment into the program to scheduling of visits, dispatch of emergency/nonemergency resources, if necessary, and final disposition
(4) Establishing criteria for providers to be trained and certified for community health care work; licensed, if applicable; and credentialed to function within the program
(5) Establishing criteria for when a patient may unexpectedly meet emergency medical criteria requiring transport to a hospital or other medical facility
(6) Ensuring that personnel who provide direct medical oversight to prehospital personnel (e.g., physicians, midlevel providers, nurses) are familiar with the out-of-hospital environment and capabilities of responders

(7) Establishing the procedures or protocols under which online medical control is required
(8) Providing direction and authorization for the education and testing of practitioners to ensure competency at providing extended and longitudinal nonemergency health care
(9) Providing direction for, and participating in, an effective quality management (QM) program
(10) Ensuring patient-centered care
(11) Establishing methods to coordinate applicable and appropriate stakeholders (e.g., medical home/primary care physicians, specialty care physicians, referring physicians, hospitals, pharmacists, nursing staff, home health, respiratory therapy, case managers, public health, legislators, government officials, payers)
(12) Establishing criteria for enrollment of patients into the program, using input from the stakeholder advisory committee as a guide
(13) Establishing criteria for equipment used in patient care (e.g., functional, effective, evidence based)
(14) Planning for certification of personnel and accreditation of the CHP

7.5 Medical Director Responsibilities.

7.5.1 The primary responsibilities of the program's medical director should be ensuring quality patient care and overseeing all patient care activities.

7.5.2 If the community health care program's medical director is different from the agency's medical director, the physicians should work collaboratively to do the following:

(1) Serve as patient advocates
(2) Set and ensure compliance with patient care standards, including communication standards and medical protocols
(3) Develop and implement the process for the provision of online medical oversight, if needed
(4) Establish the appropriateness of initial qualifications of prehospital personnel involved in nontraditional, nonemergency patient care
(5) Ensure maintenance of qualifications, education, training, and competency of prehospital personnel involved in patient care
(6) Provide direction for QM
(7) Promote research and contributions to medical literature
(8) Maintain liaison with stakeholders
(9) Interact with local, regional, state, and federal authorities (as applicable) to ensure resources are optimized and all compliance and regulatory requirements are fulfilled
(10) Plan and participate in regularly scheduled continuing education activities for the participating providers to help them maintain the highest levels of awareness, training, and education in medicine
(11) Promote patient education to engage them as stakeholders in their own care
(12) Maintain knowledge levels appropriate for a physician medical director through appropriate continuing medical education (CME) activities
(13) Actively participate in direct, on-scene medical care to bolster understanding of the program and the challenges inherent in the delivery of out-of-hospital care

7.6 Online and Off-Line (Direct and Indirect) Medical Direction. Medical directors can provide online and off-line medical oversight.

7.6.1 During online medical direction, the medical director, or designee, provides voice, video, or other real-time communication to the practitioner.

7.6.2 Off-line medical oversight includes prospective and retrospective medical evaluation.

7.6.2.1 Prospective methods can include participating in the training, testing, and certification of providers; protocol development; operational policy and procedures development; and legislative activities.

7.6.2.2 Retrospective activities should include participation in QM.

7.6.2.3 Various aspects of prospective and retrospective medical oversight can be handled by individuals or committees functioning under the medical director with representation from appropriate stakeholders.

7.6.3 Policies should be established for the certification, training, and monitoring of other system physicians, if applicable.

7.7* Medical Director Qualifications. To optimize medical oversight of CHPs using prehospital fire and EMS personnel, physicians having medical oversight authority and a license to practice within the system's boundaries should ideally possess American Board of Medical Specialties (ABMS) board certification in EMS medicine. If not, they should have specialized knowledge of EMS, including the following:

(1) Familiarity with EMS care
(2) Experience or training in longitudinal health care/chronic disease management
(3) Experience or training in medical direction/oversight of prehospital personnel
(4) An active practice of medicine in an emergency or hospital or office setting
(5) Experience or training in the instruction of prehospital personnel
(6) Experience or training in QM processes
(7) Knowledge of laws and regulations pertaining to prehospital care providers
(8) Knowledge of applicable laws pertaining to the provision of community health care practices and principals
(9) Knowledge of local medical resources and stakeholders key to the effective delivery of CHPs
(10) ABMS certification in emergency medicine, EMS medicine, internal medicine, family practice, or any other applicable specialty required to meet the goals and objectives of the specified CHP

Chapter 8 Quality Management

8.1 Quality Management Program. A defined quality management program should be developed. The program should identify areas for improvement, evaluate system performance, prioritize development, establish system controls, monitor performance indicators, reevaluate system impact, and drive changes based on outcomes.

8.2 Performance Objectives. A defined quality management program should establish performance objectives based on accepted standards, guidelines, and outcomes.

8.2.1 Patient or client care objectives should be developed system-wide based on community needs and expectations, desired patient outcomes, and local resources.

8.2.1.1 The medical or social disposition of the patient should be incorporated as part of the patient care objectives.

8.2.1.2 Compliance with established protocols should be monitored.

8.2.1.3 Client or patient satisfaction and feedback should be incorporated into the system.

8.2.2 System evaluation should be integrated into the quality management program.

8.2.2.1 Performance measures should be established and sufficient applicable data should be collected.

8.2.2.2 The system evaluation should measure both resources and availability for the following:

(1) Staffing availability
(2) Ancillary resources
(3) Number of clients or patients

8.2.2.3 Staffing and deployment objectives should be monitored and, based on the evaluation, appropriate for the system based on outcomes and performance.

8.2.2.4 Standard operating procedures and guidelines should be established, periodically reviewed, and updated based on outcomes and performance.

8.2.2.5 Training should be evaluated for continuity and content based on industry guidelines, desired system performance, and outcomes.

8.2.2.6 Employee satisfaction should be evaluated as part of the quality management process.

8.2.2.7 Staff attrition should be evaluated for causes and effects.

8.2.2.8 Equipment maintenance should be based on manufacturers' recommendations.

8.2.2.9 System design and changes should be evaluated using a cost/benefit analysis.

8.2.2.10 The health information technology (HIT) system should be evaluated based on program needs and industry performance guidelines.

8.2.2.11 Stakeholder relationships and agreements should be reviewed periodically for effectiveness and system outcomes and modified accordingly.

8.3 Public Health Outcome Parameters.

8.3.1 Desired outcome measures should be specified based on professional standards.

8.3.2* Development of these measures should be incorporated with, and complimentary to, local/region population health improvement efforts.

8.4 Physician Participation. A quality management program should include physician participation and should be reviewed and approved by the program medical director as detailed in Chapter 7.

8.5 Patient Confidentiality. All data management programs should maintain patient confidentiality, at a minimum in accordance with federal, state, and local regulations as detailed in Chapter 10.

8.6 Injury/Illness Reduction and Prevention. The quality management program should incorporate objectives directed at reducing injuries and illnesses in the community based on the system data.

8.7 Complaints. A comprehensive, consistent process should be in place to address complaints and should include a mechanism to assure problem/complaint resolution and feedback processes.

8.8* Participation in Studies and Research. The system participants may develop relationships with academic institutions and/or researchers to take an active role in studies and research using system data including, but not limited to, the following:

(1) Identify research issues
(2) Utilize appropriate research methodology
(3) Identify research funding sources
(4) Publish or present study results

8.9 System Review. All quality management systems should be utilized on a regular basis for continuous improvement.

8.10 Documentation. The program should be able to provide documentation of its quality management program, including quality management methods, training for providers, prevention strategies, and system performance measures.

Chapter 9 Stakeholder Relations

9.1 General.

9.1.1 The organizations operating a community health care program (CHP) should create a collaborative communications network between its management personnel and impacted organizations.

9.1.2 For purposes of this document, stakeholder groups are divided into four categories: internal, external, regulatory, and payers. Program management should identify and work collaboratively with all stakeholders in these groups to ensure that the needs of the community are met.

9.2 Community Health Care Provider Goals. The authority having jurisdiction (AHJ) leading the CHP should assess the needs of the community, identify gaps in care and services, and develop a draft for the types of services needed. Ideally, this should be done in a collaborative community forum, including, but not limited to, primary care physicians and local/regional hospitals.

9.3* Internal Stakeholder Relations. Before development of a CHP begins, internal stakeholders should be committed to the program.

9.4* External Stakeholder Relations. External stakeholders include entities outside of the program's participants that are impacted by, or could impact, the success or failure of the program.

9.5* Regulatory Stakeholders Relations. Engaging early with regulatory agencies is essential in the program's success. The

AHJ needs to determine under which state or local authority the program is to operate, if appropriate.

9.6 Payer Stakeholder Relations. Potential payers should be included in the planning and development stages of the program as early as possible to build valuable partnerships that yield sustainable revenue. AHJs should explore the payment and reimbursement options offered through public and/or private grants.

9.6.1* Grants. Programs should explore the funding options offered through public or private grants.

