Mass Gathering Medical Care Planning: The Medical Sector Checklist

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For
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Mass gathering medical care refers to organized emergency medical and health services provided for spectators and participants at events in which at least 1000 persons are gathered at a specific location for a defined period of time. An exact numerical and temporal definition of the term has yet to be agreed upon in the literature and is likely to continue to vary around the United States. The delivery of emergency medical care at mass gathering events is uniquely challenging in several ways. Emergency Medical Services (EMS) personnel must navigate large crowds of people who may be densely packed into self-contained clusters or who may be located in discontinuous areas without clear landmarks, challenging timely access to patients. Frequently, physical barriers to accessing patients prevent the use of motorized transport vehicles for ingress to or egress from the area in which the patient is located. Environmental factors, such as weather, can impact or cause a given patient's illness and can contribute to large numbers of ill patients within a short time span. Failures of remote communications systems and a lack of available medical resources may lead to delays in patient access and care during mass gathering events. Increasingly, the concern for terrorist incidents and multiple casualty events at large public gatherings has caused EMS planners to rethink their human resource and equipment deployment strategies to better prepare for such catastrophes. The typical mass gathering event medical emergency is still likely to be a common malady, but may present itself in a fashion quite different than what most EMS providers are used to encountering in their communities.

Despite published peer-reviewed literature covering this subject, no uniformity or standardization of mass gathering medical care prevails at different venues and events across the country. The published literature, upon which the standards herein are based, are referenced in the the National Association of EMS Physicians (NAEMSP) document entitled "Mass Gathering Medical Care: Resource Document for the National Association of EMS Physicians Position Statement" (2015). Many case reports exist that describe both preparations for patient care, as well as the numbers and types of patients encountered at a few of the larger or more high profile events in the last three decades. However, the vast majority of mass gathering events has never been evaluated from the standpoint of the adequacy of delivery of emergency health services against an accepted standard. Development of a comprehensive guidance document addressing all elements of planning for emergency medical care at mass gathering events is the mission of this NAEMSP "Mass Gathering Medical Care Planning: The Medical Sector Checklist"

NAEMSP recognizes and respects significant variation in the specific approaches to EMS delivery at large events. However, a need to define specific minimum requirements for the delivery of emergency care at specific events exists, these requirements should be consistent with those standards of care in the community surrounding the event. Such requirements of care should be met by all event sponsors and event EMS personnel, regardless of geographic location, event size or resource availability. NAEMSP also recognizes a significant lack of scientific evidence to substantiate many of the points included in this document. With a dearth of prospective studies published in mass gathering medical care literature, the recommendations set forth in this checklist are derived from application of an organized, sequential systems approach to mass gathering event medical care. This

approach espouses a "whole is greater than the sum of the parts" philosophy. Thus, the delivery of emergency medical care at a mass gathering event is dependent on coordinating the complex interrelationships of a number of functional components and attention to detail among many operational issues.

The centerpiece of effective medical response within this guide is the "Medical Action Plan", which functions as a blueprint for the delivery of emergency medical care at a variety of given events. It consists of a compilation of sub-plans, each of which addresses a different facet of medical care operations or administration. The primary mission behind development and execution of this medical action plan is to ensure that important goals and objectives are met that relate to the delivery of emergency medical care.

What follows are the building blocks of a medical action plan for event medical care preparation, organized sequentially. Each component of the medical action plan is prefaced by a brief definition, description, and overview of the section. Individual recommendations appear as bulleted points, and are categorized as *Essential* or *Desirable* within each component of the medical action plan. These points are meant to serve as a guideline for consideration in supporting the effective planning of emergency medical care delivery for mass gathering events. Implementation of the various objectives is not directly addressed, since this will depend on the unique characteristics of individual events, local EMS system design, personnel, resources and event characteristics. Medical care that is well planned and organized should meet all of the applicable *Essential* goals and most of the *Desirable* goals.

New sections in this edition address the issues of remote public access to care, (due to the advent of universal cell phone use), early application of CPR and defibrillation with dispatch-based, phone-assisted application of both. The evaluation and disposition of disruptive spectators with altered mental status (in regard to related joint law enforcement and medical care issues requiring coordination of evaluation, care, and disposition) is newly addressed herein. Because recent, well-publicized, mass casualty incidents have raised all of our consciousness about the real potential for MCI's at all mass gatherings, the topic is now covered in its own section. As with mass gathering medical care in its entirety, the reader is referred to more in-depth guidance in the document, "Role of Emergency Medical Services in Disaster Response: Resource Document for the National Association of EMS Physicians Position Statement" (2011).

MEDICAL ACTION PLAN

The purpose of a medical action plan is to outline specific details about the organization and delivery of emergency medical care at a mass gathering event. It should be based upon a combination of experience with care at previous events and research of statistics from previous events of a similar nature and duration, coupled with objective evidence about elements known to haveinfluenced the delivery of emergency medical care at agiven previous similar mass gathering event.

The medical action plan may be influenced by jurisdictional regulations or influenced by local, regional or state guidelines addressing such planning activities. These jurisdictional guidelines should encourage and enhance coordination of crucial jurisdictional resources with those of the event itself.

Essential

- A basic documented medical action plan must be created for every mass gathering event.
- The medical action plan must be the basis for the contractual agreement between the event operations director and the event sponsors/organizers/managers.
- Authorship of the medical action plan is the joint responsibility of the event operations and medical directors.
- The medical action plan must meet or exceed all local, regional and/or state guidelines for mass gathering event EMS planning, as well as meet the level of out-of-hospital emergency medical practice in the surrounding community.
- If requested, copies of the medical action plan must be forwarded to all local, regional, state and federal officials who hold responsible roles in supporting the mass gathering event, even when medical action plans are not part of the jurisdictional permitting process.
- A copy of the medical action plan must be on-site and available to all EMS personnel at the mass gathering event
- The medical action plan must be designed or reviewed, and approved by the event medical director or the medical director of the EMS agency primarily responsible for delivery of emergency medical care in the jurisdiction of the event.
- The medical action plan must include/address the following components:
    - Provisions for physician medical oversight and operational support
    - Previous Event Research of demand for and provision of medical care in previous similar or recurring events and Venue Medical Reconnaissance of the event venue elements affecting need for and access to medical care
    - Negotiations for Event Medical Services to align desired optimal resources with realistic limitations on their acquisition/recruitment
    - Level(s) of Care to be aligned with anticipated morbidities
    - Human Resources, both in umber and expertise, to match expected presentations for care

- Medical Equipment that matches the levels of expertise for its utilization
- Treatment Facilities appropriate to anticipated magnitude of demand for care
- Transportation Resources based upon anticipated demand for levels of care beyond that provided at the venue
- Public Health Elements which will overburden EMS if not prospectively addressed from a prevention perspective
- Access to Care for mapping pathways to appropriate care in appropriate timeframes
- Emergency Medical Operations address procedural and tactical aspects of care
- Communications support the execution of operations through coordination of personnel
- Command and Control addresses the provision, organization, and functions of leadership
- Documentation is a risk management tool for the event organization and the basis for various outbreaks (i.e., hyperthermia/dehydration, contagion, chemical) surveillance
- Continuous Quality Improvement (CQI) supplies the basis for improved care at similar future events

Desirable

- The medical action plan should be completed at least 30 days prior to the mass gathering event
- The medical action plan should be distributed to, and reviewed with all internal and external participating/responsible personnel prior to the mass gathering event

PHYSICIAN MEDICAL OVERSIGHT

The purpose of the medical oversight component of the medical action plan is to define minimum recommended qualifications for the position of event medical director and its requisite job requirement expectations. Medical oversight at a mass gathering can be provided both directly (on-line/on-site) and indirectly (credentialing, training, protocol development/approval, etc.). However, the event medical director's presence (or that of his/her physician designee) at the event is preferred for several reasons. First, the on-site physician medical director signifies an organizational commitment to delivery of the most appropriate emergency medical care at the event. Second, the emergency medicine literature clearly demonstrates that physicians can positively impact decision-making in the field, especially when it concerns potential non-transports and triage decisions. Third, the on-site physician represents a part of the EMS community and can often function as its spokesperson or champion for the often-unrecognized efforts of the mass gathering medical sector in matters of crucial resource acquisition. Physician leadership can enhance the political influence often vital to recruiting adequate personnel and procuring additional resources during a surge in demand.

Physician Medical Oversight Plan

Essential

- A basic plan for the provision of physician medical oversight must exist for every mass gathering event.
- Such a plan must address aspects of direct and indirect medical oversight functions applicable and unique to each mass gathering event.
- Such a plan must ensure that EMS providers have appropriate medical and operational supervision and/or guidance from a medical command/control authority to safeguard delivery of appropriate standardized emergency medical care.
- An organizational chart consisting of the reporting structure regarding medical oversight responsibilities must be included in the plan.

Credentials and Requirements for the Position of the Event (Physician) Medical Director

Essential

- A physician event medical director must be appointed, designated, or confirmed by the event administrator/manager or venue owner for every mass gathering event at a given venue.
- The event medical director must possess a valid medical license issued from the state in which the event is being held, unless event medical planners have official government-approved waivers of such requirements.
- The event medical director must commit to the time required to plan and direct the most appropriate, standardized emergency medical care at a given event.
- The event medical director must be knowledgeable in the out-of-hospital care of acutely ill and injured patients.

Desirable

- The event medical director should possess experience as the medical director of an EMS service or agency, as well as familiarity with emergency management of disasters.
- The event medical director should be knowledgeable and experienced in the care of acutely ill and injured patients.
- The event medical director should be board eligible/board certified in Emergency Medicine and Emergency Medical Services.
- The event medical director should have previous experience in the oversight of mass gathering medical care.
- The event medical director should be on-site as much as possible during the mass gathering event.

Indirect Medical Oversight Duties

Essential

- The event medical director must participate in the design of a medical action plan for every mass gathering event.
- The event medical director must design or adapt clinical care protocols as part of this plan, to ensure that uniform and standard emergency medical care is delivered at the mass gathering event.
- A mechanism must be in place for the indirect physician supervision of all event medical personnel if the event medical director will be off-site or remote from the event.

Desirable

- The organizational chart should include the number, function, and reporting pathways for each EMS position which will exist at the event.

Direct Medical Oversight Duties

Essential

- The event medical director must be continuously available (either in-person or by some form of remote communication) to all EMS personnel for whom he/she is responsible during the course of the mass gathering event.
- Any physician designated to fulfill the event medical director's role on-site must be knowledgeable of the details regarding administration and planning of medical care for the mass gathering event.
- The event medical director must be readily and easily identifiable by uniform, command vest or other emblem on clothing.

Desirable

- The event medical director providing direct medical oversight functions should not become personally involved in the direct delivery of care to individual patients unless an extraordinary, life- or limb-threatening circumstance occurs at his/her momentary location.

PREVIOUS EVENT RESEARCH AND VENUE MEDICAL RECONNAISSANCE

The purpose of conducting research on previous similar, or same recurring events is to gather and analyze data and information on medical care demand in order to inform preparations for medical care at the present event. Similarly, medical reconnaissance on the venue wherein the event at issue is to occur also can contribute valuable information on risk factors and obstacles to effective medical care. Through careful analysis of elements related to morbidity, the details in these two components of the medical action plan are meant to inform the event operations and medical directors in their planning for successful response interventions to medical emergencies. Many of these variables are supported by published literature as having a direct or indirect relationship to the number of patients requesting or requiring care.

Additionally, a thorough evaluation of the contingent impact of the event on the operations of the local EMS system must be conducted prior to the event. The event medical director must have a sufficient understanding of the respective jurisdictional EMS system operations and capabilities to predict the risk for specific problems that would draw down these resources dedicated to service of the surrounding community.

