Emergency Medical Services (EMS) Surge Planning Template and Toolbox for Mass Casualty Incidents (MCI) in Virginia

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Virginia
OFFICE OF EMERGENCY MEDICAL SERVICES

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment
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Introduction

This planning tool is not meant to take the place of your jurisdiction, agency, region's Mass Casualty Incident (MCI) plan or planning. It is intended to be a supplement to planning that is already taking place in those venues and should be integrated into those plans. It is the committee's hope that this document will assist you as you consider how and where you will obtain enough resources to address any MCI efficiently and effectively, doing "the greatest good for the most people".

The HRSA Working Group Committee 2005-2007

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Preface

A comprehensive statewide approach to incident response, understood and used by all responding jurisdictions, would further improve the effectiveness of emergency responders during a disaster or emergency that causes a Mass Causality Incident (MCI). Emergency Medical Services effectiveness hinges on the enhancement of statewide mutual aid planning for the deployment of EMS units into jurisdictions or regions they do not normally cover in response to a mass casualty incident, including events caused by the spread of acute infectious disease (especially smallpox, anthrax, plague, tularemia and influenza), acute botulinum intoxication or chemical poisoning, trauma or burns, or radiation-induced injury. This includes comprehensive planning for the use of these resources to accomplish objectives in triage, transport and tracking of patients.

Concept of Operations

EMS resources work independently in their respective jurisdictions on a day-to-day basis. However; during a terrorism event or any large scale MCI, jurisdictional resources could become quickly overwhelmed and they would need to start drawing from other resources available based on mutual aid and other agreements. This model addresses the use of resources outside the "normal" scope of mutual aid.

Scope

Local planning will ensure the capability for jurisdictions/regions to provide EMS triage, treatment, and transport for a ratio of at least 500 patients per million population within a 3 hour window. Actual numbers may be adjusted based on population but ratios should stay the same. In addition, for metropolitan areas or other regions of the state for which predictable high-risk scenarios have been identified, the plan must describe a mechanism for transporting patients from an incident scene or from local hospitals to healthcare facilities in adjacent jurisdictions, to temporary healthcare facilities within or near the affected jurisdictions, and to nearby airports or rail stations for transport to more distant healthcare facilities.

Planning Assumptions

- There will be little to no prior notice of the event
- Patients will need to be triaged, treated and transported within 3 hours
- Local resources will be overwhelmed immediately
- The closest hospitals to the incident will be inundated with self-referral (walk-in) patients
- Regional Healthcare Coordination Centers (RHCC) will at some point become operational
- All local mutual aid agreements have been activated and need for response has overwhelmed this capability.

- Up to 10% of an agency or jurisdiction's EMS workforce may not be available due to sickness, vacations, or other reasons for absenteeism.
- Mutual aid resources will be limited to 20% of any existing regional resources
- Response time is limited
- 15% of all treatable patients will be red, 25% will be yellow, and 60% will be green
- Patients are not contaminated or have successfully be decontaminated at the scene
- There will be a local disaster declaration and eventually a State Disaster declaration
- The event has not impacted the statewide or local transportation infrastructure
- Incident Command is functioning

Additional Assumptions

- Independent jurisdictions and organizations make formal and informal agreements with surrounding area resources for mutual aid on a regular basis
- All paid services have been considered in planning
- Plans will be designed to promote wise use of resources and address scenarios where normal and customary agreements are exhausted and will not take away from those agreements
- State EMS Task Forces may not be the best or most expedient resource for the job
- Final plans will demonstrate compliance with the minimal level of readiness for any event
- EMS resources will not be able to handle the entire transport need of the incident
- Resources in every jurisdiction across the Commonwealth may be at some time asked to assist in a MCI involving terrorism, bioterrorism, or large scale natural disaster
- Localities and agencies will consider all transportation agencies within their jurisdiction or region including paid EMS transport, school transportation, charter, and municipal mass transit in their planning process

Surge Planning Considerations

- Logistics
    - Resources – Typing and Ordering
        - What type is coming and what is needed
        - Ordering additional units
        - Status (Tracking)
    - Medical supplies and drugs
        - Are vaccines and immunization shots needed
            - Protocols
    - Fuel and vehicle mechanical support
    - Additional Transportation
        - vs. Local EMS Ambulance Transport

- Regional/State Mutual Aid Agreements
- Busses
- Contract Providers
- Other

    - Responder Rehab
        - Work/rest periods
        - Hydration
        - Nutrition

- Safety
    - Responder
        - BSI
        - Scene
        - Accountability
    - Patient
        - "Greatest good for the greatest number"
        - "Do no harm" principle
        - Accountability
- Coordination
    - Clearly identified roles for incoming personnel
        - Incident Command
    - Clear definitions of those roles
        - Clear decision-making authority
        - Structure expands or contracts based on the size of the incident. At a small incident the Medical Group Supervisor may work directly for the Incident Commander. In a large incident he may work for the Operations Section Chief or even possibly for a Branch Chief within Operations.
    - Pre-defined staging areas for resources responding
    - Patient tracking mechanisms in place from incident site to hospital and are readily accessible
        - Prehospital Patient Care Reports (PPCR)
        - Triage Tags
        - Computer Aided Tracking
    - Timeframe for declaring local emergency and triggers for requesting assistance outside of normal response channels including request for state assistance based on response needs
    - Planning in place for meeting local EMS needs outside of MCI response
    - Identification of number and type of vehicles need per color coded injury (red, yellow, or green)
    - Written agreements (MOA/MOU)from all responders on what on-duty resources are available and can be sent for immediate response (in addition to EMS consider agreements with public transportation, school systems, local emergency operations centers (EOC) and military bases, as appropriate)
        - Exercise and update agreements at least yearly