9.6.2 Hospitals.

9.6.2.1* Hospitals are under increasing financial pressure to reduce utilization for specific patient populations. Programs should consider partnering with hospitals to help reduce such utilization and reduce hospitals' overall expenses.

9.6.2.2 The program should identify the possible motivation and level of interest for hospitals to participate in funding programs for specific patient populations.

9.6.3* Other Health Care Provider Agencies. Additional entities that provide health care to the community should be contacted and included to identify gaps and needs.

9.6.4* Third-Party Payers. Third-party payers, such as commercial insurers, Medicare, and Medicaid, have significant motivation to improve patient outcomes and reduce costs. The AHJ should be proactive in attempts to collaboratively work with these payers.

9.6.5 Taxpayer-Funded. In some cases, taxpayer funds are used for CHPs or emergency medical services (EMS) systems. If applicable, programs should explore these opportunities for funding or consider combining programs to leverage funds.

9.7 Achieving Stakeholder Relations Success. To be successful in obtaining and maintaining relationships with stakeholders, programs should focus on objectives, including, but not limited to, the following:

(1) Engage all stakeholders early in the process.
(2) Engage internal stakeholders first.
(3) Keep program sustainability in mind from the start.
(4) Consider regulatory agencies as partners, not competitors.
(5) Always keep the patients/clients at the center of the program.

Chapter 10 Health Information Technology (HIT) and Communications Technology

10.1* Interoperability in Health Care Information and Management Systems.

10.1.1 General. Programs should incorporate integration with multiple patient care systems, or interoperability. Interoperability in the health care industry is the ability of HIT systems of various health care providers, facilities, organizations, and ancillary services (e.g., laboratories, pharmacies) to seamlessly collaborate and share information to advance the effective delivery of health care for individuals and communities.

10.1.2 Interoperability Types. There are three levels of HIT interoperability — foundational, structural, and semantic.

10.1.2.1 Foundational Interoperability. Foundational interoperability allows data exchange from one HIT system to be received by another and does not require the ability for the receiving HIT system to interpret the data.

10.1.2.2 Structural Interoperability.

10.1.2.2.1 Structural interoperability is an intermediate level that defines the syntax (i.e., structure or format) of data exchange where there is uniform movement of health care data from one HIT system to another such that the clinical or operational purpose and meaning of the data is preserved and unaltered.

10.1.2.2.2 Structural interoperability ensures that data exchanges between HIT systems can be interpreted at the data field level.

10.1.2.3 Semantic Interoperability.

10.1.2.3.1 Semantic interoperability is a high level that allows two or more systems or elements to exchange and use information by taking advantage of both the structuring of the data exchange and the codification of the data, including vocabulary, so that the receiving HIT system can interpret the data.

10.1.2.3.2 Semantic interoperability supports the electronic exchange of patient summary information among caregivers and other authorized parties via potentially disparate electronic health record (EHR) systems and other systems and improves quality, safety, efficiency, and efficacy of health care delivery.

10.2 Patient Care Record Accessibility.

10.2.1 Programs should be able to access and utilize electronic HIT systems, such as the following:

(1) Electronic medical records (EMRs)
(2) EHRs
(3) Electronic Patient Care Records (ePCRs)

10.2.1.1* EHRs, which can help providers make decisions about a patient's care when accessed, automate and streamline provider workflow and can contain, but are not limited to, the following information:

(1) Medical history
(2) Diagnoses
(3) Medications
(4) Treatment plans
(5) Immunization dates
(6) Allergies
(7) Imaging
(8) Laboratory
(9) Electrocardiograms
(10) Physician documentation

10.2.1.2 EMRs, ePCRs, and EHRs should be integrated and interchangeable. This will allow providers to access the most up-to-date information and reduce duplication of efforts and treatments.

10.3 Data Security.

10.3.1 Data security should be addressed, with privacy protections in place and current cyber security methods and systems provided.

10.3.2 Topics to be addressed should include, but not be limited to, the following:

(1) Privacy risks and controls
(2) Data security risks, including a risk assessment
(3) Security controls
(4) HIPAA protections
(5) General requirements for data protection in telehealth
(6) Primary authority for telehealth privacy and security oversight

10.4 Communications.

10.4.1 The organization should conduct an assessment to determine their communications needs.

10.4.2 Dispatch system protocols for mobile health technologies should address, but not be limited to, the following:

(1) Dispatching systems
(2) Online medical direction systems
(3) Nonemergency systems
(4) Nurse lines
(5) Insurance referrals
(6) Primary care physicians
(7) Scheduling systems

10.4.3 Communications methods should ensure patients are able to be connected with physicians or specialty services and able to be prioritized according to their needs utilizing remote methods. There should be a triage component to assist the AHJ in determining the appropriate response.

10.5 Delivering HIT. Organizations should investigate emerging and existing technologies and determine the best options for transmitting HIT in various forms (e.g., voice, data, video). Options for transmitting HIT data include, but are not limited to, the following:

(1) Land mobile radio
(2) Commercial wireless technology (Wi-Fi)
(3) Satellite technology

10.5.1 Wireless Technology (Wi-Fi). Wireless technology, also known as Wi-Fi is the ability to connect from one wireless device to another through the use of satellite connection and is helpful in making information mobile and widely accessible.

10.5.1.1 One concern with Wi-Fi is the hacking of security systems through wireless networks or systems and obtaining patient health or personal identification information, which can be used for identify theft.

10.5.1.2 Intelligence organizations and other government agencies are reluctant to use Wi-Fi due to the lack of firewall protection required to safeguard employees' health and identifiable information.

10.5.2* First Responder Network Authority (FirstNet).

10.5.3 Biometric Systems. If possible, patient biometric data should be remotely captured for a physician to reference for follow-up care.

10.5.4* Biometric Monitoring.

10.5.4.1 Biometric monitoring of vital signs and other physiologic parameters provides emergency medical services (EMS) personnel with data that guides their responses and follow-up care without patient intervention or connection with providers.

10.5.4.2 Local (i.e., in-home) data storage should be encouraged for redundancy, local data analytics, and permitting periodic transmissions rather than requiring a consistent and continuous transmission of data.

10.6* Telemedicine. Telemedicine utilizes technology to link a treating or consulting physician with a patient in real time, which is especially helpful and potentially even life-saving if the patient is in a remote location. Telemedicine can include, but is not limited to, remote biometric monitoring of the following:

(1) Blood pressure
(2) Heart rate and rhythm
(3) Respiratory rate and rhythm
(4) Temperature
(5) Fetal heart rate

10.7* Telehealth. The term *telehealth* is often used interchangeably with telemedicine. While telemedicine refers to the practice of medicine over a distance using communications technologies, telehealth refers to health-related activities such as, but not limited to, the following:

(1) Continuing education for health care providers
(2) Administration of health care service
(3) Medical and bio-scientific research
(4) Public health activities

Chapter 11 Human Resources

11.1 Introduction. Human resources are important to both individual agencies and the broader emergency medical services (EMS) system. While community health care program planners and regulators should ensure that minimum standards exist in the organization for monitoring, managing, and ensuring appropriate staff performance, they also should ensure that individual agencies have appropriate personnel management structures in place.

11.2 Recruitment. The program should recruit according to its needs, as determined by program analysis, design, and planning.

11.2.1 Selection. The program should have a candidate selection procedure that includes, but is not limited to, the following steps:

(1) Appropriate/required background checks
(2) Aptitude assessment for the type of practitioner(s) needed for the program
(3) Verification of necessary qualifications and competencies

11.2.2 Wages and Benefits. A plan for compensation should be clearly delineated in organizational documents.

11.3 Training, Certification, and Education. The program should ensure that personnel maintain required certification or licensure.

11.3.1 Training Program.

11.3.1.1 A comprehensive training program that provides uniform curricula based on established requirements should be available.

11.3.1.2 The training program and instructors should be regularly monitored, evaluated, and revised.

11.3.2* Certification or Licensure.

11.3.2.1 Certification or licensure requirements should be based on the duties and responsibilities of the providers.

11.3.2.2 The program should track individual certification/licensure and the need for renewal.

11.4 Retention.

11.4.1 The program should take steps to encourage continued retention of personnel.

11.4.2 Retention programs should be appropriate to the local area and may include, but are not limited to, the following:

(1) Length-of-service award programs (LOSAPs)
(2) Incentive plans
(3) Recognition plans
(4) Educational or training opportunities
(5) Job advancement opportunity programs
(6) Provider support
(7) Performance bonus plans
(8) Retirement plans

11.5 Personnel.

11.5.1 Processes. The program should have one or more processes in place to ensure effective working relationships between working groups and agencies involved in the program.

11.5.2 Employees/Members.

11.5.2.1 Job task analysis should be clearly defined.

11.5.2.2 The program should ensure that a regularly scheduled, objective personnel evaluation process is in place.

11.5.2.3 Individualized levels of training should be appropriate to meet the program's needs.

11.5.2.4 The program should evaluate, revise, and maintain the following:

(1) Appropriate staffing and scheduling for adequate delivery of services, based on the needs assessment
(2) Quality management programs in place

11.5.2.5 The program should ensure that employees/members have agency- and provider-level identification.

11.6 Rules and Regulations. Rules and regulations should be structured to provide for uniform management of the program's personnel.