Medical Reconnaissance Plan

Essential

- A basic medical reconnaissance plan must exist for every mass gathering event.
- Such a plan must include research for key facts about previous similar or same recurring mass gathering events, including, but not limited to, the following:

  Venue location, in relationship to destination hospitals and mobile EMS resources

  Venue characteristics that affect access to care and ease of evacuation

  - Previously documented attendance, upon which initial levels of resources and personnel are based
  - Available medical resources and personnel in the surrounding community that could potentially be requisitioned or recruited to work the event
- Transport To Hospital Rate, Patient Presentation Rate, and after action report
  - Number of violent and non-violent criminal incidents
  - Event after-action reports, including gaps and recommended actions
- Such a plan must be focused on factors likely to increase patient volume, including, but not limited to, the following:
  - Spectator demographics, including estimates of age ranges, health status, mobility, etc.
  - Type of event and expected extent of attendee participation (e.g. sporting event, festival, or rock concert)

- Expected weather conditions and seasonal climate
- Alcohol and illicit drug use, including intra-venue access, law enforcement surveillance and interdiction
- Availability/access to and safety of food, water and shelter

Desirable

- Such a plan should comprise research results on mitigation strategies used to address the following risks for increased demand for care:
  - Overcrowding (excessive volume and density)
  - Spectator mobility, as an increased risk for lower extremity injuries
  - Physical barriers to access (i.e., tiered arena levels) spectators
  - Aisle space insufficiency and blockage by spectator overcrowding
  - Excessive time for event EMS to access victims in specific uniquely remote areas of the venue
  - Entrance/ingress and exit/egress routes for spectators and participants
  - Outdoor events with exposure to toxic fauna and flora (i.e., cross-country running, cycling, equestrian events)
  - Multi-day event duration, increasing risk for contagious infectious disease
  - Warm ambient temperature and heat-related illnesses/injuries (outdoor events)
  - Cold ambient temperature and cold-related illnesses/injuries (outdoor events)
  - Sudden or unexpected changes in temperature (outdoor events)
  - Precipitation (outdoor events), increasing risk injuries from ground-level falls
  - Threat of thunderstorms with lightning and threat of electrocution
  - Threat of tornadoes or strong damaging winds
  - Ingress and egress routes for emergency vehicles
  - Threats against the event or other security concerns
  - VIPs in attendance
  - Potential for violent group behavior
  - Likelihood for technological disaster occurring during the event (plane crash, etc.)

Venue and Event Analysis: Information Gathering Prior to the Event

Essential

- The event date, location and duration must be known.
- The event site must be visited by the Event EMS Coordinator and Medical Director or his/her designee(s).
- The responsibility for delivery of emergency medical care to specific groups or sub-groups within the overall event population must be clearly defined and agreed upon by all parties concerned.
- Operational characteristics and command structure of the jurisdictional 9-1-1 EMS agency must be reviewed.
- The distances and predicted transport times to receiving hospitals must be known.
- Regional traffic flow time patterns and impact upon EMS transport times must be evaluated.
- All jurisdictional regulations governing mass gathering medical care, including fire codes, safety codes, public health codes and any other applicable local and state regulations must be reviewed prior to the event.

Desirable

- The event operations and/or medical director should attend similar events prior to the one being planned, to evaluate elements contributing to the quantitative demand for care, with implications for successful or problematic EMS delivery.
- The event operations and/or medical director should review medical and operational records from previous similar events to evaluate elements contributing to successful or problematic EMS delivery.

NEGOTIATIONS FOR EVENT MEDICAL SERVICES

Agreements to provide emergency medical care at the majority of smaller mass gathering events can be solidified after a single phone call or letter to the local EMS agency. However, a casual approach may ignore certain medicolegal and logistical issues, the complications from which could impair successful EMS delivery. For large-scale mass gatherings, the planning process may span weeks to months and involve meetings with various event representatives. It is incumbent upon the event medical and operations directors to ensure that venue and event management understand the components of responsible mass gathering medical care delivery. They must fully support the implementation of a plan to provide patients with care that is consistent with out-of-hospital care in the surrounding community. This involves their provision of event medical personnel, along with the equipment and logistical support crucial to accomplishing this goal.

Liability coverage, workmen's compensation, and disability insurance for medical personnel are subjects that should receive special attention. The event managers should take primary responsibility for assurance of appropriate liability coverage for all medical personnel. Liability insurance may be provided by each individual's previously existing plan, their employer's institutional plan, or by the event organization. Reliance on "Good Samaritan" statutes is risky, especially if medical personnel receive any form of compensation for their services and when their services were procured with advance notice.

Compensation for services rendered can be monetary or non-monetary. For many smaller events, participation in the event and a "free lunch" usually guarantees availability of volunteers. However, it is unlikely that municipal or privately contracted EMS personnel will be interested in providing services free of charge. The costs of participation by providers, as well as the delivery of service, must be calculated and passed on to the venue management, whenever possible. Added benefits, such as souvenirs or event tickets for family/friends, may also generate enthusiasm, among medical personnel to serve as event medical staff.

Essential

- The event operations director must meet with the venue managers/owners prior to the event.
- A contractual agreement must be in place that delegates responsibility for the delivery of event emergency medical care to an appropriate EMS service, agency, or authority.
- Scope and responsibility for emergency medical care must be clarified, agreed upon, and then documented.
- Issues regarding licensing and authority to practice for medical personnel must be addressed.
- Liability insurance coverage for the physician medical director and all EMS/medical personnel must be addressed.
- Compensation status for all medical personnel must be addressed.

- The number and type of medical personnel that are desirable, critical, and possible for a given event's coverage must be investigated, presented, then agreed upon prior to the event.
- Responsibility for procurement of medical resources by donations, loans, and/or purchase by event organizers must be addressed.
- Medical personnel command and control structure, consisting of reporting relationships and their remote communications pathways, must be addressed.
- Human resource logistics issues, such as provision of meals, parking and lodging, must be discussed and agreed upon with venue managers/owners.

Desirable

- The event medical director should either meet with venue owners/event managers or both as a courtesy and to demonstrate commitment to the delivery of emergency medical services.
- The event EMS operations director should coordinate and critique all aspects of emergency medical care with the event planning committee and event director both before and after the event.
- Media coverage for EMS sponsoring organizations should be sought, and plans for their public acknowledgement agreed upon.

LEVEL OF CARE

The level of care component of the medical action plan defines minimum standards for emergency medical capability at a mass gathering event and preferred credentials and experience of the medical sector personnel. Basic Life Support (BLS), which includes the ability to deliver CPR, early defibrillation, and hemorrhage control must be the minimally acceptable level of care available at a professionally covered mass gathering event.

Level of Care Plan

Essential

- A basic level of care plan must exist for every mass gathering event
- Such a plan must address the medical care sector's expertise level(s) and its capabilities. This entails the clear declaration of intent to employ basic life support (BLS) personnel versus advanced life support (ALS) personnel and the unique capabilities associated with the chosen level of care that justify this choice.
- Such a plan must specifically address how assets and personnel will be deployed to achieve early defibrillation capability for anyone within the venue to meet a collapse-to-shock goal of 5 minutes or less. In some situations or environments this may not be achievable, so the fastest possible response will be addressed.
- Such a plan must address the need for and provision of education/training of EMS providers regarding medical protocols and/or procedures specific to the actual event.
- Such a plan must be reviewed and approved by the event medical director at an agreed upon time prior to the event.
- Detailed electronic or hard copy maps of the venue site must be created to illustrate the locations of both basic and advanced life support personnel and resources as well as their geographic areas of coverage.

Desirable

- The level of care available at any mass gathering event should reflect, at a minimum, that which is available in the surrounding community.
- Availability of advanced life support (ALS) level care is always preferred at any mass gathering event.
- When advanced life support resources and personnel are limited at an event, they should be located in a fixed position rather than remaining mobile.

Emergency Medical Capabilities

Essential

- Emergency medical providers delivering both basic and advanced life support at a mass gathering event must be capable of evaluating and initiating stabilization of the following emergency conditions: :
- Abdominal pain
- Airway obstruction
- Allergic reactions/anaphylaxis
- Altered mental status
- Animal bites
- Back pain (traumatic and non-traumatic)
- Blast Injury
- Burns
- Cardiac/Respiratory arrest
- Cerebrovascular accident (CVA)
- Chest pain and cardiac symptoms
- Diabetic emergencies
- Electrocution
- Environmental emergencies
- Hazardous materials incidents with patient complaints
- Headache
- Hemorrhage (internal and external)
- Near-drowning and water-related trauma
- Ophthalmologic illness and injury
- Overdose/poisoning
- Pregnancy problems/labor and delivery
- Psychiatric emergencies
- Respiratory distress
- Seizures
- Syncope
- Traumatic injuries

Development of Protocols and Standard Operating Procedures

Essential

- The event medical director must ensure that all prehospital providers deliver medical care according to an accepted set of protocols and standard operating procedures that he/she has designed or adapted for the event with attention to local, regional or state protocols already in force to not conflict which may lead to omissions or confusion in the midst of patient care
- The protocol set must be approved and disseminated prior to the event by the event medical director.
- Patients who are treated and released, either appropriately or against medical advice, must be cleared either by a physician or an appropriately trained and certified medical care provider, delegated by the event medical director to make such decisions, in compliance with the local, regional or state procedures and documentation
- The event medical director, in collaboration with Event Security and the event operations director, must ensure that a policy is in place for the care of minors who present to the medical sector for evaluation and/or treatment without a parent or legal guardian.
- All medical personnel must be educated and trained on event protocols and policies prior to the beginning of event coverage.

Desirable

- Protocols and standard operating procedures should adhere to jurisdictional practice standards, and event-specific policies should provide care on a level consistent with these standards.

HUMAN RESOURCES

The exact numbers of emergency medical personnel necessary to deliver appropriate care at fixed treatment facilities and to provide roving coverage that will guarantee rapid response for life-threatening medical emergencies will differ for every mass gathering event. The best estimates for staffing levels come from historical data on levels of demand for care at previous similar events or previous occurrences of the same event. An approximation of both the demand for event care and that for transport off-site can be estimated by utilizing Patient Presentation Rate (PPR) and Transport to Hospital Rate (TTHR) calculated from previous similar events, then applied to the expected attendance at the event for which plans are being made. If the number of presentations for medical care is divided by the attendance, a Patient Presentation Ratio is the result. Similarly, if the number of transports from the event to outlying hospitals is divided by the attendance, a Transport to Hospital Rate results. These ratios can then be multiplied by the expected maximal attendance figures of the event for which plans are being made, to yield the number of patient presentations and number of transports expected. Given these outcome estimates, personnel staffing levels can be determined that will be needed to meet these demands.

The optimal staffing levels would allow event EMS personnel to access anyone who develops sudden alteration/loss of consciousness in less than 5 minutes. This standard would maximize the odds of successful resuscitation in the event of cardiac arrest. As important, staffing goals for mass gathering events should maximize numbers of qualified personnel to both avoid burdening the local EMS system and be prepared for mass casualty incidents. In the final analysis, the number of personnel in position to provide care will always be a balance between that which is needed and that which the surrounding community (from which they are recruited) can provide.

The purpose of the human resource component of a medical action plan is to define the roles and responsibilities of medical personnel of different education/expertise levels and point out solutions for logistical issues surrounding their deployment. A comprehensive human resource plan will address numbers and types of medical personnel necessary to provide acceptable emergency medical care relative to the unique demands for medical care at specific events. It will also detail how the personal needs and compensation of these personnel will be handled.

Human Resource Plan

Essential

- A basic human resource plan must exist for every mass gathering event.
- The human resource plan must clearly manifest a chain of command that demonstrates categorization and connectivity of all personnel.
- The human resource plan must clearly delineate the medical care responsibilities for all personnel who will provide medical care.
- The human resource plan must clearly indicate roles and responsibilities for personnel with advanced medical training (e.g. physicians, nurses, allied medical care professionals).