    - Printed directions to hospitals for responding resources
    - RHCC – EMS liaison
    - Pre-determined landing zones for requested medevac helicopters
        - Known by responders
        - Known by dispatcher
        - Know by responding helicopters or easily accessible
- Finance
    - Agreements (if any) for replacing supplies/payment of services
    - Liability coverage for personnel and equipment
- Credentialing
    - What resources you will accept (consider liability, federal resource typing)
        - Use of FEMA credentialing criteria??
        - Other methods of considering credentials
    - How to verify
- Legal Considerations
    - Liability
    - Immunity
    - Worker's Compensation
    - Dispute resolution
        - Financial
        - Other
- Communication - Interoperability
    - Methods for communicating with
        - Resources responding from out of area
        - Hospitals and non-local resources
        - Other

Mutual Aid Planning Considerations

- A coordinated approach to the process involving all possible organizations taking into account local needs and resources of all organizations entering into the agreement is necessary
- Plans and agreements must be written taking into account geography, demographics, medical resources, emergency response personnel and equipment, hazards, and unique local needs
- Daily mutual aid availability may vary by day, time, or season.
- Remember to include agreements with private agencies in the same response area
- Consider the need for routine EMS response to continue during a MCI or surge event
- Consider what non-EMS agencies in your area could be written into your plan
- Address command needs of all agencies
- Include a comprehensive system for mobilization and deployment of personnel and equipment

- Include mandatory safety considerations for all participating agencies and personnel
- Develop plans for on-scene administration
- Address liability and compensation issues up front in initial agreements
- Provide for incident critique and plan review and post-incident critical stress management

EMS Mutual Aid and Surge Tool Box List– (Annexes)

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Annex I
National Incident Management System (NIMS) Terms

GLOSSARY OF TERMS AND ACRONYMS

For the purposes of NIMS, the following terms and definitions apply:

Agency: A division of government with a specific function offering a particular kind of assistance. In ICS, agencies are defined either as jurisdictional (having statutory responsibility for incident management) or as assisting or cooperating (providing resources or other assistance).

Agency Representative: A person assigned by a primary, assisting, or cooperating Federal, State, local, or tribal government agency or private entity that has been delegated authority to make decisions affecting that agency's or organization's participation in incident management activities following appropriate consultation with the leadership of that agency.

Area Command (Unified Area Command): An organization established (1) to oversee the management of multiple incidents that are each being handled by an ICS organization or (2) to oversee the management of large or multiple incidents to which several Incident Management Teams have been assigned. Area Command has the responsibility to set overall strategy and priorities, allocate critical resources according to priorities, ensure that incidents are properly managed, and ensure that objectives are met and strategies followed. Area Command becomes Unified Area Command when incidents are multi-jurisdictional. Area Command may be established at an emergency operations center facility or at some location other than an incident command post.

Assignments: Tasks given to resources to perform within a given operational period that are based on operational objectives defined in the IAP.

Assisting Agency: An agency or organization providing personnel, services or other resources to the agency with direct responsibility for incident management

Available Resources: Resources assigned to an incident, checked in, and available for a mission assignment, normally located in a Staging Area.

Chain of Command: A series of command, control, executive, or management positions in hierarchical order of authority.

Emergency: Any unplanned event that interrupts the daily function of the jurisdiction and requires an emergency response.

Emergency Operations Plan (EOP): The "steady-state" plan maintained by various jurisdictional levels for responding to a wide variety of potential hazards. Emergency

Public Information: Information that is disseminated primarily in anticipation of an emergency or during an emergency. In addition to providing situational information to the public, it also frequently provides directive actions required to be taken by the general public.

Emergency Management Assistance Compact (EMAC): An agreement between *all* states for mutual aid so that needed resources are obtained, transported and utilized during a disaster.

Emergency Operation Center (EOC): A facility from which local government officials exercise direction and control in an emergency or disaster.

Emergency Support Functions (ESF): Various state agencies may be requested or mandated to participate in disaster related activities, responses or support.

Exercise: An activity designed to promote emergency preparedness; test or evaluate emergency operations plans, procedures, or facilities; train personnel in emergency response duties; and demonstrate operational capability.

Federal Response Plan (FRP): The Federal plan developed under Public Law 93-288 (Stafford Act) in order to facilitate the delivery of all types of Federal Response Assistance to States to help them deal with the consequence of significant disasters. Any response provided will supplement state and local response efforts. Requests for Federal assistance will be made by the State after an assessment of state and local ability to respond to the specific disaster.

HSPD-5: Homeland Security Presidential Directive-5

Incident Command System (ICS): A standardized on-scene emergency management construct specifically designed to provide for the adoption of an integrated organizational structure that reflects the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. ICS is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, designed to aid in the management of resources during incidents. It is used for all kinds of emergencies and is applicable to small as well as large and complex incidents. ICS is used by various jurisdictions and functional agencies, both public and private, to organize field-level incident management operations.

JIC: Joint Information Center - A facility established to coordinate all incident-related public information activities. It is the central point of contact for all news media at the scene of the incident. Public information officials from all participating agencies should collocate at the JIC.

Liaison: A form of communication for establishing and maintaining mutual understanding and cooperation.

Major Disaster: As defined under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5122), a major disaster is any natural catastrophe (including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of States, tribes, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.

NIMS – National Incident Management System: A comprehensive, national approach to incident management includes the Incident Command System, multi-agency Coordination systems, and Public Information systems and must be adopted by all jurisdictions to be compliant for DHS grants and awards.

NRP: National Response Plan - A plan mandated by HSPD-5 that integrates Federal domestic prevention, preparedness, response, and recovery plans into one all-discipline, all-hazards plan.

PIO: Public Information Officer

Planning Meeting: A meeting held as needed prior to and throughout the duration of an incident to select specific strategies and tactics for incident control operations and for service and support planning. For larger incidents, the planning meeting is a major element in the development of the Incident Action Plan (IAP).