11.6.1 The program should have established rules and regulations for acceptable behavior and actions.

11.6.2 The program should have established policies and guidelines.

11.6.3 The program should have a process in place to manage discipline, appeals, grievances, and other personnel concerns.

11.6.4 The program should have a process in place to ensure compliance with all applicable regulations.

11.7 Health and Safety. The program should implement a written comprehensive health and safety plan.

11.7.1 Appropriate personal protective equipment (PPE) should be available to all personnel and should be used according to program policy, applicable standards, and manufacturer recommendations.

11.7.2 Health and wellness programs should be in place to prevent personnel illness and injury.

11.7.3 A peer support team and program should be made available to personnel.

11.7.4 An employee assistance program (EAP) should be in place.

Chapter 12 Equipment and Facilities

12.1 General.

12.1.1 The community health care program (CHP) should have a method to determine the equipment and related specifications needed.

12.1.2 The selection and specification of vehicles and equipment should be made based on an assessment of the program's needs and capabilities.

12.2* Vehicles. The program should identify requirements for the vehicle(s) used within the CHP.

12.3 Vehicle Maintenance.

12.3.1 The program should have guidelines in place for preventative maintenance according to manufacturer recommendations.

12.3.2 The program should include a replacement schedule and maintain reserve vehicles, if available, for use during repair periods.

12.4 Vehicle Licenses. The program's vehicles should be licensed in accordance with all laws and regulations.

12.5 Personnel Driver's Licenses. Periodic record checks should be conducted to ensure that licenses are not expired, suspended, or revoked.

12.6 Operator Training. Personnel should receive the appropriate training to effectively operate vehicles.

12.7 Driver Safety. The program should develop measures to promote safe vehicle operations.

12.8 Medical Equipment. Medical equipment should be maintained according to the manufacturer's specifications.

12.8.1 The program should identify and utilize medical equipment based on the program's needs.

12.8.2 The program should create a method to identify specifications for selecting, maintaining, and replacing medical equipment used in the program, including but not limited to, the following:

(1) Biomedical equipment
(2) Durable equipment
(3) Disposable equipment
(4)* Diagnostic equipment
(5) Technology-based equipment
(6) Communications equipment

12.9 Medications.

12.9.1 The program should carry medications based on the scope of practice and medical director's input.

12.9.2 The program should have procedures in place to store medications based on regulations, and manufacturer's guidelines.

12.10 Inspecting Medical Equipment and Medications. The program should develop plans for inspecting medical equipment and inventory carried aboard vehicles.

12.11 Replacement Plan. Equipment replacement should be based on the manufacturer's recommendations.

12.12 Facilities. Program facilities should be located in a way consistent with the program's demands and the community's needs.

12.12.1 Facility safety requirements should meet NFPA 1500, at a minimum.

12.12.2 Programs should provide facilities for disinfecting, cleaning, and storage of equipment, uniforms, and vehicles.

12.12.3 Facilities should comply with all legally applicable health, safety, building, and fire code requirements.

12.12.4 Facilities should comply with NFPA *101*.

12.12.5 Program facilities should have smoke detectors installed outside every sleeping area in the immediate vicinity of the bedrooms and on all levels, including basements.

12.12.6 In buildings other than those protected throughout by an approved, supervised automatic sprinkler system installed in accordance with 30.3.5 of NFPA *101* approved smoke detectors should be installed in every sleeping room.

12.12.7 When smoke detectors activate, the general evacuation alarm signal should operate throughout the entire building.

12.12.8 All facilities should have carbon monoxide detectors installed in locations in sleeping and living areas, such that any source of carbon monoxide would be detected before endangering the personnel.

12.12.9 Areas not subject to occupancy by persons who are hearing impaired should not be required to comply with the provisions for visible signals.

12.12.10 New buildings should be protected throughout by approved automatic sprinkler systems.

12.12.11 The program should prevent exposure to personnel and contamination of living and sleeping areas to exhaust emissions.

12.12.12 Any components of protective equipment that are contaminated should not be allowed in sleeping and living areas.

12.12.13 All facilities should be designated smoke free.

Chapter 13 Delivery Model(s)

13.1 Community Health Care Program (CHP) Integration into Local Emergency Medical Services (EMS) System. The CHP should be integrated with the local EMS system operations, including the coordination of multiple system elements. Each component should be considered not only in the context of its operational application but also in its relationship to other factors within the system.

13.2 System Preparation. Community health care operations should be implemented based on EMS system planning, analysis, and financial capability.

13.3 Communications Coordination. Communications should be coordinated with EMS system design and also with available local partner agencies.

13.4 Service Coordination. Plans for first or initial response, ambulance response transport, provision of community health care services, and alternative methods of transport should be in place as determined by system analysis and planning, including the availability of additional resources as required by system demands.

13.5 Patient Management. The function of patient management should address routine and episodic responses and accountability for, all responding personnel and resources.

13.6 Treatment Guidelines. Patient care plans should be developed by patient-centered medical homes. Agencies can help to implement the care plans in compliance with scopes of practice and local medical control authority.

13.6.1 Providers should only treat within their state or region-approved scope of practice.

13.6.2 Guidelines should be developed to meet the patients' and communities' needs as defined in the needs assessment.

13.7 Functional Capabilities of Health Care Facilities. The CHP agency, in concert with the local medical community, should create standards for functional capabilities of health care facilities and determine the types of patients who should be delivered to those facilities.

13.7.1* The functional information should be disseminated to CHP personnel as well as emergency care personnel. The plan should be monitored to ensure that patients are transported or referred to an appropriate facility.

13.7.2 The CHP should establish patient-centric policies that provide for transport or referral to appropriate facilities.

13.8 Quality Management/Documentation. Community health activities, including patient care, referral, transport, training, and research documentation, should be included in the quality management program as outlined in Chapter 8.

13.9 Logistics. System-wide supply and equipment programs should be implemented to standardize equipment selection and to facilitate interagency supply and logistics.

13.10 Staff Management. Staff should meet the requirements of Chapter 11.

13.11 Public Information, Education, and Relations. A program should be in place to allow for an information interface with the community, applicable to state and federal regulations. The authoring having jurisdiction (AHJ) should ensure that programs providing education to potential CHP system users is available.

13.12 Regulatory Compliance. The system should ensure that system-wide operations comply with local, state, and federal regulations and laws, including, but not limited to, the following:

(1) State-mandated reporting
(2) Federal health and safety regulations
(3) Certification requirements

(4) Financial reporting
(5) Communicable disease reporting

13.13 Training.

13.13.1 CHPs should establish training requirements and should develop and utilize a training program based on an assessment of the communities' and patients' needs.

13.13.2 The training plan should be a coordinated effort, and appropriate agencies should have regular interaction.

13.14 Research and Development. The system should participate in research-based evaluation of all components and should use objective criteria for decision making.

Chapter 14 Program Implementation

14.1 Purpose. Once the planning phase is completed and the stakeholders have reached consensus on the scope of the program, a written plan detailing the components of the program and a schedule for its implementation should be developed.

14.2 Management Oversight. Program management and oversight should be clearly articulated and maintained throughout the life of the program.

14.3 Establishing an Implementation Plan. The plan should include an overview of the program, the population to be served, goals and objectives, and strategies to achieve the system's needs.

14.4 Communicating the Plan.

14.4.1 An internal/external communications plan should be established and documented prior to commencing program operations.

14.4.2 Program communications should include the following:

(1) An understanding of the political/medical community's informational needs
(2) Shared access to program organizations' information
(3) Internal communications among program organizations
(4) Communications to external stakeholder groups

14.5 Marketing Strategies. Marketing strategies should be developed in concert with partner agencies.

14.6 Financial Considerations. Program finance and budget should be outlined and planned for in accordance with the guidance provided in Chapter 6.

14.7 Data Collection. Data collection procedures should be documented in accordance with the guidance provided in Chapter 10.

14.7.1 Measureable markers of performance should be documented and should include appropriate process and outcome indicators as delineated in Chapter 8.

14.7.2 Program improvements should be made based on evaluation criteria.

14.8 Plan Review. The implementation plan should be reviewed after implementation to ensure that appropriate implementation markers have been met.

Annex A Explanatory Material

Annex A is not a part of the recommendations of this NFPA document but is included for informational purposes only. This annex contains explanatory material, numbered to correspond with the applicable text paragraphs.

A.3.2.1 Approved. The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.

A.3.2.2 Authority Having Jurisdiction (AHJ). The phrase "authority having jurisdiction," or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

A.3.3.5 American College of Emergency Physicians (ACEP). Headquartered in Dallas, Texas, ACEP has 53 chapters representing each state, as well as Puerto Rico and the District of Columbia. A government services chapter represents emergency physicians employed by military branches and other government agencies.

A.3.3.49 Interview Ends. This time stamp can occur before or after resources are identified, dispatched, or arrive on the scene.