- The human resource plan for large scale events must clearly indicate how personnel management issues will be addressed, including, but not limited to, the following:
  - Work cycles (shift rotation)
  - Shift-related check-in and out procedures
  - Credentialing procedures
  - Hydration and alimentation needs
  - Rest and/or sleep needs
  - Back-up scheduling
  - Compensation
- A map of the venue site, with locations of all deployed medical personnel, must be created and stored at the command post.

Desirable

- Maps with locations of all deployed medical personnel should be enhanced by the creation of map grids and indicate the corresponding assignments of personnel to geographic areas.
- Copies of this map should be distributed to all medical personnel.
- Consideration should be given to designation of a personnel manager for large scale events.

Levels of Training/Expertise/Certification

Physician

Essential

- Physicians charged with direct patient care responsibilities must be currently licensed in the state in which the mass gathering event is being held, unless event medical planners have official government-approved waivers of such requirements.
- Physicians charged with direct patient care responsibilities must be approved by the event medical director to provide care.
- Physicians charged with direct patient care responsibilities must be or have been certified in cardiopulmonary resuscitation (CPR), Advanced Cardiac Life Support (ACLS), Advanced Trauma Life Support (ATLS), and Pediatric Advanced Life Support (PALS) or have the requisite knowledge to handle emergencies that are covered within these training courses.
- Physicians charged with direct patient care responsibilities must be experienced in the care of patients with life and limb-threatening illnesses and injuries.
- On-site physicians must be immediately available when requested to assist in patient care or evaluation.

Desirable

- Use of on-site physicians is uniquely advantageous in the following circumstances:
  - Sophisticated medical care resources on-site (e.g. radiography, EKG)
  - Limited EMS resources for transportation to off-site institutions of higher care
  - Large numbers of spectators and/or participants (potential for large patient volume with broad variety of medical problems)
  - Significant risk for the development of life and/or limb-threatening injury in performers (auto racing, equestrian events, skiing, boxing, etc.) or illness in spectators (acute myocardial infarct, congestive heart failure, substance abuse)
  - Long transport times to definitive care facilities, implying the need for more extensive on-site stabilization
- If physicians are available on-site, medical personnel should be briefed on whether their primary responsibility is direct patient care or consultation.
- One or more on-site physicians should be present within each designated treatment area as much as possible during the event.
- One or more on-site physicians should be board-certified/board-eligible in Emergency Medicine optimally, but should otherwise be knowledgeable and experienced in the care of acutely ill and injured patients.
- Physicians charged with medical care leadership responsibilities should be thoroughly familiar with the Incident Command System, mass casualty incident response and mass casualty field triage.

Physician Assistant (PA), Nurse Practitioner (NP)

Essential

- The role of PA's and NP's at mass gathering events is primarily treatment of ambulatory patients with non-critical complaints.
- PA's and NP's must be directly or indirectly supervised by an appropriately licensed and qualified physician, in compliance with laws of the state in which the event is held, unless event medical planners have official government-approved waivers of such requirements.
- PA's and NP's charged with direct patient care responsibilities must be currently licensed in the state in which the mass gathering event is being held.
- PA's and NP's charged with direct patient care responsibilities must be approved by the event medical director to provide specific, circumscribed care set forth by the event medical director.
- PA's and NP's charged with direct patient care responsibilities must be currently certified in CPR, ACLS, and PALS.

Desirable

- Use of on-site PA's and NP's may be appropriate in the following circumstances:
  - Sophisticated medical care facilities on-site (radiography, EKG, etc.)
  - Limited transportation resources for patient evacuation to hospitals
  - Large numbers of spectators and/or participants with the expected potential for large patient volumes with broad varieties of non-critical medical problems)
  - Long transport times to definitive care facilities
- PA's and NP's should primarily be utilized within fixed treatment facilities
- PA's and NP's who are charged with direct patient care responsibilities should be experienced in the evaluation and treatment of patients with acute medical complaints
- PA's and NP's who are charged with direct patient care responsibilities should be certified in International Trauma Life Support or Pre Hospital Trauma Life Support
- PA's and NP's who are charged with direct patient care leadership responsibilities should be knowledgeable about the Incident Command System and mass casualty incident response and patient triage

Registered Nurse (RN) Medical Intensive Care Nurse (MICN)

Essential

- The role of the nurse at a mass gathering event is primarily assistance in the treatment of acutely ill and/or injured patients, especially regarding triage in fixed facilities.
- Nurses must be directly supervised by an appropriately licensed and qualified physician.
- Nurses charged with direct patient care responsibilities must be currently licensed in the state in which the mass gathering event is being held.
- Nurses charged with direct patient care responsibilities must be currently certified in CPR and ACLS.

Desirable

- Nurses should not independently evaluate and treat patients unless they have recognized prehospital credentials, such as a flight nurse or prehospital nurse.
- Nurses should primarily be utilized within fixed treatment facilities.
- Nurses charged with direct patient care responsibilities should be experienced in the evaluation, triage, and treatment of patients with acute medical complaints.
- Nurses charged with direct patient care responsibilities should be certified in CPR, ACLS, and PALS, as well as either International Trauma Life Support (ITLS), Pre-Hospital Trauma Life Support (PHTLS) or Trauma Nurse Core Course (TNCC), Nurses utilized at mass gathering events should be knowledgeable in the unique features medical care in mass gatherings

- Nurses should be charged with medication dispensation and tracking, if care at the event will encompass these functions.

EMT-Advanced, and Paramedic

Essential

- The role of the EMT-Advanced and Paramedic at a mass gathering event is primarily evaluation, stabilization, and/or treatment of acutely ill and/or injured patients who require advanced life support level care or invasive medical therapy to manage airway, ventilator, and cardiovascular instability.
- EMT-Advanced and Paramedic personnel charged with direct patient care responsibilities must be currently certified or licensed in the state in which the mass gathering event is being held, unless event medical planners have official government-approved waivers of such requirements.

Desirable

- Use of EMT-Advanced and Paramedics is strongly encouraged in the following circumstances:
  - Limited transportation resources
  - Large numbers of spectators and/or participants (potential for large patient volume with broad variety of medical problems)
  - Significant risk for the development of life and/or limb-threatening injury (auto racing, equestrian events, boxing, skiing, etc.) in participants and/or illness in spectators (acute MI, CHF, Asthma, etc.)
  - Long transport times to definitive care facilities
- EMT-Advanced and Paramedics should be utilized both within fixed treatment facilities and as mobile emergency responders.
- EMT-Advanced and Paramedics should be knowledgeable in the unique aspects of mass gathering medical care.
- EMT-Advanced and Paramedics should be thoroughly familiar with the incident command system, mass casualty incident response, and field triage.

EMT

Essential

- The role of the EMT at a mass gathering event is primarily evaluation and treatment of acutely ill and/or injured patients who require only minor or uncomplicated treatment, unless there is no advanced life support capability available.
- EMTs charged with direct patient care responsibilities must be currently certified or licensed in the state in which the mass gathering event is being held.
- EMTs must be certified in CPR and First Aid.

Desirable

- EMTs can be utilized within fixed treatment facilities, but they should be utilized primarily as mobile emergency responders when ALS capability is available within fixed treatment facilities.
- EMTs charged with direct patient care responsibilities should be knowledgeable in the unique aspects of mass gathering medical care.
- EMTs charged with direct patient care responsibilities should be familiar with the incident command system and mass casualty incident response and field triage.

Volunteers and Ancillary Medical Personnel (not trained to the EMT level)

Essential

- Volunteers and ancillary medical personnel must know how to summon or alert the event's professional emergency medical care providers, as these personnel are the vital link between the demand for medical care and the organized medical resources and professional personnel purposed to meet that demand.

Desirable

- Volunteers and ancillary medical personnel should serve as scribes, spotters or in other positions which do not require direct clinical patient care responsibility.
- Volunteers and ancillary medical personnel should be trained and credentialed in CPR and basic first-aid if patient contact is anticipated.

Calculating Estimates for an Appropriate Number of Personnel

Essential

- Event medical directors should utilize historical data from previous occurrences of the event, or other similar events, to estimate a Patient Presentation Rate and Transport to Hospital Rate for an event.
- A minimum number of emergency medical personnel must be on-site to treat the volume of patients expected according to medical reconnaissance, statistical estimates and experience from previous events.

Desirable

- Sufficient numbers of appropriately trained personnel should be present within fixed treatment facilities to fulfill the following functions (one person may occupy more than one position):
  - Triage of patient inflow
  - Evaluation and treatment
  - Medical record keeping
  - Communications
  - Logistics

Credentialing

Essential

- All medical personnel must be appropriately licensed, certified and credentialed to practice their medical specialty in the jurisdiction in which the event is being held.
- All local, regional and state regulations regarding scope of practice for prehospital care must be followed.
- All medical personnel must prominently display an official event identification badge (preferably with personnel photo) attached to their uniform or person above their waist.

Desirable

- Approval and verification of medical credentials should be performed prior to the initial day of the mass gathering event.

Compensation

Essential

- Medical personnel must never withhold emergency medical care to persons at a mass gathering event due to the inability of the patient to pay for services.
- Medical personnel must never request payment on-site for the delivery of emergency medical care.

Desirable

- Medical personnel should receive some form of compensation from event management for their services.
- Any compensation should be distributed in an equitable manner that takes into consideration the level of participation and responsibility of personnel.

Deployment Scheme

Essential

- Emergency medical personnel must be strategically deployed so that arrival of basic life support personnel with defibrillation capability will occur at a patient's side within 5 minutes of a request for aid, 90% of the time.
- Medical personnel deployed in the field must maintain constant radio communication capability or visual contact with their supervisors or the command post.
- Advanced life support personnel are best utilized within fixed treatment facilities unless there are ample providers available to permit roving advanced life support teams without compromise of fixed treatment facility staffing capabilities.
- Deployment of emergency medical personnel must occur before the event begins when the gates open to spectators; the exact time should be determined by the event operations director, in conjunction with the venue administrators.
- Dismissal of emergency medical personnel must not occur before the event ends and all spectators have left the event; the exact time at which personnel may be demobilized should be determined by the event operations director, in conjunction with the event managers and venue administrators.

Desirable

- Roving teams of emergency medical personnel should be deployed proactively to monitor for emergency medical incidents during events in which there is significant crowd density or other factors which may limit response times or timely access to patients.
- Separate groups of emergency medical personnel should be assigned to care for the spectators or the participants at events in which there is a likelihood that the number of people who will become ill and/or injured may compromise medical coverage for one group or the other.

Logistics

Essential

- The event operations director must determine whether a designated medical sector logistician(s) is necessary to obtain, distribute, and monitor supplies.
- The event operations director or the medical sector logistician must ensure that the necessary quantity and type of supplies have been procured prior to the event.
- The event operations director or the medical sector logistician must ensure that continuous availability of critical medical supplies during the event is maintained.
- The event operations director or the medical sector logistician must ensure that distribution of supplies occurs in a timely and efficient manner.

Desirable

- One or more designated logisticians should be assigned to the medical sector at large scale events to handle the following tasks:
  - Procurement and distribution of all supplies and pharmaceuticals
  - Tracking of inventory and maintenance of appropriate levels of supplies
  - Collection and return of unused supplies
  - Collection and security of completed patient care reports (PCRs)
- Transportation routes for delivery of supplies should be planned and should take into account the ingress/egress routes, density, mobility and location of spectators, and the characteristics of the terrain on which they will traverse.

Training

Essential

- The event operations and medical directors must determine whether emergency medical personnel will require specialized training prior to the beginning of the event.
- The event operations director should review the event medical and mass casualty plans with all emergency medical personnel prior to the event.
- If specialized training is required, it must be accomplished prior to the beginning of the event, with its mode (on-site, classroom, interactive computer-based) selected according to its feasibility and appropriateness.

MEDICAL EQUIPMENT

The medical equipment component of the medical action plan defines the minimum necessary medical equipment and recommendations for its deployment. To suggest minimum quantities for the recommended items is impossible since this will differ for every event. Note that the majority of basic and advanced equipment listed in this document (see Appendices 1 to 5) corresponds to that typically carried on a basic life support ambulance and advanced life support ambulance, respectively.