Preparedness: The range of deliberate, critical tasks and activities necessary to build, sustain, and improve the operational capability to prevent, protect against, respond to, and recover from domestic incidents. Preparedness is a continuous process. Preparedness involves efforts at all levels of government and between government and private-sector and nongovernmental organizations to identify threats, determine vulnerabilities, and identify required resources. Within the NIMS, preparedness is operationally focused on establishing guidelines, protocols, and standards for planning, training and exercises, personnel qualification and certification, equipment certification, and publication management.

Recovery: The development, coordination, and execution of service- and site-restoration plans; the reconstitution of government operations and services; individual, private sector, nongovernmental, and public-assistance programs to provide housing and to promote restoration; long-term care and treatment of affected persons; additional measures for social, political, environmental, and economic restoration; evaluation of the incident to identify lessons learned; post incident reporting; and development of initiatives to mitigate the effects of future incidents.

Resources: Personnel and major items of equipment, supplies, and facilities available or potentially available for assignment to incident operations and for which status is maintained. Resources are described by kind and type and may be used in operational support or supervisory capacities at an incident or at an EOC.

Resource Management: Efficient incident management requires a system for identifying available resources at all jurisdictional levels to enable timely and unimpeded access to resources needed to prepare for, respond to, or recover from an incident. Resource management under the NIMS includes mutual-aid agreements; the use of special Federal, State, local, and tribal teams; and resource mobilization protocols.

SOP: Standard Operating Procedures, a list of specific or detailed actions, methods or skills used to accomplish a specific task or job; also known as SOGs, Standard Operating Guides.

Annex II
Key Incident Management System (ICS) Terms

GLOSSARY OF TERMS AND ACRONYMS

For the purposes of ICS, the following terms and definitions apply:

COMMAND/INCIDENT COMMANDER – The Command Function of an Incident Command System (ICS) is responsible for directing and/or controlling resources by virtue of explicit legal, agency, or delegated authority. The individual responsible for the overall management of the response is called the Incident Commander. The Command Function sets objectives and priorities and defines the ICS organization for the particular response. Even if other positions are not assigned, the Incident Commander will always be designated

COMMAND STAFF – The IC may appoint a person or persons to be in charge of specific staff functions including the Information, Safety, and Liaison functions. These tasks also may include public and Congressional affairs, media relations, and legal issues, among others. The members of the Command Staff report directly to the Incident Commander and will support, advise, and keep the other key functional managers informed. The Incident Commander may appoint functional managers responsible for specific tasks (operations, planning, logistics, and finance and administration). These tasks remain the responsibility of the Incident Commander unless they are delegated to someone else. The tasks are as follows:

- ♦ **OPERATIONS** – Operations Staff direct tactical actions to meet incident objectives, administer staging areas, and identify and utilize resources.
- ♦ **PLANNING** – Planning Staff collect, evaluate, and display incident information; prepare an action plan and health and safety plan; evaluate disposal options; plan for demobilization; and maintain documentation.
- ♦ **LOGISTICS** – Logistics Staff provide adequate service and support to meet incident or event needs, including supplies, first aid, food, communications, ground support, and transportation and vehicle maintenance.
- ♦ **FINANCE/ADMINISTRATION** – Finance and Administration Staff track incident costs, personnel and equipment records, claims, and procurement contracts; and provide legal expertise.

GENERAL STAFF – The group of incident management personnel comprised of: the Incident Commander or Unified Command, the Operations Section Chief, the Planning Section Chief, the Logistics Section Chief, and the Finance/Administration Section Chief.

INCIDENT ACTION PLAN (IAP) – Contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period. The Plan may have a number of forms as attachments (e.g., safety plan).

JOINT INFORMATION CENTER (JIC) – A facility established within or near the incident command post where the information officer and staff can coordinate and

provide information on the incident to the public, media, and other agencies. The JIC is normally staffed with representatives from the federal OSC, state OSC, and RP.

OPERATIONAL PERIOD – The period of time scheduled for execution of a given set of operation actions as specified in the IAP. Operational Periods can be various lengths, usually not over 24 hours. The Operational Period coincides with the completion of one planning cycle.

UNIFIED COMMAND (UC) – A unified team that manages an incident by establishing a common set of incident objectives and strategies. This is accomplished without loss or abdication of agency or organizational authority, responsibility, or accountability.

Annex III
MASS CASUALTY INCIDENT AND SURGE PLAN
EMERGENCY MEDICAL SERVICES (EMS) GLOSSARY

Advanced Life Support (ALS)- Allowable procedures and techniques utilized by emergency medical personnel to stabilize critically sick and injured patients(s) who exceed Basic Life Support procedures. Example: Intravenous therapy, cardiac monitoring, advanced airway management, administration of medications, etc.

Bioterrorism Incident – The use of biological agents, such as pathogenic organisms or agricultural pests, for terrorist purposes.

Black Tag Patient - A patient, who, under the START triage system, is deceased.

Basic Life Support (BLS)- Basic, non-invasive first-aid procedures and techniques utilized to stabilize critically sick and injured patients(s).

Delayed (Yellow) Treatment - Second priority patient under the START triage system- Patients in this category require aid, but injuries are less severe.

Disaster Tag - A tag used by triage personnel to identify and document the patient's medical condition.

Emergency Medical Services (EMS) Surge – is the ability or need of an EMS system to expand capabilities beyond normal services to meet sudden and/or sustained increased demand for medical care and EMS resources. The increased demand could be the result of a natural disaster, terrorism event or other public health emergency, or could result from collapse of a critical system element. The expanded capacity must not only be able to accommodate an immediate short term surge, but may need to sustain a response capability for an extended period of time.

Health And Medical Emergency Response Team (HMERT) - *Teams of personnel that are trained in disaster management and in the operation of the Emergency Support Center through an 80 hour training program and a regular schedule of disaster exercises.*

Immediate (Red) Treatment - The highest priority patients under the START triage system. These patients require rapid assessment and medical intervention for survival.