A.3.3.51.1 Advanced Cardiac Life Support (ACLS). The American Heart Association ACLS and the American Red Cross ALS provider programs are examples of nationally recognized programs.

A.4.1 See the U.S. Department of Health and Human Services (DHHS) and Health Resources and Services Administration (HRSA) document, "Community Paramedicine: Evaluation Tool," for more information on policies and regulations.

A.4.2.1.2 The AHJ should coordinate with the state Medicaid office to determine the reimbursement of services if such reimbursement has been approved.

In the United States, the Centers for Medicare and Medicaid Services (CMS) provides guidance and oversight to state Medicaid programs. State Medicaid programs are required to submit a Medicaid State Plan describing their plan and assuring

compliance with federal rules and regulations (see 42 USC 1396a).

States seeking to permit payment for community health care as part of their Medicaid State Plan should submit a state plan amendment (SPA) for review and approval, which can be viewed online at www.medicaid.gov/state-resource-center/medicaid-state-plan-amendments/medicaid-state-plan-amendments.html.

A.4.3.1 While planning processes may vary significantly between AHJs, steps should be taken to ensure that the process occurs in a manner consistent with identified needs.

A.4.3.1.1.4 This can include, but is not limited to, the following:

(1) Consumers or users of community health care or EMS services
(2) Health care finance experts
(3) Health care providers
(4) Hospitals
(5) Public health agencies
(6) Nursing homes
(7) Special populations
(8) Educators
(9) Governmental officials
(10) Payers

A.5.1 Virtually all communities have some form of EMS system. For any one community, the components of the system and the level of service should be tailored to the needs and wants of that community. While an EMS system is unique to the jurisdiction, the industry recognizes a standard approach to assessing local needs and meeting those needs with specific service elements. A steadily increasing demand on EMS resources has made it necessary for EMS systems to find a means of better managing it.

NHTSA's publication, *Emergency Medical Services: Agenda for the Future*, shares the following vision: "Emergency Medical Services (EMS) of the future will be community-based health management that is fully integrated with the overall health care system. It will have the ability to identify and modify illness and injury risks, provide acute illness and injury care and follow-up, and contribute to treatment of chronic conditions and community health monitoring. This new entity will be developed from redistribution of existing health care resources and will be integrated with other health care providers and public health and public safety agencies. It will improve community health and result in more appropriate use of acute health care resources. EMS will remain the public's emergency medical safety net."

The following was specified in T. R. Delbridge's publication: "Before creating an EMS system or implementing any EMS system design changes, a community should conduct a comprehensive community analysis that considers available resources, customers, geography, demographics, political conditions, and other unique and special needs of the system. This analysis should focus on these areas, identifying their potential impact on the effectiveness of EMS system components including human resources, medical direction, legislation and regulation, education systems, public education, training, communications, transportation, prevention, public access, communications systems, clinical care, information systems (data collection), and evaluation."

A.5.3.3 Long-term, rehabilitative, and other special health care facilities — such as dialysis centers — usually add demand on EMS services and should be considered.

A.5.4.4.1 Stakeholder engagement will help to reduce, and potentially overcome, barriers to program implementation.

A.5.5.2 For example, the target population may be people who frequently request assistance through the 911 system. In an instance such as this, the specific individual needs of the patient base may be varied and will require additional analysis and planning.

A.5.8.3 Resources of other nonconventional agencies such as nonemergency ambulance and municipal mass transportation services should be considered.

A.5.8.4 For example, the response service may be different from the transportation service.

A.5.8.4.5 AHJs should consider opportunities to enhance services for call taking, triage programs, and nurse triage programs. Patients may contact the providers directly via phone or other electronic communications. Telecommunicators may schedule appointments with patients.

A.5.13 The risk assessment should examine liabilities both internal and external to the program. Examples of the liabilities include items such as the following:

(1) **Internal risks.** Internal liabilities place individual entities or the program at risk, including, but not limited to, the following examples:
    (a) Workplace accidents and violence
    (b) Financial improprieties
    (c) Discrimination
    (d) Hostile workplace environment
    (e) Harassment
(2) **External community risks.** External system liabilities place community members at risk, including, but not limited to, the following examples:
    (a) Provider negligence
    (b) Inappropriate vehicle operation
    (c) Lack of compliance with training standards
    (d) Improper maintenance
    (e) Inadequate quality management (QM) processes
(3) **Risk control.** Measures should be taken to guard against and protect personnel from potential exposures to risks.
(4) **Loss control.** Measures to limit losses should be taken through processes such as early return-to-work programs.

A.5.16.1 The program should employ an assessment cycle that includes the following components:

(1) Data collection
(2) Evaluation
(3) Analysis
(4) Proposing
(5) Planning
(6) Implementation

A.6.1 Many concepts, such as value-based models, shared-risk contracting, and ACOs, are resulting in shifts in economic models within the health care industry. Health care parties are transitioning away from fee-for-service (FFS) models, which financially reward providers based on the volume of services provided, to value-based models, which financially reward providers based on the value of the services they provide.

A.6.2.1 To obtain the service delivery cost, the first step is to determine the staffing requirements. The goal is to obtain the number of employees needed to cover one "seat" — or one position on the vehicle — for every hour of operation required by the CHP.

Example:

One seat on a vehicle is required by the program to be covered for every hour of every day of the year. One year is equal to 8,760 hours.

A 56-hour/week employee would work 2,920 [365/(7 × 56)] hours per year, without leave (e.g., sick time, vacation). However, most employees would take leave of some kind. Because the average leave used by an employee is 448 hours per year, the number of annual hours that each employee is actually in their seat is reduced from 2,920 hours to 2,472 hours.

To calculate the number of employees needed to cover one seat for every hour of every day of 1 year involves dividing 8,760 by the 2,472 hours actually worked — equaling a total of 3.54 people per seat.

See Table A.6.2.1 for a sample cost budget for a CHP.

A.6.2.2 An enterprise fund is defined in the Municipal Securities Rulemaking Board's (MSRB) "Glossary of Municipal Securities Terms" as "a fund established by a governmental entity to account for operations of an enterprise activity. Enterprise funds generally are segregated as to purpose and use from other funds and accounts of the governmental entity with the intent that revenues generated by the enterprise activity and deposited to the enterprise fund will be devoted principally to funding all operations of the enterprise activity, including payment of debt service on securities issued to finance such activity."

The AHJ establishing a CHP should consider using an enterprise fund, because it gives program managers the ability to fully track program costs and revenues, and also provides a mechanism for reporting costs and revenues to partner organizations and the public.

A.6.2.3 To the extent that a CHP program could help resolve blighted conditions, proponents point to evidence that assessed

Table A.6.2.1 Sample CHP Budget

PERSONNEL

Title	Rate ($/hr)	RHE	Wages ($)	Benefits ($)	Subtotal ($)	FTEs	Total ($)	Utilization (%)	Allocation ($)
911 Triage Nurse (new)	37	2080	76,960	15,392	92,352	1	92,352	100	92,352
MHP (new)	26	2288	54,392	10,878	65,270	1	65,270	100	65,270
CCP (new)	30	2288	68,640	13,728	82,368	1	82,368	100	82,368
Nurse Case Manager	40	2080	83,200	16,640	99,840	1	99,840	20	19,968
Administrative Assistant	20	2080	41,600	8,320	49,920	0.5	24,960	50	12,480
Supervisor	28	2288	58,552	11,710	70,262	0.5	35,131	20	7,026
Manager	37	2080	76,960	15,392	92,352	0.5	46,176	20	9,235
Billing and Reconciliation Specialist	17	2080	35,360	7,072	42,432	1	42,432	100	42,432
Personnel Subtotal	—	—	—	—	—	*6.5*	*488,530*	—	*331,132*

OTHER EXPENSES

Expense Item	Additional Information	Allocation ($)
EMS staff education and training	Wages for field and communications personnel classes	33,600
Member education	—	25,000
Medical equipment and supplies	For two vehicles amortized over 4 years [e.g., i-STAT (blood analyzer), MRX (cardiac monitor/ defibrillator)]	26,750
Alternative transportation	10 trips per day, $60 per round trip, 365 days per year	219,000
Medical oversight/quality management (QM)	—	—
Vehicle(s) and vehicle equipment	For two vehicles amortized over 5 years (e.g., radios)	13,600
IT and phone lines	Two PSAP lines, two Surface Pro computers, two iPhones, one additional PSIAM license	30,000
Other Expenses Subtotal	—	*422,950*
TOTAL PROGRAM COST	—	***754,082***

property value within TIF districts generally grows much faster than in the rest of the municipality and infer that TIF benefits the entire municipality (Dye and Merriman 2006).

A.6.2.4.1 The ability of a state to use IGTs to fund their Medicaid program is recognized in 42 USC 1396b and 42 CFR 433.51. Medicaid has been a joint financing partnership between the states and the federal government since 1965, which provides a guarantee that the federal government will match funds for state expenditures on health and long-term care services for the low-income population.