A single standard pharmaceutical list (Appendix 6), is a difficult one to design due in part to the fact that every state has different regulations regarding the choice of require medications and their approval for administration by different levels of EMS personnel. Clearly, advanced life support providers should be prepared to utilize their entire armamentarium if needed at a mass gathering event. Under no circumstances should they dispense or administer medications with which they are neither familiar, nor trained and certified to deliver. Additionally, the use of analgesics, anti-emetics and airway management drugs must be closely monitored either directly (medical command contact) or indirectly by the event medical director, since patients who require these agents may be critically ill and need of the highest level of advice available.

The use of "emergency department" equipment and pharmaceuticals is rare at mass gathering events and likely limited to those extremely large and well-funded events at which a constant physician presence is guaranteed. Indeed, several events, like the Indianapolis 500, actually boast an on-site hospital. The items listed in the relevant appendices are meant to only serve as a guide for those event medical and operations directors who are unsure how to approach delivery of medical care at a mass gathering event. They are not meant to replace equipment and pharmaceutical lists at well-planned events that have already have sophisticated medical care delivery systems. Since fixed treatment facilities may span a spectrum of complexity from simple tents to specially built mini-hospitals, no essential items are listed under the "Fixed Treatment Facility Medical Equipment" and "Fixed Treatment Facility Pharmaceuticals" appendices.

Medical equipment cache design, prioritization and management are important to the overall functioning of the medical sector. Large or prolonged (multi-day) events may dictate that someone be assigned as logistician to effectively manage equipment stocking and deployment issues. This person is best designated prior to the event so that he/she may become familiar with the equipment chosen and plans for its deployment.

Medical Equipment Plan

Essential

- A basic medical equipment plan must exist for every mass gathering event.
- Such a plan must make reference to the highest level of care that is anticipated to be delivered at the mass gathering event, the amount and type of equipment that will enable this goal to be met and a deployment scheme for such equipment.
- Such a plan must include a point-of-contact and/or contact information to request additional supplies and equipment.

- Equipment to allow the ability to deliver medical care at the BLS level (including early defibrillation) and hemorrhage control to all spectators and participants, is the minimum acceptable standard for a mass gathering event.
- All local, regional and state regulations must be met or exceeded when developing a plan for use of medical equipment at a mass gathering event.

Desirable

- Stockpiling of additional supplies and equipment is strongly encouraged at every mass gathering event.
- The event medical director should decide upon and inform mobile EMS crews and responders what equipment and/or medical devices will be carried on field responses.

Medical Equipment – Basic

- See Appendix 1

Medical Equipment – Advanced

- See Appendix 2

Pharmaceuticals

- See Appendix 3

Non-medical Equipment

- See Appendix 4

Fixed Treatment Facility Medical Equipment (physician-level care)

- See Appendix 5

Fixed Treatment Facility Pharmaceuticals (physician-level care)

- See Appendix 6

Staging and Deployment of Equipment

Essential

- A plan for the staging and deployment of medical equipment must be created and reviewed prior to the event.
- All equipment and pharmaceuticals must be pre-positioned before the event medical coverage begins.
- Equipment and pharmaceuticals must be known to key personnel and tested by the event operations director and/or a dedicated medical logistician prior to the onset of medical coverage of the event.
- The mechanisms to deliver and/or replenish equipment and pharmaceuticals must be known to necessary personnel.
- Only appropriately licensed and credentialed individuals will be allowed to access and deliver prescription pharmaceuticals.
- Cold chain storage of pharmaceuticals must be preserved when necessary.

Desirable

- Medical personnel should be dedicated to logistics and resupply for high-volume events in which this function is not handled by venue personnel.

TREATMENT FACILITIES

The rationale for the treatment facility component of the medical action plan is twofold. First, a clearly defined plan to deliver critically ill and/or injured patients to on-site resuscitative care must be designed. Second, establishment of on-site treatment facilities must be guided by criteria that ensure a safely constructed environment to maximize efficiency for medical personnel and stabilization and treatment for patients.

On-site treatment facilities are generally needed only for large mass gathering events, those that are planned for a lengthy (all-day, multi-day) period of time, those in which a high patient volume is predicted, and those in which an excessive transport time to off-site definitive care treatment facilities exists. On-site treatment facilities can be as simple as a tent, in which basic care is offered with reserved reclining space for patients, or as comprehensive as freestanding emergency departments. The exact configuration will depend on the predicted needs of the event patient population and its available human and financial resources support. Important elements to consider when designing on-site treatment facilities include safe construction of the entity, communications requirements, medical and non-medical equipment needs, barrier-free access.

Off-site treatment facilities are usually the primary destinations from site of discovery for critically injured or ill patients who require definitive care. Hospitals and other acute care facilities which may serve as transport destinations should be evaluated for their capabilities and capacities to handle specialty and large patient volume situations.

Treatment Facility Plan

Essential

- A basic treatment facility plan must exist for all mass gathering events.
- Such a plan must address both on-site and off-site treatment facilities.
- Such a plan must address the physical characteristics and logistics of any on-site treatment facilities which are planned for the event.
- Such a plan must address the capability of off-site treatment facilities to handle the expected patient load, including specialty patients, such as critical trauma, stroke, ST-elevation myocardial infarction (STEMI), eye injuries, mental illness, and hazardous materials exposure patients.

Desirable

- On-site treatment facilities should be established whenever analysis of variables related to patient generation and care indicate that a significant patient load is possible.
- Off-site treatment facilities should include regional referral centers, as well as local acute care facilities.

On-Site Treatment Facilities

Physical Characteristics (Construction)

Essential

- On-site treatment facilities must be constructed to withstand predictable weather conditions during the event.
- On-site treatment facilities must protect the occupants from possible adverse weather conditions, including extremes of heat and cold.
- On-site treatment facilities must be constructed to minimize the extremes of their environmental temperatures.

Desirable

- On-site treatment facilities should offer privacy for at least one patient at a time.

Communications

Essential

- On-site treatment facilities must have two-way communications capabilities with the event command officials, the event medical director, and all medical care providers throughout the venue.
- On-site treatment facilities should have two-way (duplex) communications capability with each off-site definitive care receiving facility (unless it is determined an event-dedicated ambulance crew can provide this capability).

Desirable

- Redundant communications modes, such as radio, cell, and landline telephone, should be available to medical personnel staffing on-site treatment facilities.

Medical Equipment and Pharmaceuticals

Essential

- On-site treatment facilities must have sufficient medical equipment to initiate appropriate treatment of all common medical emergencies listed under the "Level of Care" section.
- On-site treatment facilities must have medical equipment of a quality consistent with the standards offered in the surrounding community.
- On-site treatment facility personnel must ensure the safety, sanitation, and readiness of their medical equipment and pharmaceuticals.

Desirable

- On-site treatment facilities should have their own dedicated cache of medical supplies, although they may be stocked with equipment from an event-dedicated ambulanceif this does not compromise the care of transported patients.
- The continual care rendered in on-site treatment facilities must not depend upon equipment from an ambulance that will leave the venue with a patient.

Non-medical equipment

Essential

- A sufficient number of cots and chairs must be available for the anticipated patient volume.
- Medical waste must be disposed of appropriately, consistent with U.S. Occupational Safety and Health Administration guidelines.

Desirable

- A sufficient number of chairs and separate area should be available for medical personnel to rest.
- One or more tables should be available for documenting patient care and storing supplies.

Level of Care

Essential

- On-site treatment facilities must offer a level of care at least equivalent to Basic Life Support.

Desirable

- Advanced Life Support care should be available at every on-site treatment facility, if possible.

Staffing (Human Resources)

Essential

- At least one medical provider qualified to deliver the highest level of care capable at the on-site treatment facility must be present at all times during the operating hours of that facility.
- A predetermined chain of command and responsibility must be instituted in each on-site treatment facility.
- Adequate medical personnel must be assigned to each on-site treatment facility based on predicted patient volume.

Desirable

- Advanced Life Support providers assigned to on-site treatment facilities should not leave these facilities to retrieve patients; patients should be brought to the facilities by basic life support providers (preferably) or other personnel.

Patient Access

Essential

- On-site treatment facilities must be clearly marked, in appropriate languages, so that attendees and staff recognize them as medical aid stations.
- On-site treatment facilities must have a clearly marked (in appropriate languages) entrance(s) and exit(s) consistent with jurisdictional fire codes.
- Approaches up to and into these facilities must be in compliance with the American Disabilities Act.

Desirable

- The location of on-site treatment facilities and/or the procedure to access emergency medical care should be announced or displayed on a regular basis so that all attendees are made aware of this information.

Logistics (Location, Hours of Operation, Security etc.)

Essential

- On-site treatment facilities must be located in an area that is secure and easily accessible by the public.
- The event operations director must ensure the ongoing security of on-site treatment facilities for equipment, staff and patients.

- On-site treatment facilities must be operational for the duration of the mass gathering event, unless the event operations director redeploys staff and equipment.
- All signage for on-site treatment facilities must be in the predominant or accepted languages of the surrounding community and/or the languages corresponding to the event's participants and spectators.
- The location of on-site treatment facilities should be decided prior to the mass gathering event.
- Medical personnel working at on-site treatment facilities should be aware of the location of the closest security or law enforcement personnel.
- The on-site treatment facility should have a procedure to deal with threatening or violent patients. This includes the ability to quickly request security/law enforcement personnel presence until the medical provider in-charge or event command officials confirm that there is no longer any threat to others..
- On-site treatment facilities staff should be prepared to receive patients upon official opening of the venue to spectators and remain open until the event officials declare that all spectators have evacuated the premises and the event is officially closed. At that time, it should be made clear that any subsequent injuries or illnesses will receive care from the jurisdictional 9-1-1 EMS services.

Desirable

- The location of on-site treatment facilities should be decided upon prior to the mass gathering event.
- Medical personnel working at on-site treatment facilities should be aware of the location of the closest security or law enforcement personnel, if they are not co-located with medical personnel.
- All event spectators and participants discovered to have alteration in mental status should be evaluated by medical personnel prior to leaving the event, whether by way of disposition to a higher level of medical evaluation, law enforcement incarceration, or ejection with/without accompanying spectators or officials. This evaluation should be guided by a protocol, previously approved by medical direction. On-site treatment facility personnel should evaluate all patients with altered mental status of a threatening or violent patients nature who present to the facility. An official request from medical personnel should be made for Ssecurity/law enforcement personnel presence until the medical provider in-charge or event command officials confirms that there is no longer any threat to others to others. inside has been eradicated.
- On-site treatment facilities staff should be prepared to receive patients upon official opening of the venue to spectators and remain open until the event officials declare that all spectators have evacuated the premises, and the event is officially closed., in which case, any subsequent injuries or illnesses will receive care from the jurisdictional 9-1-1 EMS services.

Off-Site Treatment Facilities

Receiving Hospitals

Essential

- One or more receiving hospitals must be designated to receive potential patients from the mass gathering event.
- Potential receiving hospitals must be notified of the event prior to its occurrence.
- The event operations director must ensure that event EMS personnel are oriented to local hospital capabilities, and that he/he assigns specific transportation destinations to departing ambulances.
- Receiving facilities must be notified of a patient being transferred from the event venue.
- In response to a multi-casualty incident, all attempts must be made to appropriately and efficiently distribute casualties to multiple hospitals in order to reduce the likelihood of overwhelming any single receiving facility.

Desirable

- Distribution of casualties should be planned by the event operations and medical directors in conjunction with the local medical community/facilities and its ED directors prior to the event.

Hospital Capabilities

Essential

- The event operations and medical directors must be aware of receiving hospital capabilities and the availability of specialty services.
- The closest trauma, stroke, and STEMI centers to the event location must be identified and their capabilities categorized prior to the mass gathering event.
- A mechanism must be in place to alert the event operations director and/or the Command Post of changes in hospital closure and diversion status.