Incident Command System (ICS) – ICS is a management system designed to enable effective and efficient domestic incident management by integrating a combination of facilities, equipment, personnel, procedures and communications operating within a common organizational structure. Important features of ICS include:

- Wide applicability across all emergency management disciplines;
- Used to organize both near-term and long-term field operations;

- Used for a broad spectrum of emergencies, from small to complex;
- Used by all levels of government; and
- Used by private sector and nongovernmental organizations.

Local Disaster Declaration – The condition declared by the local governing body when, in their judgment, the threat or actual occurrence of a disaster is or threatens to be of sufficient severity and magnitude to warrant coordinated local government action to prevent or alleviate the damage, loss, hardship, or suffering threatened or caused thereby. A local emergency arising wholly or substantially out of a resource shortage may be declared only by the Governor, upon petition of the local governing body.
Whenever a local emergency has been declared, the Director of Emergency Management of each political subdivision or any member of the governing body in the absence of the Director, if so authorized by the governing body, may enter into contracts and incur obligations as necessary to mitigate the effects of the event, to protect the health and safety of persons and property, and to provide emergency assistance to event-related victims. (See Appendix 1, the Commonwealth of Virginia Emergency Services and Disaster Laws of 2000, **Section 44-146.21**.)

Major Medical Emergency - Any emergency that would require the access of local mutual aid resources

Mass Casualty Incident (MCI) – Any incident that injures enough people to overwhelm the resources usually available in a particular system or area- Goal of MCI system is to "Do the greatest good!"

Medical Group Organizational Structure - This is designed to provide the Incident Commander with a basic expandable system for handling patients in a multi-casualty incident.

Medical Protocols - Policies and procedures approved by the local EMS agency for use by a provider in situations where direct voice contact with medical control cannot be established or maintained.

Medical Team - Combinations of medical trained personnel who are responsible for on-scene patient treatment

Medic Unit - An ALS equipped vehicle. It would typically include drugs, medications, cardiac monitors and telemetry, and other specialized emergency medical equipment.

Minor (Green) Treatment - Patients, under the START triage system, whose injuries can be considered minor, requiring rudimentary first-aid

Morgue (Temporary on-incident) - Area designated for temporary placement of the dead. The Morgue is the responsibility of the Coroner's Office when a representative is on scene.

Multi-Casualty - The combination of numbers of injured people and types of injuries going beyond the capability of an entity's normal first response

National Incident Management System (NIMS) - NIMS is a system mandated by Homeland Security Presidential Directive (HSPD) 5 that provides a consistent nationwide approach for federal, state, local and tribal governments; the private-sector and nongovernmental organizations to work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents, regardless of cause, size or complexity. To provide for interoperability and compatibility among federal, state, local and tribal capabilities, the NIMS includes a core set of concepts, principles, and terminology. HSPD-5 identifies these as the ICS; multi-agency coordination systems; training; identification and management of resources (including systems for classifying types of resources); qualification and certification; and the collection, tracking, and reporting of incident information and incident resources.

Regional Healthcare Coordinating Centers (RHCC) – The Regional Healthcare Coordinating Center (RHCC) is a multi-agency coordination center responsible for all operational components required to implement mutual aid between hospitals and coordinate requests for state and federal assistance. There are six RHCCs in the Commonwealth of Virginia, representing all 93 acute-care hospitals in Virginia. The RHCC has jurisdictional authority as defined the Virginia Department of Health and outlined in The VDH EOP, under requirements of the Commonwealth of Virginia Emergency Services and Disaster Law of 2000. The RHCC may be given additional authority on a regional basis according to local directive.

SALTT – Acronym that stands for Size, Amount, Location, Type, and Time. These are four of the most important questions to answer when asking for help or resources during an emergency.

S.T.A.R.T. - Acronym for "Simple Triage And Rapid Transport". This triage method assures rapid initial assessment of all patients as the basis for assignment to treat and as the first medical assessment of the incident. Main principles include: 1) Begin where you are; 2) Relocate Green (Minor) patients; 3) Move in an orderly pattern; 4) Maintain count; 5) Minimal treatment.

State Disaster Declaration – Whenever, in the opinion of the Governor, the safety and welfare of the people of the state require the exercise of extreme emergency measures due to a threatened or actual disaster, he may declare a state emergency to exist in the state, or any portion thereof, for the purpose of aiding the affected individuals and local governments. (See **Appendix 1, the Commonwealth of Virginia Emergency Services and Disaster Laws of 2000, Section 44-146.17**.) When the Governor declares a state of emergency, each political subdivision within the disaster area may, under the control and supervision of the Governor or his designated representative, enter into contracts and incur obligations necessary to combat such threatened or actual disaster, protect the health and safety of persons and property, and provide emergency assistance to the

victims of such disaster. In exercising this authority under the supervision and control of the Governor or his designated representative, the political subdivision may proceed without regard to time-consuming procedures and formalities prescribed by law (except for mandatory constitutional requirements) pertaining to the performance of public works, entering into contracts, incurring obligations, employment of temporary workers, rental of equipment, purchase of supplies and materials, and appropriation and expenditure of public funds.

Statewide Mutual Aid (SMA) Program - developed to assist localities to more effectively and efficiently exchange services and resources in response to declared disasters and emergencies. SMA is a local government program established in partnership with the Commonwealth of Virginia. The program provides a *framework* for resolution of some interjurisdictional issues and for reimbursement for the cost of services. The program is supplemental to, and does not affect, day-to-day mutual aid agreements between localities. ***Although SMA provides a good model for sound jurisdictional agreements, the process may not be fast enough to assist EMS providers in completing their emergency mission in a timely fashion.***

Terrorism Incident – premeditated, politically motivated violence perpetrated against noncombatant targets by sub-national groups or clandestine agents, usually intended to influence an audience.