A.6.3.1.1 For example, for a hospital seeking to reduce preventable readmissions, a measure that compares the readmission rate for patients in the CHP's readmission prevention program would demonstrate value to the hospital.

Similarly, for payers that are concerned about high expenditures for recurrent, nonemergency use of the high-dollar emergency department, a CHP's that demonstrates a reduction in emergency department use by the patients enrolled in the program should certainly demonstrate value.

A.6.3.2.5 A variation of this model can be used internally by measuring the agency's cost reduction related to the traditional EMS service delivery. For example, if the agency measures the cost of an unreimbursed EMS call as $500, avoiding 30 of these calls could theoretically save the agency $15,000. Caution should be observed with this model, however, as loss of the typical revenue associated with these types of calls would need to be calculated as well and built into the model.

A.6.4 The key to Medicaid reimbursement is demonstrating to elected and appointed officials that payment for community health care services saves the state money. Most states have significant market penetration of Managed Medicaid, meaning the program will likely work closely with the Managed Medicaid payers to lobby for Medicaid coverage of CHP services.

A.6.4.2 As with Medicaid, market penetration of Managed Medicare programs is significant, and programs may find payers who are more than willing to cover the cost of services to Managed Medicare patients as a way to reduce expenditures.

A.6.5.1 A presentation by AP Triton, LLC, with further information on GEMT programs can be downloaded from NFPA's website at https://www.nfpa.org/NFPA-Membership/Membership-resources/Member-Sections/Metropolitan-Fire-Chiefs/Archive-presentations

A.6.5.2 It's important to note that the GEMT reimbursement is only for services provided to Medicaid recipients. It does not include costs or uncompensated care for services to non-Medicaid patients.

A.6.5.2.1 An example of a cost report can be downloaded from the California Department of Health Care Services (DHCS) website at www.dhcs.ca.gov/provgovpart/Documents/GEMT/GEMT_Cost_Rpt_08-17.xls.

A.7.3.2 Examples of such resources include, but are not limited to, physical infrastructure, authorization and support of the agency's command staff, clerical and staff support, communications, malpractice insurance, and liability coverage.

A.7.7 For outside of the United States, physicians should be board certified in medical practice by that country's equivalent of the ABMS.

A.8.3.2 U.S. Public Health Service outcome models, which include the measurement of the reduction of discomfort, disability, death, destitution, dissatisfaction, and disease, should be referenced.

A.8.8 This may be part of the institutional review board process (IRB), which can be found at www.hhs.gov/ohrp/register-irbs-and-obtain-fwas/irb-registration/index.html.

A.9.3 Presenting information and potential benefits specific to each stakeholder group will help them understand how the program could not only improve patient care, but help them achieve their own goals.

See Table A.9.3 for information on likely major internal stakeholders, including the significant role they would play in the development and implementation of the program and the expected outcomes from their participation.

A.9.4 Examples of external stakeholders include, but are not limited to, hospitals, social service organizations, home health agencies, nursing associations, emergency physician groups, skilled nursing centers, hospice organizations, senior care organizations, public health, separate EMS agencies, and primary care physicians. These stakeholders share goals and seek opportunities to work collaboratively with organizations in your community.

See Table A.9.4 for information on likely major external stakeholders, including the significant role they would play in the development and implementation of the program and the expected outcomes from their participation.

A.9.5 Steps may need to be taken to define this new class of providers and address regulatory barriers to community health care initiatives. It is imperative to engage regulatory agencies and providers at the beginning and throughout the process as a way to clarify roles, address concerns, and develop strategies that make optimal use of all provider types. Scope of practice regulations impact the ability of EMS personnel to deliver nontraditional health care services. A lack of formal recognition of this class of EMS personnel has created concerns about their scope of practice and the oversight system for ensuring patient safety.

See Table A.9.5 for information on likely major regulatory stakeholders, including the significant role they could play in the development and implementation of the program and the expected outcomes from their participation.

A.9.6.1 Most communities have various grant organizations that may be patient or health care focused. Most hospitals also have foundations that may be interested in funding projects that benefit patients, the hospital, and the community.

A.9.6.2.1 The specific patient populations typically include unfunded patients, patients who are part of a shared risk arrangement with payers, patients at risk for preventable readmissions, and patients who have no payer source.

A.9.6.3 Like hospitals, other health care providers may also have a financial interest in reducing preventable ambulance trips, emergency department visits, and hospitalizations. These providers could include home health agencies, hospice agencies, physician group practices, long-term care facilities, and post–acute care management agencies. Identifying these agencies in the community and learning what level of interest they may have in funding the program could be valuable.

Table A.9.3 Internal Stakeholders

Stakeholder	Role	Participation Contributions
Command staff/Management	Provide direction to the agency Approve resources	Benefits to patients served Benefits of increased value in health care system Benefits of enhanced public image Potential revenue stream from contracted services
Agency communications center	Coordinate dispatches and calls Address flagging of enrolled patients Allocate additional resources	Benefits to patients served Benefits of increased value in health care system Benefits of enhanced public image Potential revenue stream from contracted services
Medical director	Develop/approve medical protocols Interface with health care community Ensure quality management	Benefits to patients served Benefits of increased value in health care system Benefits of enhanced public image
Labor union/Workforce	Politically support implementation Engage workforce	Benefits to patients served Potential for enhanced staffing and union positions Potential reduction in workload for line staff through reduced high utilizer encounters Enhanced community perception of the labor union for supporting project
City/County or district board/Local leadership	Politically support implementation Engage workforce Approve program mission and vision Approve budget	Benefits to patients served Potential reduction in workload for response system through reduced high utilizer encounters Enhanced community perception of the labor union for supporting project

A.9.6.4 While it is logical for third-party payers to be funders for these programs, most programs to date have been challenged in connecting with these stakeholders. Insurers typically have a labyrinth of processes that can make it difficult to connect to the right decision makers. Some may have statutory or regulatory restrictions that hamper or even prohibit direct funding of CHPs. One of the best ways to identify potential partners is to analyze which payers represent the largest portion of the program's payments. While Medicare and Medicaid may factor heavily into those payments, the program will also find insurers such as Blue Cross/Blue Shield, Aetna, UnitedHealthcare, or Cigna among the other significant payment sources. The program can use the amount of money these insurers are paying to transport patients to high-cost care settings as a compelling reason to engage in discussions.

A.10.1 Further information on interoperability and integration with multiple patient care systems can be found on the Healthcare Information and Management Systems Society (HIMSS) website at www.himss.org/library/interoperability-standards/what-is-interoperability. Additionally, interoperability roadmaps are available in downloadable PDF format at www.healthit.gov/policy-researchers-implementers/interoperability.

A.10.2.1.1 One of the key features of an EHR is that health information can be created and managed by authorized providers in a digital format capable of being shared with other providers across more than one health care organization. EHRs are built to share information with other providers and organizations — including laboratories, specialists, medical imaging facilities, pharmacies, emergency facilities, and school and workplace clinics — and contain information from all clinicians involved in a patient's care.

A.10.5.2 The Middle Class Tax Relief and Job Creation Act of 2012 created FirstNet as an independent authority within the U.S. Department of Commerce's National Telecommunications and Information Administration (NTIA) to provide emergency responders with the first nationwide, high-speed, broadband network dedicated to public safety. FirstNet's mission grew out of the public safety community's commitment to and advocacy for a dedicated network to address communications challenges they faced on 9/11, during Hurricane Katrina, and during similar incidents and events in their communities.

A.10.5.4 Some biometric sensors provide data analytic capabilities — for instance, they notice changes in a person's gait and thereby provide fall prediction/detection. Local data analytics

Table A.9.4 External Stakeholders

Agency	Role	Participation Outcomes
Social service agencies	Connect enrolled patients to necessary services Deliver services to the enrolled patients	Relationship built as a referral source for nonmedical needs Development of access to services through county or private social service agencies (e.g., Council on Aging, United Way) or similar organizations
Hospitals	Provide primary health care to community Provide care for common patients Provide clinical education Potentially fund program	Collaboration in developing patient care strategies and protocols Leveraged financial incentive for hospitals to reduce visits and readmissions Quality care improvement measures
Out-of-hospital health care	Provide home health nursing, skilled nursing facilities, home hospice agencies, and assisted living facilities Consist of accountable care organizations	Defined boundaries of service Development of referral patterns that are mutually supportive
Other medical professionals	Provide emergency care, primary care, outpatient clinic care, independent practice care, behavioral health resources, pharmaceutical support, and addiction recovery resources	Identification of opportunities and threats Development of referral patterns Access to training resources and opportunities to improve care Medication reconciliation Opportunities for medical direction
Public health departments	Collect data Perform community needs assessment Provide public access health clinics and immunization centers	Identification of training needs for staff Identification of community health care needs Preparedness planning
Insurance industry	Primary payer of health care services Provide commercial and government-run programs	Development of relationships with organizations that are potential funding sources Positive financial impact Development of sources of outcome data

and decision support can provide directed care and can minimize the impact and workload of health care providers.