Desirable

- Designated referral hospitals with specialty care capability in fields such as Ophthalmology, Pediatrics, Obstetrics, and Psychiatry specialty care should be identified prior to the mass gathering event.
- A designated receiving hospital(s) for contaminated patients from a hazardous materials or weapon of mass destruction (WMD) incident should be identified prior to the mass gathering event. These institutions should be designated based upon their capabilities to handle large numbers of patients who are victims of shootings, explosions, burns, toxic and or biologic exposures, and stampedes.

TRANSPORTATION RESOURCES

The transportation component of a mass gathering medical action plan defines how emergency and non-emergency transportation resources will be deployed and utilized during a mass gathering event. Ground transportation resources are used to deliver EMS personnel and supplies to the scene of a medical incident and to transport acutely ill and injured patients to on-site and off-site treatment facilities. Ground transportation resources will often include traditional ambulances. They may also include non-traditional vehicles such as modified golf carts, gators, bicycles, boats, or other vehicles. These vehicles are often able to access places where a traditional ambulance cannot. Non-traditional vehicle resources can be crucial assets, as they can increase mobility and decrease response and evacuation time at events with particular characteristics, spectator densities, and environments/terrain.

Air medical transportation resources can be used for a variety of purposes: to transport acutely ill and injured patients to off-site acute care facilities; to deliver additional personnel and/or equipment to remote venue sites; and to deliver additional personnel and/or equipment during a mass casualty or disaster incident. Non-emergency transportation resources can be used to transport patients with minor injuries and/or illnesses to on-site and off-site treatment facilities and to deliver EMS personnel and supplies to locations within the mass gathering venue.

There are many theories governing the staging of transportation resources. However these resources are positioned, the plan should meet several objectives.: Response time to medical emergencies should be minimized. Access to patient loading areas should be unimpeded (relatively) and secured. Egress pathways to a treatment facility should be unimpeded (relatively) and safe from pedestrian interfaces. Collaboration of the event and/or venue security apparatus is crucial to achieving these objectives.

Transportation Plan

Essential

- A basic transportation plan must exist for every mass gathering event.
- Such a plan must contain, at a minimum, the number and medical crew capabilities (BLS vs ALS) of ambulances deployed, type and number of non-emergency transport vehicles, and staging locations for all transportation resources.
- Such a plan must address how and where additional transportation resources will be obtained if needed (mutual aid).

Desirable

- The transportation plan should predict transportation resource utilization, based on previous similar or recurring event statistics, that allow a projected TTHR to be calculated, and analysis of unique event type characteristics that translate into disproportionate patient generation.

- Non-emergency transportation resources should be utilized for patients with non-life and non-limb threatening illness and/or injuries.
- The number of transportation resources available for event deployment should be greater than the predicted utilization.
- The number of on-site ground transportation resources should be maintained at a constant level throughout the event.
- Staging of vehicles should also address refueling and restocking.
- Event-dedicated transportation resources should not leave the venue to respond to jurisdictional 9-1-1 calls beyond the venue perimeter.

Emergency Transportation—Ground

Traditional (Ambulance)

Essential

- Traditional ground transportation resources must be readily available to both respond to medical incidents at a mass gathering event and transport patients off-site to surrounding hospitals.
- Traditional ground transportation resources must be clearly marked and highly visible.
- Traditional ground transportation resources should be maintained and equipped to meet all state regulations and licensure standards.

Desirable

- Traditional ground transportation resources should be dedicated to the mass gathering event.
- Traditional ground transportation resources should be on-site at the mass gathering event.
- Traditional ground transportation resources should be equipped with communication devices linked to the event medical director.

Non-traditional
(Modified golf cart, gators, bicycles, boat, or other emergency vehicle)

Essential

- When applicable, protocols for the appropriate utilization of non-traditional ground transportation resources must be formulated prior to the mass gathering event. These resources are crucial assets for the spectator densities, physical environments, and the type events for which they were designed. They can enhance both response and patient evacuation times.

Desirable

- Non-traditional transportation resources should be utilized whenever indicated for their ability to penetrate crowds or access difficult terrain/environments.
- Non-traditional transportation resources should be dedicated to the medical sector for the duration of the mass gathering event.
- Non- traditional transportation resources should be clearly marked and highly visible.
- Non- traditional transportation resources should be staffed by at least one person with medical training to at least the EMT level.
- Non-traditional ground transportation resources should be equipped with communication devices linked to the event medical director.

Emergency Transportation—Air Medical

Essential

  - Protocols for the appropriate utilization of air medical resources must be formulated prior to the mass gathering event.
  - A dedicated landing zone must be established and secured if air medical resources are used during a mass gathering event.
- Guidelines for use of air medical resources should be disseminated to event medical and surrounding EMS leadership personnel prior to the mass gathering event.
- Local jurisdictional or air medical service-specific operating procedures concerning fire suppression capability at the landing zone should be followed.
- Local operating procedures concerning security and safety at the landing zone should be designed/adapted and strictly enforced.

Non-emergency Transportation

Essential

  - Protocols for the appropriate utilization of non-emergency transportation resources must be formulated prior to the mass gathering event.

Desirable

- Non-emergency transportation resources should be available to reduce utilization of emergency transportation resources, especially if emergency transportation resources are in short supply.
- Non-emergency transportation resources should be dedicated to the medical sector for the duration of the mass gathering event.
- Non-emergency transportation resources should be clearly marked and highly visible.

- Non-emergency transportation resources should be staffed by at least one person with medical training at least to the EMT level.
- All non-emergency transport vehicles should be equipped with communication devices linked to the event medical director.

Staging/Placement of Transportation Resources

Essential

- Transportation resources for a mass gathering event must be geographically staged and oriented so that predicted evacuation times from on-site medical incidents to on-site or off-site fixed facilities are minimized.
- The staged location of these vehicles must not impede or intrude on the conduct of the event.
- Provisions should be made for refueling and restocking of transportation vehicles.

Desirable

- Emergency transportation resources should be staged on-site at a mass gathering event whenever possible.
- Designated reserved parking areas should be established for emergency vehicles.
- Ambulances reserved for off-site transportation should be staged, facing their planned egress route.

PUBLIC HEALTH ELEMENTS

The purpose of the public health component of the medical action plan is to protect the health and well-being of participants and spectators from infections related to improper food handling, contaminated water, and/or improper waste disposal, dehydration as a result of insufficient potable water, and/or unintentional injuries related to the interfaces of ambulatory spectators and emergency vehicle traffic. Event EMS personnel must determine if the jurisdictional public health department and other regulatory authorities will be responsible for oversight of traditional public health responsibilities at a mass gathering event. While event EMS personnel may not be directly responsible for any of these areas, a working knowledge of factors contributing to both infectious and non-infectious diseases and unintentional injuries, related to improper management of these areas, should reduce the number of medical incidents during the event. This can have significant implications for demand on event medical services.

Management functions for each category are as follows:

- Food management includes, but is not limited to, food storage, food handling, food preparation and the cleanliness, actions and activities of food service personnel.
- Water management includes, but is not limited to, sources, supply, distribution, storage, handling and the conduits used to deliver water to the public.
- Waste management includes, but is not limited to, water and non-water carried sewage and their respective disposal facilities, solid, liquid and gaseous wastes, refuse storage and refuse disposal.
- Land management includes, but is not limited to, flora control, fauna control, necessary and proper illumination and appropriate maintenance of terrain integrity. This is especially relevant to cross country events, whether cycling, motorbiking, running, or equestrian types.
- Road management includes, but is not limited to, maintenance of the following components: primary and secondary roadways, improved and unimproved surfaces, necessary and proper illumination, necessary and proper signage, and appropriate ingress and egress routes for pedestrian and emergency vehicle traffic.

Public Health Element Plan

Essential

- A basic plan to address public health elements and the potential for development of illness and/or injuries must exist for every event.
- If the event medical sector has responsibility for one or more of these categories, the public health component of the medical action plan must include protocols governing these responsibilities and strategies targeted to handle possible threats, to include reporting illness and injury accordingly if required

Desirable

- A designated event medical sector representative should collaborate with jurisdictional public health personnel prior to the event to identify potential problems and formulate potential solutions.
- A point-of-contact should be identified at the appropriate jurisdictional public health department prior to the mass gathering event.

Food Management

Essential

- Event EMS planners must determine whether jurisdictional public health has responsibility for food management and safety or this has been delegated to the event medical sector prior to the event.
- If oversight of food management and safety is delegated to the medical sector, the event operations director should seek consultation from the appropriate jurisdictional health department personnel concerning basic responsibilities and applicable statutory regulations.

Desirable

- EMS supervisory personnel should develop a basic understanding of the epidemiology of food-borne illness
- EMS supervisory personnel should understand the principles of preventing food-borne illness, acquiring a basic working knowledge of appropriate food service operations and food management practices prior to the event.
- EMS personnel should be proactive in the prevention of food-borne illness by observing food handling practices at mass gathering events and reporting lapses to the appropriate jurisdictional public health authorities.

Water Management

Essential

- Event EMS planners must determine whether jurisdictional public health or water works has responsibility for water-borne health incidents or this will be the responsibility of the medical sector prior to the event.
- If oversight of water management and/or water supply is delegated to the medical sector, the event operations director should seek consultation from the appropriate jurisdictional water authority and health department personnel concerning relevant statutory regulations.

Desirable

- EMS supervisory personnel should understand the epidemiology of water-borne illness.
- EMS supervisory personnel should understand the principles of preventing water-borne illness, acquiring a basic working knowledge of the venue's potable and non-potable water supply and associated health concerns.
- EMS personnel should be proactive in the prevention of water-borne illness by observing water management and water supply practices at mass gathering events.

Waste Management

Essential

- Event EMS planners must determine whether waste-borne health incidents will be the responsibility of the medical sector prior to the event.
- If oversight of waste management is delegated to the medical sector, the event operations director should seek consultation from the appropriate jurisdictional health department concerning relevant statutory regulations.

Desirable

- EMS supervisory personnel should understand the epidemiology of infectious illness and fauna-borne injuries (envenomations) related to improper handling of garbage.
- EMS supervisory personnel should understand the principles of preventing waste-borne illnesses and injuries from fauna attracted to waste, acquiring a basic working knowledge of the venue's waste management operations prior to the event.
- EMS personnel should be proactive in the prevention of illness related to improper handling of garbage by observing waste management practices at a mass gathering events and reporting lapses to the appropriate jurisdictional authorities.

Land Management

Essential

- Event EMS planners must determine whether land management and related public health issues are the responsibility of jurisdictional departments or the medical sector, prior to the event.
- If oversight of land management is delegated to the medical sector, the event operations director should seek consultation from the appropriate jurisdictional health department concerning relevant statutory regulations.

Desirable

- EMS supervisory personnel should understand the epidemiology of flora- and fauna-related injury.
- EMS supervisory personnel should understand the principles of land management, only as it pertains to preventing flora- and fauna-related injuries in venues (usually cross-country events) wherein this is at issue.
- EMS personnel should be proactive in the prevention of illness and injuries related to poor groundskeeping by observing land management practices at a mass gathering event, if possible, and reporting lapses to the appropriate jurisdictional authorities.

Road/Traffic Management

Essential

- Event EMS Planners must collaborate with event staff to plan for EMS vehicle ingress and egress during pre-, during-, and post-event to ensure unencumbered patient movement and staging of EMS operations vehicles.
- Event EMS planners must determine whether road management and related public safety issues are the responsibility of event security, jurisdictional law enforcement, or the medical sector prior to the event
- If oversight of road/traffic management is delegated to the medical sector, the Event EMS Coordinator must seek consultation from the appropriate event security and jurisdictional highway and traffic safety agencies concerning relevant statutory regulations

Desirable

- EMS supervisory personnel should understand the epidemiology of traffic-related injuries.
- EMS supervisory personnel should understand the principles of preventing pedestrian-vehicle traffic injuries, acquiring a basic working knowledge of anticipated road traffic management operations and concerns prior to the event.
- EMS personnel should be proactive in the prevention of these traffic-related injuries by observing road/traffic management practices and reporting lapses to the appropriate venue security and/or jurisdictional authorities.