Triage - The screening and classification of sick, wounded, or injured persons utilizing the Simple Triage and Rapid Transport (S.T.A.R.T.) triage system to determine priority needs in order to ensure the efficient use of medical personnel, equipment, and facilities. In Virginia it is based on a two level process using S.T.A.R.T. and a secondary evaluation method. Proper triage allows for the best survival rate in major incidents where resources are scarce and ensures an orderly approach to treating large numbers of injured.
Triage purpose includes:

1. Assigns treatment priorities.
2. Separates MCI victims into easily identifiable groups.
3. Determine required resources for treatment, transportation, and definitive care.
4. Prioritization of patient distribution and transportation.

Triage Crew - Responsible for utilizing the START triage system to assess patients on-scene and assigning them to the appropriate Treatment Areas.

Annex IV

MCI Planning Excerpts

Concept of MCI Levels

MCI size and EMS efforts will begin small and expand to meet the needs of the incident. The first arriving unit at a mass casualty incident should establish Incident Command. This is to ensure that Staging, Extrication/Rescue, Triage, Treatment and Transportation functions are implemented as needed. In a larger incident, Incident Command may establish an EMS/Medical Group Supervisor or Branch Director to oversee some or all of the above functions.

The first arriving unit should establish Incident Command. That unit should assess scene **Safety**, conduct a scene **Size-up** and **Send** that to communications, begin to **Set up** (triage, and treatment areas), and **START** Triage. This will ensure that Staging, Extrication/Rescue, Triage, Treatment and Transportation functions are implemented as needed. In a larger incident, Incident Command may establish a Medical Group or Medical Branch to oversee some or all of the above functions. Some incidents may be so large, or the sense of danger so pervasive (such as a terrorist incident), that victims may not wish to remain on the scene and will self-refer to known medical facilities. During such incidents, EMS triage and treatment resources may have to be co-located at hospitals, assembled at multiple points, and/or situated remotely out of harm's way.

Suggested MCI EMS Response Levels:

• **MCI Level 1 (3-10 Immediate/Red victims)** Note*: Larger agencies may be capable of handling incidents less than 10 patients without necessitating implementation of the MCI Plan. The decision to declare an MCI Level I is left to the Incident Commander.*

- 5 Ambulances
- 2 Engine Companies or minimum of six first responders
- 1 EMS Supervisor/Operational Chief

• **MCI Level 2 (11-20 Immediate/Red victims)**

- 10 Ambulances
- 5 Engine Companies or fifteen first responder personnel
- 2 EMS Supervisors/Operation Chiefs
- 1 MCI Trailer

• **MCI Level 3 (21-100 Immediate/Red victims)**

- 15 Ambulances
- 10 Engine Companies or thirty first responder personnel
- 3 EMS Supervisors/Operation Chiefs
- 1-2 MCI Trailers

• **MCI Level 4 (101-1000 Immediate/Red victims)**

- 20 ambulances (Minimum)
- 10 Engine Companies or thirty first responder personnel
- 2 Busses
- 5 EMS Supervisors/Operation Chiefs
- 2 MCI Trailers
- 1 Communications Trailer

BASIC PRINCIPALS

Mass Casualty Incident Management Goals

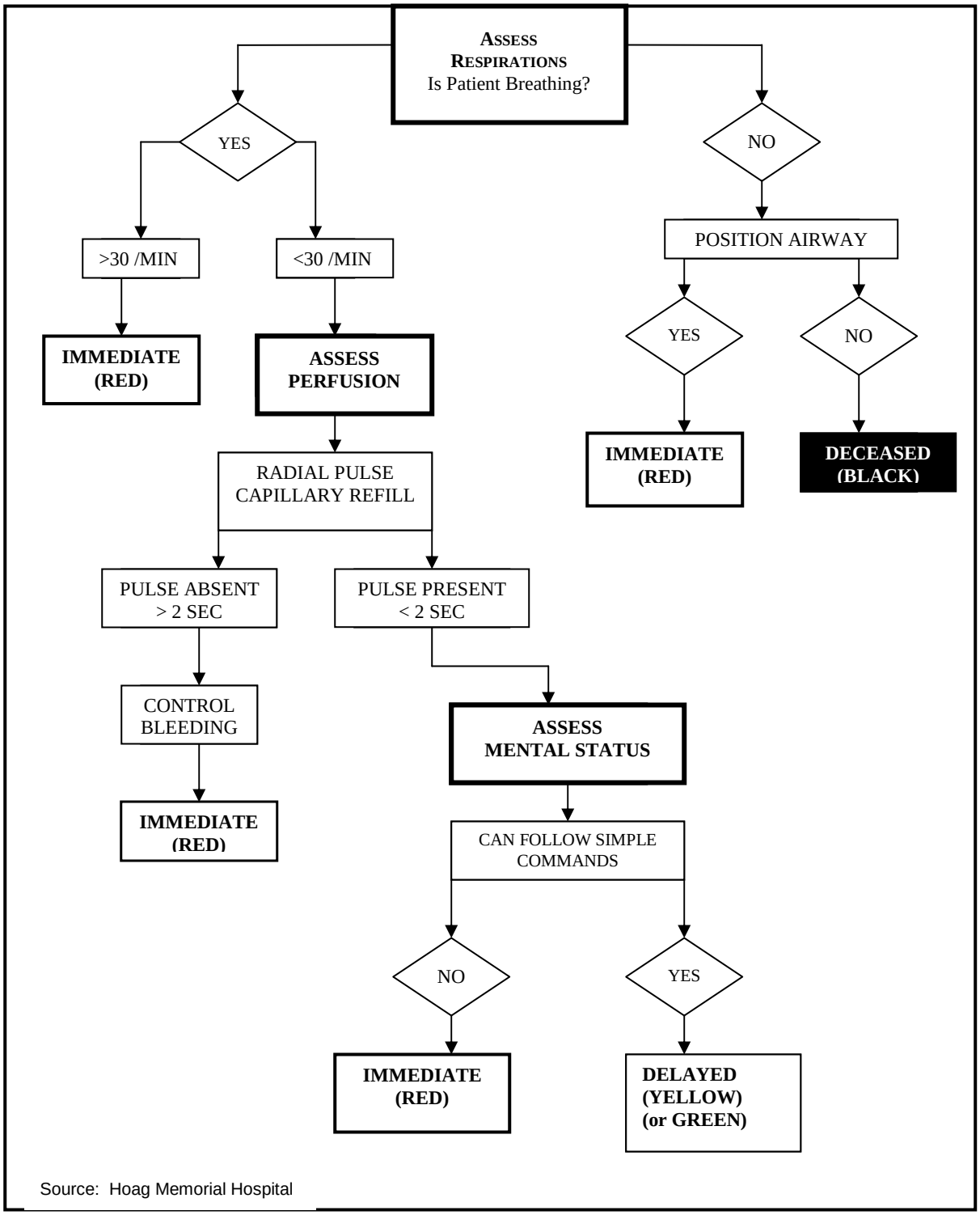
1. Do the greatest good for the greatest number.
2. Make the best use of personnel, equipment and facility resources
3. Do not relocate the disaster.