A.10.6 For more information on telehealth, see "An Information Technology Framework for Strengthening Telehealthcare Service Delivery," in the *Journal of Telemedicine and e-Health*.

A.10.7 For more information on telemedicine, see the American Telemedicine Association's website at www.americantelemed.org. Also, see "Telemedicine liability: Texas and other states delve into the uncertainties of health care delivery via advanced communications technology," in *The Review of Litigation*.

A.11.3.2 Licensure represents legal authority granted to an individual by the state to perform certain otherwise restricted activities. The scope of practice represents the legal limits of the licensed individual's performance. States have a variety of mechanisms to define the margins of what an individual is legally permitted to perform.

This authority granted by the state is defined by the term *licensure* in this guide, but some states still use the term *certification* to describe legal authority to practice granted to EMS personnel. In these cases, the state should not confuse authority to practice with certification for the purposes of verifying competency.

A.12.2 Requirements may include allowing individual agencies to make purchasing decisions within the restrictions established by the EMS specifications or by state or national standards.

A.12.8.2(4) This may include laboratory testing equipment and supplies.

A.13.7.1 The system should define medical center capabilities for the following:

(1) Primary, secondary, and tertiary medical facilities
(2) Alternative health care facilities
(3) Hospice
(4) Specialized care facilities (e.g., trauma, burn, pediatric, cardiac, hyperbaric, psychiatric, obstetric, spinal cord, and sexual assault)
(5) Other facilities appropriate to the local system

Table A.9.5 Regulatory Stakeholders

Agency	Role	Participation Outcomes
State department of health	Provide regulatory framework	Development of a regulatory framework that provides oversight
	Provide educational and training requirements	Enforcement of state regulations and standards
State office of EMS	Provide agency direction	Development and implementation of strategies governing medical training and scope of practice
	Develop/approve medical protocols	Enforcement of approved medical policies and protocols
	Provide educational and training requirements	Training according to state standards
	Interface with the health care community	
	Provide quality management	
Local or regional EMS authority	Provide direction to the program	Development and implementation of strategies governing medical training and scope of practice
	Develop/approve medical protocols	Enforcement of approved medical policies and protocols
	Establish educational and training requirements	Training according to state standards
Local or regional public health agencies	Provide direction to the program direction	Development and implementation of strategies to integrate with public health
	Integrate with public health role and goals	Access to resources and integration
	Establish educational and training requirements	Training according to state standards

Annex B Informational References

B.1 Referenced Publications. The documents or portions thereof listed in this annex are referenced within the informational sections of this guide and are not advisory in nature unless also listed in Chapter 2 for other reasons.

B.1.1 NFPA Publications. (Reserved)

B.1.2 Other Publications.

B.1.2.1 NHTSA Publications. National Highway Traffic Safety Administration, 1200 New Jersey Avenue, SE, Washington, DC 20590.

Emergency Medical Services: Agenda for the Future, August 1996.

B.1.2.2 U.S. Government Publications. U.S. Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

"Community Paramedicine: Evaluation Tool," U.S. Department of Health and Human Services (DHHS) and Health Resources and Services Administration (HRSA), March 2012.

Medicaid State Plan Database. www.medicaid.gov/state-resource-center/medicaid-state-plan-amendments/medicaid-state-plan-amendments.html.

Middle Class Tax Relief and Job Creation Act of 2012.

Title 42, Code of Federal Regulations, Part 433.51, "Public Funds as the State Share of Financial Participation."

Title 42, United States Code, Part 1396a, "State Plans for Medical Assistance."

Title 42, United States Code, Part 1396b, "Payment to States."

B.1.2.3 Other Publications. Chen, L. C., et al. "An Information Technology Framework for Strengthening Telehealthcare Service Delivery," *Journal of Telemedicine and e-Health* 18, no. 8 (2012): 596–603.

Delbridge, T. R., et al. "EMS Agenda for the future: where we are…where we want to be," *Annals of Emergency Medicine* 31, no. 2 (1998): 251–263.

Dye, R., and D. Merriman. "Tax Increment Financing: A Tool for Local Economic Development," *Land Lines* (January 2006).

"GEMT" PowerPoint Presentation, 2015 Metro Chiefs Conference, AP Triton, LLC, 5500 Dry Creek Road, Napa, CA 94558.

Municipal Securities Rulemaking Board (MSRB) "Glossary of Municipal Securities Terms." http://www.msrb.org/glossary.aspx.

Poe, K. "Telemedicine liability: Texas and other states delve into the uncertainties of health care delivery via advanced communications technology." *Review of Litigation*. 20. 681–702. (2001).

B.2 Informational References. The following documents or portions thereof are listed here as informational resources only. They are not directly referenced in this guide.

B.2.1 ASTM Publications. ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM F1031, *Standard Practice for Training the Emergency Medical Technician (Basic)*, 2013.

ASTM F1086, *Standard Guide for Structures and Responsibilities of Emergency Medical Services Systems Organizations*, 1994, reapproved 2002.

ASTM F1149, *Standard Practice for Qualifications, Responsibilities, and Authority of Individuals and Institutions Providing Medical Direction of Emergency Medical Services*, 1993, reapproved 2013.

ASTM F1177, *Standard Terminology Relating to Emergency Medical Services*, 2002, reapproved 2009.

ASTM F1220, *Standard Guide for Emergency Medical Services System (EMSS) Telecommunications*, 1995, reapproved 2014.

ASTM F1221, *Standard Guide for Interagency Information Exchange*, 1989, reapproved 2014.

ASTM F1224, *Standard Guide for Providing System Evaluation for Emergency Medical Services*, 1989, reapproved 2004e1 (withdrawn in 2012).

ASTM F1229, *Standard Guide for the Qualification and Training of EMS Air-Medical Patient Care Providers*, 2001.

ASTM F1255, *Standard Practice for Performance of Prehospital Automated Defibrillation*, 1990, reapproved 2008 (withdrawn in 2016).

ASTM F1256, *Standard Guide for Selection and Practice of Emergency Medical Services Instructor for Emergency Medical Technician (EMT) Training Programs*, 2013.

ASTM F1257, *Standard Guide for Selection and Practice of Emergency Medical Services Instructor for Advanced Emergency Medical Technician*, 2013.

ASTM F1258, *Standard Practice for Emergency Medical Dispatch*, 1995, reapproved 2004.

ASTM F1268, *Standard Guide for Establishing and Operating a Public Information, Education, and Relations Program for Emergency Medical Service Systems*, 1990, reapproved 2012.

ASTM F1285, *Standard Guide for Training the Emergency Medical Technician to Perform Patient Examination Techniques*, 2013.

ASTM F1286, *Standard Guide for Development and Operation of Level 1 Pediatric Trauma Facilities*, 1990, reapproved 2009 (withdrawn 2015).

ASTM F1287, *Standard Guide for Scope of Performance of First Responders Who Provide Emergency Medical Care*, 1990, reapproved 2012.

ASTM F1288, *Standard Guide for Planning for and Response to a Multiple Casualty Incident*, 1990, reapproved 2003.

ASTM F1339, *Standard Guide for Organization and Operation of Emergency Medical Services Systems*, 1992, reapproved 2003.

ASTM F1453, *Standard Guide for Training and Evaluation of First Responders Who Provide Emergency Medical Care*, 1992, reapproved 2012.

ASTM F1493, *Standard Guide for Financing and Financial Accountability of Medical Transportation Systems*, 1993, reapproved 2008 (withdrawn in 2015).

ASTM F1517, *Standard Guide for Scope of Performance of Emergency Medical Services Ambulance Operations*, 1994, reapproved 2007.

ASTM F1552, *Standard Practice for Training Instructor Qualification and Certification Eligibility of Emergency Medical Dispatchers*, 1994, reapproved 2009.

ASTM F1555, *Standard Guide for Characteristics for Extremity Splints*, 1994, reapproved 2007.

ASTM F1556, *Standard Guide for Spinal Immobilization and Extrication (SPINE) Device Characteristics*, 1994, reapproved 2007.

ASTM F1557, *Standard Guide for Full Body Spinal Immobilization Devices (FBSID) Characteristics*, 1994, reapproved 2007 (withdrawn in 2016).

ASTM F1558, *Standard Guide for Characteristics for Adjunct Cervical Spine Immobilization Devices (ACSID)*, 1994, reapproved 2007.

ASTM F1559, *Standard Guide for Characteristics for Cervical Spine Immobilization Collar(s) (CSIC)*, 1994, reapproved 2007.

ASTM F1560, *Standard Practice for Emergency Medical Dispatch Management*, 2000, reapproved 2014.

ASTM F1616, *Standard Guide for Scope of Performance of First Responders Who Practice in the Wilderness or Delayed or Prolonged Transport Settings*, 1995, reapproved 2009.

ASTM F1629, *Standard Guide for Establishing Operating Emergency Medical Services and Management Information Systems, or Both*, 1995, reapproved 2007 (withdrawn in 2015).

ASTM F1651, *Standard Guide for Training the Emergency Medical Technician (Paramedic)*, 1995, reapproved 2009.