ACCESS TO CARE

All spectators and participants at a mass gathering event must be able to access emergency medical care in a timely fashion, and event EMS must be able to access them in a time sensitive manner. The burden of responsibility falls on the event emergency medical sector to minimize the time interval for victims to correctly identify the location of their medical emergency and/or activate the event EMS system. The purpose of the access to care component of the medical action plan is to present methods by which patients can access emergency medical care at mass gathering events and to minimize barriers to access for all attendees.

Access to Care Plan

Essential

- A basic access to care plan must exist for every mass gathering event.
- The plan must address how the venue administration and the medical sector will inform the public of the location(s) and easiest access to medical care, through use of the public address system's audio and/or visual aids, and social media, well before the start of the event, and continuously, during the event, with instructions how to access medical records.
- The plan must ensure compliance of all on-site resources and facilities with all Americans with Disability Act (ADA) statutes and with pertinent local, regional and state guidelines for the physically and mentally disabled.
- The plan must address the strategic location of EMS resources to minimize the distance and time interval necessary for the patient to independently reach medical care or for event EMS to reach the patient.

Desirable

- The plan should utilize previous event research and venue reconnaissance to identify and mitigate the potential barriers which obstruct optimal access to victims during the mass gathering event.
- The plan should examine potential barriers to resources which may indirectly lead someone to become a patient, including, but not limited to, water, food, bathrooms and shelter.

Attendee/spectator Education on Access to Care

Essential

- All spectators and participants at a mass gathering event must be informed about accessibility to emergency medical care.
- Event-based audio, signage, and video instructions should be designed to instruct all attendees on how to access event social media.
- Specific audio, video, and social media messaging must be broadcast to all in attendance on the method to initiate event EMS response to the intravenue scene of an emergency medical incident.
- All emergency medical providers and treatment facilities must be easily identifiable by flags, posters, and/or signage, in languages appropriate to the event.
- EMS personnel must wear elements of a uniform identifying themselves as medical providers which is recognizable to the public-at-large (e.g. highly visible cap, command-style vest, visible identification badges,)
- Brochures distributed by the venue sponsor must contain instructions on the procedures to access emergency medical care.

Desirable

- Public address audio and video systems should be utilized to announce/display instructions to spectators in how to access emergency medical care, both at the beginning of the event and at regular intervals throughout the duration of the event.
- Event management should utilize public address audio and video systems to ensure that performers and spectators are aware of emergency medical care personnel presence and the location of fixed medical facilities throughout the duration of the event.
- Visual messaging should illustrate the identification of fixed facilities for medical care, and personnel with the following official duties: professional EMS, security, and usher.
- Coordination and collaboration of the event EMS sector with that of the security sector should incorporate camera-based spectator surveillance to locate victims more rapidly. While fixed-location cameras are the norm presently for this purpose, drones hold promise for greater accuracy and efficiency.
- Children under varying ages, dependent on state law, should be provided identification bracelets upon entry to the event.

Remote Public Access to Care

Desirable

- A secondary event venue-based dispatch center should be instituted to receive 9-1-1 calls from callers within the event venue.
- The jurisdictional 9-1-1 center should transfer all calls to this satellite dispatch center upon their discovery that a given call is originating from the event.
- All official event personnel (EMS, security, ushering, event management) must be instructed in remote communication access (radio, cell phone) to this satellite dispatch center.
- The satellite dispatch center should systematically dispatch resources to the event scene of the caller, while providing that caller with safety and medical care instructions until the arrival of event EMS at the patient's side.

EMERGENCY MEDICAL OPERATIONS

The emergency medical response operations component of the medical action plan addresses key operational details central to successful delivery of emergency medical care not otherwise covered in the document. Although emergency medical operations are detail-oriented by nature, many of the items detailed are essential to appropriate medical care at a well-planned event.

The event operations director should be responsible for the creation and the execution of the operations plan. He/she must ensure that the overall emergency medical operation has a carefully defined mission and objectives. The mission, its charter, scope, and duration should be formally documented and presented to event administration well ahead of the mass gathering event. This includes procurement of necessary resources to accomplish tasks listed throughout the document. The event medical director should be involved in the process of developing and executing the operations plan. The medical sector must also establish a collaborative coordinating relationship and lines of communication with other major factions at the mass gathering event, especially event public safety/security services.

Emergency Medical Operations Plan

Essential

- A basic emergency medical operations plan must exist for every mass gathering event. The plan should be NIMS compliant.
- Such a plan must address elements of responsibility for medical care, including but not limited to, contractual relationships, scope of medical care to be provided, anticipated duration of event medical operations and geographic limits of medical coverage (see "Negotiations for Event Medical Services").
- Such a plan must address procurement of necessary human and materials resources for emergency medical operations (see "Human Resources and Medical Equipment").
- Such a plan must address the relationship of the medical sector to other functional event sectors, including, but not limited to, security, public relations, management, venue administration, and venue logistics as well as outside sectors, including fire and rescue, public health, and emergency management (see "Communications, Command and Control and Public Health").
- Such a plan must address financial issues, including, but not limited to, overall budget, procurement, and human resource compensation.
- Such a plan must address how medical care for celebrities, VIPs, and/or high-ranking government dignitaries will be handled.
- Such a plan must address existing mutual aid plans and the procedure for activation of this system.
- Such a plan must address mass casualty incident and disaster planning, including the initial response to an act of terrorism, in consideration of the etiologies stated above.

Desirable

- The event operations and medical directors should craft a mission statement and main objectives for the delivery of emergency medical care at the mass gathering event, including non-traditional elements (such as public health issues), if applicable
- EMS personnel should be familiar with this mission statement and function to those expectations, throughout their duties.
- Such a plan should address the relationship of the medical sector to other functional areas, including, but not limited to, non-medical transportation, public relations, security operations, and non-medical human resources.

Operational Details of Medical Care

Essential

- The event operations director must have clear authority, via a contractual relationship, to supervise the operational aspects of emergency medical care delivery at the mass gathering event. (COMPARE WITH STATEMENT ON BOTTOM OF PAGE 53)
- The scope of emergency medical care to be delivered must be clearly defined and agreed upon by event administration and the event operations director prior to the mass gathering event.
- The duration of delivery of emergency medical care must be clearly defined and agreed upon by event administration and the event operations director prior to the mass gathering event.
- The geographic coverage area for emergency medical care must be clearly defined and agreed upon by event administration and the event operations director prior to the mass gathering event.
- If more than one agency is involved in the delivery of emergency medical care, a chain of command and responsibility (following NIMS/ICS structure) must be established prior to the mass gathering event, including the person/agency responsible for medical oversight of the clinical care rendered.

Desirable

- The scope of emergency medical care to be provided should balance considerations of the community standard and the reality of what resources are available to deliver care.
- EMS personnel should be dedicated to the event, and should not be responsible for responding to emergency calls outside the defined event coverage area. Procedures to notify the appropriate jurisdictional EMS provider should be enacted when a response is needed outside the event area, through event on-line medical control.
- EMS personnel should generally be on-site at a mass gathering event prior to the start of the event and remain for a period after the event concludes.

Relationship to Other Venue Disciplines

Essential

- The event operations director must establish a working relationship with responsible representatives of venue ownership and event administration.
- The event operations director must establish a working relationship with logistics.
- The event operations director must establish a working relationship with security and law enforcement officials.
- The event operations director must establish a working relationship with fire suppression.
- The event operations director must establish a working relationship with the jurisdictional public health director.
- The event operations director should establish a working relationship with public relations.

Desirable

- The event operations director should establish a working relationship with non-medical transportation and non-medical human resources.
- The event operations director should establish a working relationship with event sponsors.
- The event operations director should assist and promote the establishment of a working relationship between law enforcement/security agencies and the jurisdictional public health director.
- The event operations director should attempt to establish a relationship with medical equipment manufacturers, including those that supply prehospital equipment, for the purposes of securing donations or loans of equipment.

Financial Issues

Essential

- The event operations director and the event director (administrator) must jointly calculate an overall budget for the delivery of emergency medical care at a mass gathering event.
- Such a budget must include costs related to the procurement and deployment of medical supplies, transportation resources, human resources and on-site treatment facilities, if applicable.
- The event operations director must address the issue of human resource compensation, including, but not limited to, legal ramifications, ethical ramifications, source of payment and monetary versus non-monetary compensation.

Desirable

- Event sponsors should be responsible for as much of the reasonable costs related to delivery of emergency medical care as possible.
- EMS personnel should receive some form of compensation for their work.
- The event operations director should seek donations to help offset the costs of delivery of emergency medical care if this care is being delivered by volunteers and/or non-profit organizations.

Early CPR and Defibrillation for Cardiac Arrest Care

Essential

- The event operations and medical directors must ensure the capability of EMS personnel to respond appropriately to cases of sudden cardiac arrest in order to maximize victim's chances of survival.
- Evaluation of the event medical system's capability to render timely, CPR and early defibrillation must be based on the following factors:
    - Predicted incidence of cardiac arrest, based on previous event statistics
    - Predicted impediments to accessing victims, delays in activation of the event and jurisdictional EMS systems, and response times, based on findings from previous events and venue reconnaissance
    - Predicted frequency of bystander CPR or availability of 9-1-1 EMD-based telephone-assisted CPR instructions to callers
    - Periodic maintenance and geographic availabilities of AEDs for use by lay persons or bystanders
    - Timely availabilities of early advanced life support ACLS level care
    - Predicted transport times to definitive care
- Plans must include procedures and medical resources deployed to deliver early CPR and defibrillation to victims of sudden cardiac death within 5 minutes from the time of collapse.
- Event operations must be informed by analysis and improvement of multiple EMS system elements, based upon published studies regarding cardiac arrest and prehospital response.

Evaluation, Care, and Disposition of Impaired Attendees

Essential

- The event operational plan must include procedures to safely contain and restrain attendees who are identified as disruptive to the event, assaultive to other attendees, and/or harmful to themselves. They must be restrained physically for their safety and that of other attendees.
- Should information be obtained, through personal observation by official staff or by report from other attendees, that disruptive individuals are impaired mentally or physically, such individuals must be escorted by event security personnel to a dedicated safe and secure area (precinct, first aid station, holding area) for initial evaluation by event EMS caregivers.
- The outcome of this initial evaluation and response to any stabilizing emergency medical interventions must be reported to event security and/or operations, with recommendations for one of the following dispositions:
    - Further on-site medical observation, follow-up evaluation, and care, appropriate to the venue environment
    - Immediate EMS transport to an appropriate emergency department
    - Release of the non-emergent patient to a guardian who is present, able to assume custodial care, and willing to sign an impaired person release form confirming assumption of care
    - Release of the patient to law enforcement
    - Release of the non-emergent patient to their independent status, only if a normal or baseline mental status and ambulatory status are confirmed.
- Strict event EMS documentation of the foregoing steps must be executed, according to guidelines which are designed and approved by the event operations and medical directors.

VIP Care and Dignitary Protection

Essential

- The event operations director must ascertain, to the extent possible, whether any VIP (as designated by event management), dignitary or high-ranking government official will attend the mass gathering event.
- The event operations director must work jointly with event administration, law enforcement and other security and venue personnel to develop contingency plans for the care of any VIPs and dignitaries who may become ill or injured at the mass gathering event.
- The event operations director must work jointly with event management, security, law enforcement and other venue personnel to ensure that operational details of VIP/dignitary event attendance and their possible emergency medical care address security concerns and do not adversely impact the emergency medical care of other patients (the general spectator sector) at a mass gathering event.