Standard Triage Methods

The method of initial field triage to be utilized is the S.T.A.R.T. method for adult patients. There are some incidents where S.T.A.R.T. triage may not be the most appropriate tool to sort patients. Pediatric patients, ages 8 and under, will be better served by using Jump S.T.A.R.T.
Patients who have been exposed to various HAZMAT or WMD may need to be triaged using guidelines that are specific to the agent to which they have been exposed. Patients who have been exposed, or who believe they have been exposed to chemical, biological or radiological weapons have much different triage needs than trauma patients.
S.T.A.R.T. triage is the preferred tool for sorting trauma patients.
Ambulatory patients are initially directed to a designated treatment area where they will be assessed and further triaged as personnel become available. For all remaining patients, triage personnel quickly move from patient to patient, using START to assess and apply color-coded triage ribbons (surveyor's tape).

S.T.A.R.T – Simple Triage and Rapid Treatment

Remember **RPM** (**R**espirations, **P**erfusion, **M**ental Status)

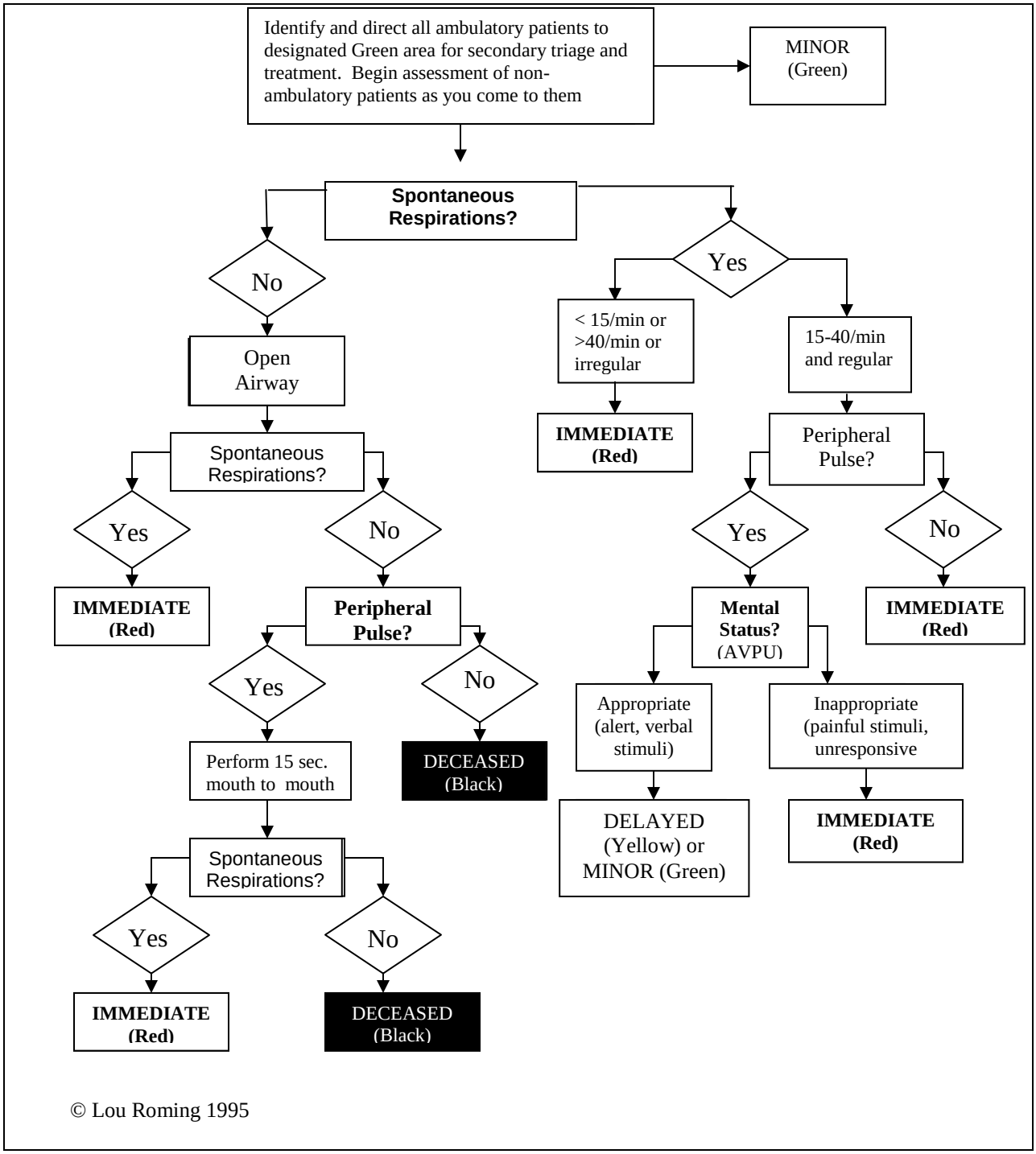


(Copied from Hampton Roads Mass Casualty Incident Response Guide, April 2007)