ASTM F1652, *Standard Guide for Providing Essential Data Needed in Advance for Prehospital Emergency Medical Services*, 1995, reapproved 2007 (withdrawn in 2016).

ASTM F1653, *Standard Guide for Scope of Performance of Triage in Prehospital Environment*, 1995, reapproved 2012.

ASTM F1654, *Standard Guide for Training and Evaluation of Individuals Who are Responsible for or Perform Triage in Prehospital Environment*, 1995, reapproved 2012.

ASTM F1655, *Standard Guide for Training First Responders Who Practice in Wilderness, Delayed, or Prolonged Transport Settings*, 1995, reapproved 2013.

ASTM F1705, *Standard Guide for Training Emergency Medical Services Ambulance Operations*, 1996, reapproved 2012.

ASTM F1949, *Standard Specification for Medical Oxygen Delivery Systems for EMS Ground Vehicles*, 1999, reapproved 2013.

ASTM F2020, *Standard Practice for Design, Construction, and Procurement of Emergency Medical Services Systems (EMSS) Ambulances*, 2002a, reapproved 2009.

ASTM F2076, *Standard Practice for Communicating an EMS Patient Report to Receiving Medical Facilities*, 2001, reapproved 2014.

ASTM F2171, *Standard Guide for Defining the Performance of First Aid Providers in Occupational Settings*, 2002, reapproved 2009.

B.2.2 U.S. Government Publications. U.S. Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

"Accidental Death and Disability: The Neglected Disease of Modern Society," National Academy of Sciences/National Research Council, Washington, DC, September 1966.

Agency for Health Care Policy and Research, *CAHPS: Health Care Quality Information from the Consumer Perspective*, Pub. No. 97-0012, January 1998.

Balanced Budget Act of 1997 (P.L. 105-33), August 5, 1997.

Delbridge, T. R., et al., eds., *Emergency Medical Services: Agenda for the Future, Implementation Guide*. National Highway Traffic Safety Administration, Washington, DC, August 1996. DOT HS 808-711, NTS-42.

Department of Health and Human Services, Centers for Disease Control and Prevention. "Ryan White Comprehensive AIDS Resources Emergency Act; Emergency Response Employees; Notice," *Federal Register* March 21, 1994.

Department of Transportation, National Highway Traffic Safety Administration, http://www.nhtsa/dot.gov, February 7, 1999.

Eastham, J., et al., *A Leadership Guide to Quality Improvement for Emergency Medical Services (EMS) Systems*, National Highway Traffic Safety Administration, Washington, DC, July 1997. Contract DTNH 22-95-C-05107.

Emergency Act of 1990, subtitle (b). Ryan White Comprehensive AIDS Resources.

Emergency Medical Services Systems Act of 1973. (P.L. 92-154). 93rd Congress, S.2410.

Federal Specifications for Ambulances — Emergency Medical Care Vehicle (Specification KKK – D – 1822), U.S. General Services Administration, Washington, DC, 1996.

Florida State Statute Section 401.265(2).

Governmental Accounting Standards Board (GASB) Statement 34, Basic Financial Statements — and Management's Discussion and Analysis — for State and Local Governments in June 1999.

Gustafson, D. H., et al., *Case Studies from the Quality Improvement Support Team*, Agency for Health Care Policy and Research, Rockville, MD, March 1997. Order Number 95RF00344901D.

HCFA Press Release: Medicare Announces New Ambulance Coverage Regulation, hhspress@list.nih.gov, January 22, 1999.

Hibbard, J. H., et al., "Condition-Specific Performance Information: Assessing Salience, Comprehension, and Approaches for Communicating Quality," *Health Care Financing Review* 18:1; 1996.

National Association of State EMS Directors. *Emergency Medical Services Transportation Systems and Available Facilities,* National EMS Clearinghouse, Lexington, KY, 1988.

National Highway Traffic Safety Administration, August 1996. DOT HS 808-441, NTS-42.

NIH/NHLBI, No. 93-3304.

National Standard Curriculum: Emergency Medical Technicians, Department of Transportation, National Highway Traffic Safety Administration, Washington, DC, 1971.

National Standard Curriculum: Paramedics, Department of Transportation, National Highway Traffic Safety Administration, Washington, DC, 1985.

Santa Clara Fire Department, Report on Santa Clara Fire Department Defibrillation Project, 1997.

National Institutes of Health, National Heart, Lung, and Blood Institute, "Staffing and Equipping EMS Systems: Rapid Identification of Treatment of Acute Myocardial Infarction," NIH Publication No. 93-3304, September 1993.

The President's Advisory Commission on Consumer Protection and Quality in the Health Care Industry, *Quality First: Better Health Care for All Americans; Final Report to the President of the United States*, U.S. Government Publishing Office, Washington, DC, March 1998.

Title 29, Code of Federal Regulations, Subtitle B, "Regulations Relating to Labor."

U.S. Fire Administration, "EMS Safety," FEMA, Washington, DC, 1994.

U.S. Department of Transportation, Injury Prevention Press Kit, 1994.

United States General Accounting Office, *Health Care: States Assume Leadership Role in Providing Emergency Medical Services,* GAO/HRD-86-132.

United States General Accounting Office, Report to Chairman, Special Committee on Aging, U.S. Senate, *Health Care Access: Innovative Programs Using Non-Physicians,* GAO/HRD-93-128.

B.2.3 Other Publications. Alonso-Serra, H. M., and Blanton, D. M., *Medical Direction of an Emergency Medical Services System: The Medical Director's Job Description,* presented at National Association of EMS Physicians Mid-Year Meeting and Scientific Assembly, July 15, 1996.

Altieri, M. F., et al., *A Leadership Guide to Quality Improvement for Emergency Medical Services (EMS) Systems*, National Highway Traffic Safety Administration, Washington, DC, July 1997. Contract DTNH 22-95-C-05107.

American Ambulance Association, *Community Guide to Ensuring High-Performance Emergency Ambulance Service,* AAA, McLean, VA, 2004.

American Ambulance Association, *Contracting for Emergency Ambulance Services: Guide to Effective System Design,* AAA, McLean, VA.

American College of Emergency Physicians Policy Statement, October 1997, www.acep.org/policy/PO400201.HTM.

American College of Emergency Physicians Policy Statement, "Medical Direction of Emergency Medical Services," www.acep.org/ Clinical—Practice-Management/The-Role-of-the-Physician-Medical-Director-in-Emergency-Medical-Services-Leadership/?__taxonomyid=471085#sm.
00007hbr5cfqqdvqvbt2dud6fp9hu.

American College of Emergency Physicians, *Principles of EMS Systems*, Jones and Bartlett, Sudbury, MA, 2005.

American College of Surgeons, *Essential Equipment for Ambulances Bulletin* (revised), Committee on Trauma, ACS, Chicago, IL, March 1994.

American College of Surgeons, *Resources for Optimal Care of the Injured Patient,* ACS, Chicago, IL, 1999.

American Heart Association, ECC Guidelines, Dallas, Texas, 2005.

American Heart Association, *Expanded Access to Defibrillation: Legislative Advocacy Guide,* AHA, Dallas, TX, 1996.

American Heart Association, "Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiac Care. Emergency Cardiac Care Committee and Subcommittees, American Heart Association. Part I. Introduction," *JAMA* 268:16; 1992.

American Medical Response press release, January 1999.

American Red Cross, States With Health and Safety Regulations for Specific Occupations (chart), December 1997.

Asplin, B. R., "Access, Quality, and Cost Control in Emergency Medicine: Can We Have All Three?" *Annals of Emergency Medicine* 30:6; 1997.

Babbie, E., *The Practice of Social Research,* Wadsworth Publishing Company, Belmont, CA, 1992.

Bogucki, M. S., et al., "Medical Support for the Fire Service: Current Priorities and Roles of Physicians," *Prehospital Emergency Care* 1:2; 1997.

Bourn, S. M., "Mother May I," *Journal of Emergency Medical Services,* January 1994.

Boyd, D. R., "Emergency Medical Services Systems Development: A National Initiative," *IEEE Transactions on Vehicular Technology* 104-115, November 1976.

Brice, J., Garrison, H., and Evans, A., "Study Design and Outcomes of Hospital Emergency Medicine Research: A Ten Year Analysis," *Prehospital Emergency Care* 4(2):144-150; 2000.

Bureau of National Affairs, Inc., *The Labor Relations Reference Manual*, vol. 88, BNA, Washington, DC, 1975.

Callaham, M., "Quantifying the Scanty Science of Prehospital Emergency Care," *Annals of Emergency Medicine* 30:785-790; 1997.

Cleary, P. D., and Edgeman-Levitan, S., "Health Care Quality: Incorporating Consumer Perspectives," *JAMA* 278:1608-1612; 1997.

Communications for Coordinated Assistance and Response to Emergencies (ComCARE Alliance), *ComCARE Principles,* ComCARE Alliance, Washington, DC, April 1998.

Curka, P., et al., "Emergency Medical Service Priority Dispatch," *Annals of Emergency Medicine* 22:11; 1993.