Desirable

- A separate treatment area should be designated for VIPs and dignitaries, both to protect their privacy and to avoid crowd interference with the patient care of other spectators or performers.
- The event medical director should request pertinent background medical information on any VIPs and/or dignitaries who may be in attendance and have a previous medical history that would impact emergency medical care.
- The event medical director should designate a treatment team for VIPs and/or dignitaries, composed of the minimum number of qualified and experienced personnel needed and equipped to handle both routine and life-threatening emergencies.

Mutual Aid

Essential

- The event operations and medical directors must collaborate with the jurisdictional EMS providers to ensure that a realistic event surge plan exists that includes specific procedures for requesting mutual aid.

Desirable

- EMS agencies/personnel that may be requested for mutual aid should be aware of the mass gathering event and the possibility that their services may be requested.
- All of the jurisdictional EMS mutual aid units that respond should be provided with maps of the venue site indicating access routes and locations of on-site treatment facilities.
- Jurisdictional EMS mutual aid units should be informed of the radio communications system and the frequencies in use at the event. , The capability of contacting event EMS medical direction and operations management should be tested prior to the event.
- Jurisdictional EMS mutual aid unit crews should be familiar with the command/control structure and event reporting relationships agreed upon and disseminated during planning.

MASS CASUALTY INCIDENT (MCI) AND DISASTER PLANNING

The event operations director must be prepared for the possibility of unusual circumstances, such as mass casualty incidents, and a multitude of disaster scenarios, which includes the real possibility of terrorism by ballistic, nuclear, biological, or chemical attack. No expectations should be made that a complex terrorism response plan will be created for every event solely by the medical sector. However, the event operations and medical directors should participate in multi-agency contingency planning for such scenarios and to educate all EMS personnel about the risks and initial response to these occurrences.

Essential

- The event operations and medical directors must plan for the possibility of an MCI or disaster during mass gathering events.
- Such planning should specifically address the most likely types of disasters at mass gatherings, e.g., environmental (weather) disasters, technological disasters, and man-made disasters.
- EMS personnel must be aware of the procedures regarding disaster operations, including medical protocols and other operational guidelines.
- All medical personnel must be assigned contingent MCI roles prior to the beginning of the event.
- MCI roles should be based upon the jurisdictional emergency management agency's MCI plan, and be consistent with the National Incident Management System (NIMS) and Incident Command System.

Desirable

- An MCI/disaster trailer should be on-site or immediately available for large scale mass gathering events, those in which patient volume is expected to be excessive, or those designated as National Security Special Events by the United States Department of Homeland Security.
- Triage tags for both event and jurisdictional EMS should be uniform in design, distributed to, and centrally located at the venue site if not already carried by all field EMS personnel.

Hazardous Materials and Weapons of Mass Destruction Response

Essential

- EMS personnel must be briefed about potential hazardous materials that exist at or near the venue site.
- The event operations director must maintain close contact with security officials so that he/she may be alerted to any possibility or threat of terrorism as early as possible.
- For reasons of secure communications, a law enforcement or security official dedicated to the event should be designated to communicate any official event requests for jurisdictional resources to be activated at the event, when event organizers, venue managers, and EMS officials agree that event-dedicated response resources are overwhelmed, with regard to handling an MCI.

Desirable

- The event operations director must have completed a NIMS Hazardous Materials Awareness course or equivalent training within the last three years.
- The event operations director should have additional hazardous materials experience or training to the Hazardous Materials Operations level.
- The event operations director and/or medical director should have completed a course in the medical aspects of terrorism victimization within the last three years.
- Hazardous Materials mitigation capability should be on-site or immediately available to the event for high profile mass gathering events and those in which threats considered credible by jurisdictional law enforcement have been received.
- The event operations director should consider the distribution of gas masks and cholinergic antidote (e.g. Duodote) kits to all EMS personnel at major mass gathering events, especially those in large cities, those that draw VIPs and dignitaries, and those that jurisdictional, state, or federal law enforcement experts consider to be at high risk for terrorist attack.

COMMUNICATIONS

Efficient information transmission is crucial to the successful coordinated delivery of emergency medical care at a mass gathering event. Information flow is reliant upon a communications system, which utilizes communications hardware and protocols to link patients with patient care providers through a centralized hub, or command post. (For a discussion of command post issues, see the "Command and Control" section.) The communications component of a medical action plan must describe the design and operation of the communications system to achieve transmission of information pertinent to medical care and related issues. Since a properly functioning communications system is absolutely necessary for the delivery of event emergency medical care, the event operations and medical directors must collaborate in the design and testing of the system to ensure its effectiveness and reliability.

Communications hardware may include a base station and portable radios, scanners, repeaters and transmission equipment. The exact configuration of the system, including type and number of radios needed, will be unique to each event and may largely depend on how the local public safety system is currently functioning. Vendors may need to be contacted to supply additional radios or to lease frequencies for larger events and/or those in which there is inadequate communications coverage without the augmentation.

A variety of redundant communication links must be established during a mass gathering event. Event organizers may need to communicate important and time-sensitive information to medical personnel and vice versa. Such links are necessary between the command post and event EMS personnel, including crews of transport vehicles, staff of acute care facilities, and the local public safety answering point (PSAP).

Communications Plan

Essential

- A basic medical communications plan must exist for every mass gathering event.
- Such a plan must address number, type and functionalities of equipment necessary and available.
- Such a plan must include the designated radio frequencies, cell numbers, and other contact information of supervisory medical personnel.
- Such a plan must be reviewed and approved by local officials to ensure that it reflects compatibility with communications protocols of jurisdictional emergency services.
- Such a plan must identify the command post by an acronym (i.e. "Medical Command") and authorize its function as the lead communications entity for the mass gathering event.
- A system of communications must be designed to ensure that non-medical personnel, such as ushers, know how to alert medical personnel to the presence of a medical emergency.
- Communications protocols must be designed for use by all personnel equipped with radios.

- All communications protocols must include rules of etiquette which maximize efficiency and minimize interference of vital transmissions.
- Communications protocols must be reviewed with all event medical personnel prior to the event.

Desirable

- Radio frequency designations should be allocated to the event EMS command post and transportation resources to enable accurate identification.
- Redundant communications technology should be utilized to avoid system failure.

Equipment

Essential

- Sufficient reserve equipment must be available to prevent communications failures from disrupting event emergency medical care.
- Communications equipment should be tested prior to the mass gathering event to ensure effectiveness.

Desirable

- EMS personnel should be involved in the design of a medical communications system and acquisition of necessary communications equipment.
- Shoulder-mounted speaker microphones should be available for EMS personnel roaming on foot or in crowds.
- Headsets should be available for EMS personnel who are operating in loud environments.

Personnel and Their Responsibilities

Essential

- The event operations director must designate a communications manager for the event.
- The event operations director or a designated communications manager must ensure that the following actions are accomplished prior to the event:
    - Procure, test and distribute all radio equipment
    - Procure, test and maintain radio and/or battery chargers
    - Construct, test and maintain on-site landline and/or cellular phone connections
    - Ensure functional communication links (see below)

Communications Links

Essential

- The event's command post ("Medical Command") personnel, consisting of the event medical and operations directors, must be able to communicate with the following resources/personnel by either radio, cell phone and/or landline:
    - Venue administrators (Security, Facility Maintenance, Public Address System)
    - Event manager(s)
    - Intravenue EMS personnel (roving)
    - Intravenue EMS personnel at fixed medical facilities
    - Ambulance crews in units dedicated to the event
    - Non-medical personnel assisting with medical reconnaissance ("spotters")
    - Public safety answering point (PSAP) and emergency operations center (EOC) personnel for the jurisdiction in which the event is being held
    - Director of the multiple casualty incident (MCI) plan for the jurisdiction (emergency management agency)
    - Department of public health director for the jurisdiction
    - Emergency department directors of acute care (destination) institutions to which patients are likely to be transported
    - Communications capability must exist between roving, venue-based EMS providers and EMS event-dedicated ambulance crews only through the event medical director for purposes of accountable coordination of care.

Emergency and non-emergency transportation resource crews must have continual communication capability with the event EMS command post personnel, when on- and off-site.

COMMAND and CONTROL

The purpose of the command and control component of a medical action plan is to function as the organizational structure leadership from which guidance of the provision of emergency medical care at a mass gathering event occurs. This section of the plan must show clear lines of authority and responsibility linking each medical position. It must also delineate the integration of medical oversight into the overall administrative leadership structure of the event. The National Incident Management System should be utilized for this purpose.

At the heart of every mass gathering command and control plan is the command post, which functions as the centralized hub for communicating command and control of all event resources and personnel. Its physical structure can be as simple as an individual sitting at a table or as highly evolved as a dedicated custom-built emergency command vehicle. Medical control is an integral component of the event command post.

Every mass gathering event must have a functional director of EMS operations. With the exception of the event medical director, who must be appointed for every event, the exact number and type of other EMS administrative and operational positions will largely depend on local preference and current event needs, determined from sound previous event reconnaissance. The degree of experience of event medical leadership can enhance the planning considerably.

Command and Control Plan

Essential

- A basic command and control plan must exist for every mass gathering event.
- The command and control plan must designate essential EMS administrative personnel for the event.
- The command and control planning must include designated essential EMS administrative, operations, and medical care leaders.
- The command and control plan must include an organizational structure with a list of task assignments for each position, the number of personnel filling these positions and reporting relationships.
- The command and control plan must outline the responsibilities of medical oversight and include threat and contingency information as part of an operational briefing .

Desirable

- Appointments for command and control assignments should follow the structure of the Incident Command System within the National Incident Management System.
- When the mass gathering event will involve multiple public safety services or EMS systems, the unified command model should be invoked in the planning.

Command Post

Essential

- The location of the command post and its contact telephone number(s) and/or radio identifier(s) must be clearly known and rapidly identifiable to all EMS personnel, be it stationary, with a secondary contingent site, or mobile (preferred).
- The command post must be staffed continuously from a predesignated time prior to the event to a predesignated time following the event.
- The command post must be staffed by at least one individual at all times.
- The administrative and medical functions within the command post must be separate from other operations if a unified command post concept is utilized.

Desirable

- The command post should be clearly marked and highly visible.
- The command post should remain in a fixed location, if possible.
- The command post should be a physical entity, rather than an individual, if possible.
- The command post should include leadership representatives of the following services:
    - Event management
    - Event/venue security
    - Venue maintenance
    - Venue or event public relations/affairs, to include the public address system functions
    - Event logistics
    - Event EMS medical care and operations
- The Command Post should monitor and update important information , such as acute care facility closure and its diversion status, and relay such information to appropriate parties during events that are capable of generating large volumes of patients.

EMS Administrative Positions

Essential

- An event operations director must be appointed for every mass gathering event.
- The event operations director must be a certified/licensed EMS provider in the state in which the event is being held, unless event medical planners have official government-approved waivers of such requirements.

Desirable

- The event operations director should have previous mass gathering medical care experience.
- Other EMS administrative positions may need to be designated based on event characteristics or local EMS practices.

EMS Operations Positions

Essential

- A designated event operations director must be appointed for every mass gathering event
- A designated event operations director must be on-site for every mass gathering event

Desirable

- The event operations director or his/her designee should be on-site for every mass gathering event
- Other EMS operations positions may need to be designated based on the unique features of a particular event or local EMS practices

DOCUMENTATION

The purpose of the medical documentation component of the medical action plan is to ensure a uniform, complete, confidential approach to record keeping. The patient care record is a legal as well as a medical document. A clear strategy for medical documentation is required. Proper evaluation and interpretation of statistics should contribute to a more objective approach to planning for medical needs at future mass gathering events of similar nature.