JumpSTART

Field Pediatric Multi-casualty Triage System

Patients aged 1-8 years



(Copied from Hampton Roads Mass Casualty Incident Response Guide, April 2007)

Mass Casualty Patient Flow

The Incident Scene

- Ambulatory patients are directed to a safe place as soon as one is identified. (Green Treatment Area).
- Those who are able should be asked to assist with others.
- Self treatment supplies should be distributed
- All victims are accounted for; trapped victims are rescued or extricated.
- Patients are accounted for and quickly triaged (START)
- Triage ribbons are applied.
- Non-ambulatory patients are removed from the scene to the Treatment Area by porters.
- Patients are decontaminated (as needed) prior to leaving the incident scene, prior to arrival in the Treatment Area.
- Deceased victims are left as they are unless required to access live patients.

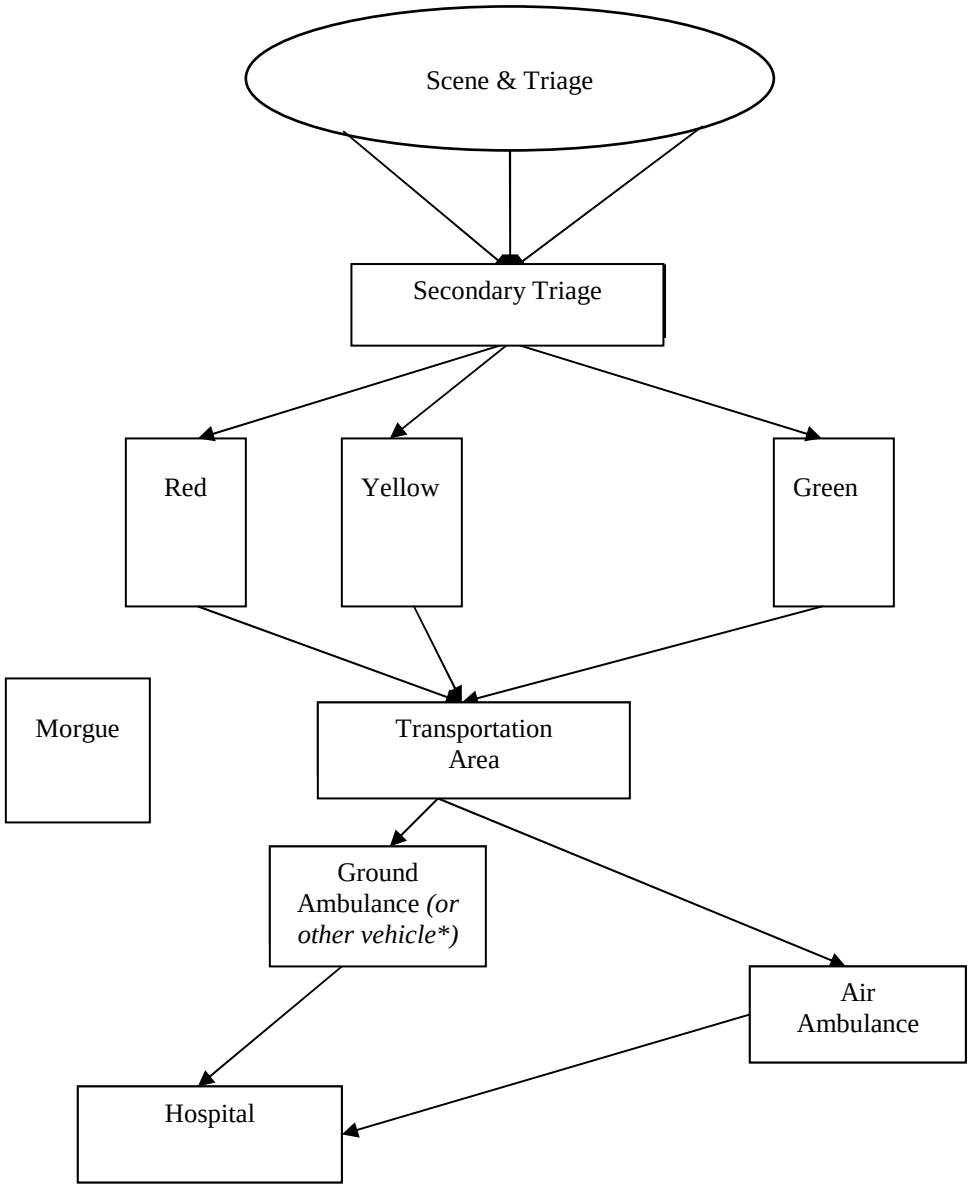
The Treatment Area

- Patients are continuously reevaluated (re-triage).
- Patients arriving from the incident scene are prioritized for treatment using a more in-depth assessment method (Secondary Triage) and a triage tag applied.
- Patients are placed in the Treatment Area and emergency medical care is provided on the basis of the triage priority.
- Separate areas may be created in the Treatment Area for Immediate (Red), Delayed (Yellow), and Minor (Green) injured patients.
- A separate isolated area (Temporary Morgue) is created for victims who die in the Treatment Area.
- Personnel, equipment and medical care resources are allocated to patients based on the triage priority.

The Transportation Area

- Emergency Departments are contacted (early in the incident) to obtain information to assist with the most appropriate patient distribution to medical facilities.
- The closest Emergency Department ("Coordinating ED") will usually be contacted, which will then notify other emergency departments.
- The "Coordinating ED" role may be handed off to another facility.
- Transportation resources are assigned based on triage priority.
- Patients are moved to the Transportation Area to the appropriate vehicle by Porters/Transport Loaders.
- Patients are transported to the most appropriate medical facility by the most appropriate means available.
- Emergency medical care is continued en route to the hospital.
- Patient movements are documented.