Damelio, R., *The Basics of Benchmarking,* Quality Resources, New York, NY, 1995.

Donabedian, A., "The Quality of Care: How Can it be Assessed?" *JAMA* 260:1743–1748; 1988.

Durch, J. S., et al., *Emergency Medical Services for Children,* National Academy Press, Washington, DC, 1993.

Durch, J. S., et al., *Improving Health in the Community: A Role for Performance Monitoring,* National Academy Press, Washington, DC, 1997.

Epstein, A. M., "Rolling Down the Runway: The Challenges Ahead for Quality Report Cards," *JAMA* 279:1691–1696; 1998.

Federiuk, C., et al., "Sources of Disagreement Among Private and Public Agency Paramedics," *Prehospital Disaster Medicine* 10:2; 1995.

Fitch, Joseph J., *Prehospital Care Administration,* KGB Media, Encinitas, CA, 2004.

Garza, A., "EMS Leaders Explore EMS Expansion: The Sand Key Conference," *EMS Insider*, May 1994.

Goldstein, A., *EMS and the Law,* Robert J. Brady Co., Bowie, MD, 1983.

Greenberg, M. D., et al., "Quality Indicators for Out-of-Hospital Emergency Medical Services: The Paramedics' Perspective," *Prehospital Emergency Care* 1:23–27; 1997.

Gunderson, M., "Improving EMS Response Time Performance," *NAEMSP News* November 1998.

Harbour, J. L., *The Basics of Performance Measurement*, Quality Resources, New York, NY, 1997.

Hendryson, I. E., *Accidental Death and Disability: The Neglected Disease of Modern Society,* (foreword), American Medical Association, Chicago, IL, 1970.

Horak, B., *Strategic Planning in Health Care: Building a Quality-Based Plan Step by Step*, Quality Resources, New York, NY, 1997.

IBI Group, Land Ambulance Service Review, Southwestern Ontario Municipalities, Toronto, ON, Canada, February 1999.

Ingraham, P., et al., *Government Performance: Why Management Matters,* Johns Hopkins University Press, Baltimore, MD, 2003.

Institute of Medicine, *Emergency Medical Services at the Crossroads*, 2006.

Institute of Medicine, Lohr, K. N., *Medicare: A Strategy for Quality Assurance,* Vol. II, National Academy Press, Washington, DC, 1990.

International City/County Management Association, *Benchmarking: A Method for Achieving Superior Performance in Fire and Emergency Medical Services,* ICMA, Washington, DC, 1993.

International City/County Management Association, *Budgeting: A Guide For Local Governments,* ICMA, Washington, DC, 1997.

International City/County Management Association, *Management Policies in Local Government Finance*, 4th ed., ICMA, Washington, DC, 1996.

International City/County Management Association, *Managing Fire and Rescue Services,* ICMA, Washington, DC, 2002.

Jermyn, B. D., "Response Interval Comparison Between Urban Fire Departments and Ambulance Services," *Prehospital Emergency Care* 3:1; 1999.

Joint Committee for Accreditation of Health Organizations (JCAHO), "Dimensions of Performance," http://www.jcaho.org/pubedmul/publica/camhcn/8pi.htm, October 5, 1998.

Karch, S. B. et al., "Response Times and Outcomes for Cardiac Arrests in Las Vegas Casinos," *American Journal of Emergency Medicine* 16:3;1998.

Kelly, J. M., and Rivenbank, W. C., *Performance Budgeting for State and Local Government,* M. E. Sharpe, Inc., Armonk, NY, 2003.

Kerber, R. E., "Statement on Early Defibrillation from the Emergency Cardiac Care Committee, AHA." *Circulation* 83:6; 1991.

Kirkwood, H. A., "Before the Call Comes In. EMS and Injury Prevention," *JEMS* 20:6; 1995.

Kuehl, A. *Prehospital Systems and Medical Oversight,* Third Edition. Kendall/Hunt Publishing Company, Dubuque, IA, 2003.

Laffel, G., and Blumenthal, D., "The Case for Using Industrial Quality Management Science in Health Care Organizations," *JAMA* 262:2869–2873; 1989.

Larsen, M., et al., "Predicting Survival from Out-of-Hospital Cardiac Arrest: A Graphic Model," *Annals of Emergency Medicine* 22:1652-1658, 1993.

Lerner, E. B., et al., "Ambulance, Fire, and Police Dispatch Center Times Compared with the Atomic Clock," *Annals of Emergency Medicine* 32:3; 1998.

Lerner, E.B., et al., "The Value of Using Fire Engines as First Response Vehicles," *Annals of Emergency Medicine* 32:3; 1998.

Lundenberg, G. D., and Wennberg, J. E., "A *JAMA* Theme Issue on Quality of Care: A New Proposal and a Call to Action," *JAMA* 278:1615-1616; 1997.

Mackay, M., "The Challenge of Establishing National EMS Standards." *Canadian Emergency News* 20:2; 1997.

Maio, R., and McHenry, S., Summary of the National EMS Research Agenda Planning Meeting, National Association of EMS Physicians Meeting, Lake Tahoe, NV, July 8, 1998.

Meade, D. M., "Expanded Scope: EMS The Crossroad of Care," *Emergency Medical Services* 27:5; 1998.

Metcalf, W., "State and Regional EMS Systems," *Principles of EMS Systems,* 2nd Edition, American College of Emergency Physicians, Dallas, TX, 1994.

Moore, L., *Emergency Medical Services: A Guidebook for Fire-Based Systems,* IAFF, Washington, DC, 1995.

Moore, L., *IAFF/IAFC EMS System Performance Measures Tool Operations Manual,* IAFF, Washington, DC, 2003.

Moore-Merrell, et al., *Report on EMS Field Experiments,* Fire Fighter Safety and Deployment Study Coalition, Washington, DC, Sept. 2010.

National Committee on Quality Assurance (NCQA), "HEDIS/Report Cards," http://www.ncqa.org/hedis/30exsum.htm, October 23, 1998.

National EMS Education and Practice Blueprint, 1993. National Highway Traffic Safety Administration, Washington, DC, 1993.

NHTSA Uniform Prehospital Data Set, National Highway Traffic Safety Administration, Washington, DC, 1994.

National Registry of EMTs and Paramedics, http://www.nationalregistry.org, February 7, 1999.

Neely, K.W., and Drake, M.E.R., "Multiple Options and Unique Pathways. A New Direction in EMS," *Annals of Emergency Medicine* 30:6;1997.

Newman, M., and Christenson, J., *Challenging Sudden Death: A Community Guide to Help Save Lives,* Catalyst Research and Communications, Inc., Carmel, IN, 1998.

NHTSA Uniform Prehospital Data Set, National Highway Traffic Safety Administration, Washington, DC, 1994.

Nichol, G., et al., "Cost Effectiveness Analysis of Potential Improvement to Emergency Medical Services for Victims of Out-of-Hospital Cardiac Arrest," *Annals of Emergency Medicine* 26:6;1996.

Nichol, G., et al., "Cost-Effectiveness Analysis of Potential Improvements to EMS for Victims of Out-of-Hospital Cardiac Arrest," *Annals of Emergency Medicine* 27:711-720; 1996.

Nordberg, M., "Emergency Medical Dispatch. A Changing Profession," *Emergency Medical Services* 27:8;1998.

O'Leary, D. S., "Quality Assessment: Moving from Theory to Practice," *JAMA* 260:1760;1988.

Ornato, J. P., et al., "The Need for ALS in Urban and Suburban EMS Systems," *Annals of Emergency Medicine* 19;1990.

Ormsby, C., and Salafia, P., *9-1-1 Liability: A Call for Answers,* PowerPhone, Inc., Madison, CT, 1998.

Page, J. O., "Discipline with Due Process," Prehospital Systems and Medical Oversight, 2nd ed., Kuehl, A. E., ed., Mosby Publishing Co., New York, NY, 1994.

Page, J. O., *Paramedics,* Backdraft Publications, Morristown, NJ, 1979.

Pepe, P. E., and Stewart, R. D., "Role of the Physician in the Prehospital Setting," *Annals of Emergency Medicine,* 15;1996.

Pirrallo, R. G., "Establishing Biennial Paramedic Experience Benchmarks," *Prehospital Emergency Care* 2:335-336;1998.

Poister, T. H., *Measuring Performance in Public and Nonprofit Organizations,* John Wiley & Sons, 2003.

Polsky, S. S., et al., *Continuous Quality Improvement in EMS,* American College of Emergency Physicians, Dallas, TX, 1992.

Polsky, S., et al., "Guidelines for Medical Direction of Prehospital EMS," *Annals of Emergency Medicine* 22;1993.

Rouch, W. R., et al., *Principles of EMS Systems,* 2nd ed., American College of Emergency Physicians, Dallas, TX, 1994.

Shi, L., *Health Services Research Methods,* Delmar Publishers, New York, NY, 1997.

Shanaberger, C. J., "Determining Domain," *Journal of Emergency Medical Services,* July 1991.