The cornerstone of a documentation plan is the patient care report (PCR). Such a report is essential to record patient complaint and treatments rendered. The style and complexity of mass gathering medical care documentation is highly variable around the country but must conform both to local/state regulations and to general medicolegal principles. Exactly what defines a patient and patient encounter must be determined prior to the event. All patient contacts must be documented in some form, preferably one that is uniform throughout the venue. Special circumstances, such as the unaccompanied minor, the patient with minor complaints or needs and the patient who refuses care or leaves the medical sector prior to the completion of treatment, must be addressed from a documentation standpoint as well as a medicolegal one.

Documentation Plan

Essential

- A basic medical documentation plan must exist for every mass gathering event.
- Such a plan must address how patient contacts will be recorded.
- Such a plan must address the type, complexity and methodology of patient care documentation.
- Such a plan must address how the data path of patient care documentation will be mapped: collection, storage, collation, and analysis, following the conclusion of the mass gathering event.
- All local, regional, state, and federal regulations regarding medical care documentation must be followed.

Desirable

- A unique event PCR form should be developed prior to the event.
- If a unique event PCR form is not developed, the local EMS patient care record should be utilized or adapted for every patient contact.
- Accurate records should be kept concerning response times to the patient's side, on-scene time for patient retrieval/extrication, and transport times to definitive care, supplies utilized, major decision-making and its outcome, and any problems encountered.
- A uniform approach to the categorization and documentation of patient complaints should be designed prior to the event.

- Prior to the event, EMS personnel should be educated in the chosen, standardized format and method of documentation.
- Consider delegating the duties of scribe to ancillary personnel assigned to on-site treatment facilities.

Patient Care Documentation

Essential

- All patient contacts must be documented.
- Minimal essential elements for patient documentation include basic demographic information, location of incident, chief complaint/symptoms, focused history and physical exam, treatment and final disposition.
- Patients who refuse evaluation and/or care and/or transport against medical advice (AMA) must be informed of the risks of doing so and should sign a statement attesting to their actions, or documentation must be performed by EMS that the patient refused to sign, in testimony to the foregoing.
- Special arrangements and administrative processes must be designed and set in place for the care refusal/AMA of minors and patients with mental impairment, and these processes must be designed and implemented in conjunction with venue/event security.
- Receiving hospitals must be provided with a copy of the patient care documentation, and if possible, in a time frame corresponding to the patient's stay in the destination facility.

Desirable

- A "patient contact" should be defined prior to the mass gathering event.
- Any person who receives medical care, advice or supplies from a medical professional at a mass gathering event should be considered a patient, and the interaction of event EMS personnel with them, considered a "patient contact".
- Documentation should be performed on the status of parent contact whenever minors present as patients.
- Documentation should be performed on patients who present more than once for emergency medical treatment, especially for similar complaints.
- When treatment facilities become overwhelmed by patients, requests for assistance and/or mutual aid should be documented.

CONTINUOUS QUALITY IMPROVEMENT

The purpose of the continuous quality improvement (CQI) component of the medical action plan is to ensure that the delivery of mass gathering medical care is constantly improving through analysis of medical sector performance. This can be accomplished in several ways, including patient care report review, structured critique of selected incidents and review of notes and other data relating to EMS system performance at the mass gathering event. A proactive, prospective medical CQI plan is an important element of risk management for the event administration and venue owner.

Continuous Quality Improvement Plan

Essential

- A basic CQI plan must exist for every mass gathering event.
- Such a plan must address how information on the delivery of mass gathering medical care at this event will be used to improve medical care and planning for future events of a similar nature.
- Such a plan must address how event data will be collected.
- Such a plan must delineate who is responsible for "real time" event data collection.
- The definition of a patient encounter for documentation purposes must be finalized prior to the event.

Desirable

- An event debriefing should be held within a reasonable timeframe after the conclusion of the mass gathering event.
- Such a debriefing should be structured and conducted in a positive fashion so that i emphasizes education and improvement, and not incrimination or punishment.
- A list of recommendations and conclusions regarding the mass gathering medical care at the event should be generated and distributed to all parties concerned within a reasonable timeframe after the conclusion of the mass gathering event.

Event Data Collection and Analysis

Essential

- The event operations director must ensure that basic facts, data, and figures concerning the delivery of medical care and patient volume at the event are recorded and/or obtained for appropriate analysis.
- A confidential medical record form designed and approved under the guidance of the event operations and medical directors must include the following items:
    - Encounter date
    - Encounter time
    - Patient name
    - Patient sex
    - Patient age
    - Chief complaint
    - Pertinent medical history
    - Drug allergies
    - History of present illness/symptoms
    - Pertinent physical exam findings
    - Diagnostic impression
    - Treatment
    - Disposition

Desirable

- Event data analysis should be undertaken jointly by the event medical and operations directors within a reasonable timeframe after the conclusion of the mass gathering event.
- Selected patient care reports, including incidents of critical illness and non-transports, should be reviewed by the event operations and medical directors within a reasonable timeframe after the conclusion of the mass gathering event.
- EMS supervisory personnel on-site should be encouraged to record ongoing notes concerning medical sector performance and issues for future consideration that will lead to performance enhancements.
- Venue administration should be encouraged to supply necessary information and statistics.

Appendix 1 - Medical Equipment-Basic

Essential

- Basic diagnostic and therapeutic equipment must be immediately available for both adult and pediatric patients
- The following items are considered essential elements of this equipment cache:
  - Airway adjuncts
    - Nasopharyngeal (adult and pediatric sizes)
    - Oropharyngeal (adult and pediatric sizes)
  - Alcohol swabs
  - Bag-valve masks (adult and pediatric sizes)
  - Backboards, rigid
  - Bandages, elastic
  - Bandages, triangular
  - Band-aids®
  - Cervical collars, rigid (adult and pediatric sizes)
  - Cold packs, disposable
  - Defibrillator, automated
  - Gauze pads (multiple sizes)
  - Gloves, latex, nonsterile (multiple sizes)
  - Gloves, not latex, nonsterile (multiple sizes)
  - Hot packs, disposable (seasonal)
  - Kling® (multiple sizes)
  - Obstetric pack
  - Oxygen delivery devices (nasal cannula, nonrebreather)
  - Pulse oximetry
  - Restraints, soft
  - Shears, trauma-style
  - Sling and swath
  - Splints (finger, wrist, forearm, lower extremity, traction)
  - Stethoscope
  - Sphygmomanometer
  - Suction device, portable (with charger, if necessary)
  - Suction supplies (catheters, disposable bags, etc.)

- Tape, adhesive (multiple sizes)
- Tongue blades
- Tourniquets, Arterial

- The event medical director must decide whether or not EMT-assisted medications and any medical equipment specific to the event will be included in the cache for use at the mass gathering event

Desirable

- Patient comfort items should be available and include urinals, bedpans, facial tissues, feminine hygiene products, sunscreen, lip balm, and other similar products

Appendix 2 - Medical Equipment-Advanced

Essential

- If advanced life support level of care is to be available, appropriate diagnostic and therapeutic equipment must be immediately available that is within the State scope of practice for both adult and pediatric patients
- The following items are considered essential elements of this equipment cache:
  - At least two types of invasive airway devices (King, LMA, I-Gel, Endotracheal Tube) of assorted sizes, with at least one type, a Blind Insertion Airway Device
  - Blood glucose test strips and meter
  - Cardiac monitor with manual defibrillator and external pacemaker
  - Needle cricothyrotomy kit or supplies
  - Devices to confirm intubation (colorimetric CO_2 detector or esophageal detector device)
  - Intravenous access devices and tubing
  - Laryngoscopes with assorted blades and Magill forceps
  - Pulse oximeter
  - Razors
  - Needle thoracostomy kit or supplies
- Medical equipment not commonly used within local EMS practice must be approved by the event medical director prior to the event

Desirable

- Whenever possible, duplicate sets of ALS equipment should be available
- The following items are considered desirable elements of this equipment cache:
  - 12-lead EKG capability
  - Airway device aids: Lighted stylet, video laryngoscope
  - Automated blood pressure monitor
  - Automated ventilators for prehospital use
  - pediatric length or aged based dosing chart or device
  - End tidal CO_2 monitor
  - Intravenous fluid infuser (disposable or automated)

Appendix 3 - Pharmaceuticals

Essential

- If advanced life support level of care is available, a standard ALS pharmaceutical regimen must be immediately available
- Such a regimen shall include the following commonly used prehospital medications:
  - ACLS medications
    - Adenosine
    - Atropine
    - Amiodarone
    - Calcium chloride
    - Calcium channel blocker (if approved by local protocol)
    - Dopamine (pre-mixed bag preferred)
    - Epinephrine 1:10,000 concentration
    - Lidocaine
    - Sodium bicarbonate
  - Analgesics
    - Aspirin (use for ischemic chest pain may be allowed by local protocol)
    - Narcotic for parenteral administration
  - Anaphylaxis medications
    - Antihistamine for parenteral administration
    - Epinephrine, 1:1000 concentration
  - Anti-epileptics
    - Benzodiazepine for parenteral administration
  - Asthma medications
    - Beta agonist for nebulization
    - Steroid preparation
      (parenteral agent preferred; use may be allowed by local protocol)
    - Continuous Positive Airway Pressure (CPAP) device
  - Cardiac medications
    - Nitroglycerine, sublingual (tablets or spray)
  - Diabetic medications
    - Dextrose, as recommended by local guidelines/protocols
    - Glucagon

- Intravenous solutions
  - Crystalloid solutions
- Naloxone
- Pharmaceuticals not commonly used within local EMS practice must be pre-approved by the Event EMS Medical Director

Desirable

- Pre-filled syringes for commonly used pediatric medications should be available

Appendix 4 - Non-Medical Equipment

Essential

- Hospital-type exam tables, beds and/or stretchers/cots
- Sheets
- Blankets
- Dedicated and properly marked hazardous waste receptacles
- Non-hazardous waste receptacles
- Spare batteries for battery-powered devices
- Pens
- Paper
- Patient care documentation forms

Desirable

- Chairs for medical personnel
- Bathroom with sink and toilet dedicated to the medical sector and/or treatment facility
- Linen disposal or recycle bin
- Pillows
- Towels
- Diapers
- Patient identification bracelets
- Safety pins
- Refrigerator (essential item if for pharmaceuticals requiring cold-chain storage)

Appendix 5 - Fixed Treatment Facility Medical Equipment (physician-level care)

Desirable

- Benzoin
- Betadine or antiseptic solution
- Burn dressings
- Cotton applicators and balls
- Skin adhesive wound closure material or equivalent
- Eye examination equipment (fluorescein dye strips, Woods lamp)
- Eye patches
- Chest tubes, chest tube trays and pleurevacs
- IV poles
- IV pumps
- Nasogastric tubes
- Ophthalmoscope
- Otoscope
- Prescription pads
- Ring cutters
- Splinting supplies
- Steri-strips®
- Suture kits and suture material
- Thermometers
- Vaseline® gauze

Appendix 6 - Fixed Treatment Facility Pharmaceuticals (physician-level care)

Desirable

- The following items are considered desirable elements of this pharmaceutical cache:
  - Analgesics
  - Anesthetics, local
  - Antacids
  - Antibiotics
    - Intravenous agents
    - Ointment
    - Oral agents
  - Antidiarrheal agents
  - Antiemetic (parenteral and/or suppositories)
  - Anti-epileptics
  - Airway management agents for rapid sequence induction
    - Induction agents
    - Paralytic agents
  - Asthma medications
    - Steroid preparation (parenteral agent preferred; EMS use may be allowed by local protocol)
  - Burn medications
    - Silver sulfadiazine cream
    - Xeroform® gauze
  - Cardiac medications
    - Beta blockers (parenteral)
    - Calcium channel blockers (parenteral)
  - Diabetic medications
    - Insulin, regular
  - Intravenous solutions
    - $D_5$0.9NS
    - $D_5$0.45NS

- Ophthalmic agents and equipment
  - Woods Lamp
  - Anesthetic
  - Antibiotic ointment
  - Fluorescein strips
  - Irrigating solution
  - Mydriatic agent