Patient Flow Diagram



Patients, especially green ones, may be transported by means other than ambulance as condition, safety and need dictate.

(Hampton Roads Mass Casualty Incident Response Guide, April 2007)

SAMPLE

CASUALTY INCIDENT PLANNING

SUGGESTED Mass Casualty Support Unit Inventory Lists (Generic)

MASS CASUALTY SUPPORT UNIT INVENTORY

Level 1	Level 2	Level 3	Item
20	40	80	Backboards (long)
20	40	80	Cervical collars (adjustable – adult)
20	40	80	Cervical collars (adjustable – pediatric)
20	40	80	Backboard straps (sets)
36	72	100	Blankets (disposable) 58 x 90, insulated
26	52	102	Blankets (space type)
20	40	80	Burn sheets (sterile, disposable) (NOT blue ones)
50	100	200	Multi-trauma dressing (sterile, size 12” x 30”)
50	100	200	Military/Civilian 4” rolls
50	100	200	Military/Civilian 6” rolls
80	100	200	Trauma dressing, sterile, 8” x 10”
150	300	500	Kling 4” rolls
800 each	1600	2000	Non-sterile 4 x 4 dressing
75	150	300	Cravats (triangular bandage
50 rolls	100	200	Tape 3” x 10 yards, silk
24 rolls	36	36	Tape, duct
25	50	100	NP airway kit, latex free, set of 6, sizes 26 to 34 French
25	50	100	OP airways, set of 6, (Berman kit), size infant to large adult
25	50	100	Oxygen mask, non-rebreather, with tubing, adult
25	50	100	Oxygen mask, non-rebreather, with tubing, pediatric
25	50	100	Oxygen tubing, male connectors, minimum 7 ft.
10 each	20	40	Bag valve mask device, disposable (each BVM has adult, & pediatric masks)
12	25	25	Combi- Nebulizers - Adult
12	25	25	Combi-Nebulizers - Pediatric
5	10	20	Hand powered portable suction units

15	30	60	Hand powered portable suction units replacement canisters
1 case each size	2	4	Gloves, nitrile (medium, large, extra large)
50	100	200	Face masks w/eye shield
50	100	200	Eye protection
25	25	100	Splints, disposable (minimum 12" , recommend 18")
12	24	48	Splints, disposable, 34"
36	72	108	1000 cc Normal Saline IV (12 per case)
48	48	96	IV tubing (10 drop sets) (48 per case) at least 100 inches
25	50	100	IV starter kits (prepackaged prep kits w/o needles – example: Criticon)
9 cans	18	24	Waterless hand cleaner
30	60	120	Towels - cloth
30	60	100	Patient belonging bags
3 boxes	6	6	Sani-cloths (50 indiv. envelope per box)
4	8	14	Sharps containers (minimum - 2 gallon size) (2 red/2 yellow)
1	2	2	Megaphone with extra batteries
1 case of 250	2	4	Biohazard bags (10 – 15 gallon size)
3	6	12	Flashlights with extra batteries
100	200	300	Zip lock storage bags (gallon size)
10	20	40	Military type patient litter, mesh, collapsible, with feet, with handles
1set	2	2	Triage tarps, (red, yellow, green), with grommets, minimum 15' x 20' (recommend heavy canvas) for equipment cache (can be poly coated)
1 each	2	2	Triage flags (base, telescoping min. 8 ' pole, flag), red, yellow, green
18	36	36	Traffic cones with reflective stripe
18	36	36	Step-in posts, fiberglass
2 rolls each	4	4	Rolls barricade tape, red, green, yellow (3" minimum width)
75	150	200	Triage tags
3	6	12	Triage ribbon kits (red, yellow, green, black)
3 cases	6	6	Bottled water, minimum 12 ounce
30 each color	60	60	Cyalume light sticks, box of 24 (red, yellow, green - min. 12 hour)
50 each	100	100	Cyalume light sticks (white – hi intensity – 30 min.) 10 per box
5**	10**	20**	Scissors
5**	10**	20**	Penlights

5**	10**	20**	Stethoscopes, adult/ peds. (i.e. Sprague Rappaport, etc.)
5**	10**	20**	Blood pressure cuffs, (pediatric, adult, large adult)
5**	10**	20**	2 Red, 2 Yellow, 1 Green Treatment Area Kits would include above items marked with "**"
6	12	12	Safety vests, orange mesh
3 boxes	6	6	Permanent markers
9	18	18	Clipboards
3 boxes	6	6	Ball point pens (12 per box)
2	4	4	Oxygen multilator or minilator, minimum 5 ports, adjustable flow rate
2	4	4	Oxygen hose 50 feet with regulator
2	4	4	Oxygen bottles, minimum size M cylinder
2	4	4	Oxygen kits (include Teflon tape, adjustable wrench, 5 Christmas trees – green nipple fitting)
1	2	2	Wheeled hand carts (for equipment and secure oxygen bottle carrying capability)

** May be placed in the patient assessment kit.

RECOMMENDATIONS

All supplies and equipment are based on Basic Life Support (BLS) treatment

Patient numbers are figured on the following percentages:
30% Red
30% Yellow
40% Green

Delivery of these units for INTERJURISDICTIONAL should include a driver, officer, and 2 other personnel trained in MCI response. For interjurisdictional, it is up to each jurisdiction to decide what the crew will be comprised of.

Consider stocking Albuterol for the nebulizer treatments

(*Tables taken from Northern Virginia MCI Plan)*

SAMPLE

SUGGESTED PATIENT TREATMENT AREA PACKAGE:

Packaged with itemized list on outside.

Recommend 1patient boxes for Red and Yellow Areas and 5 patients bags for Green Areas.

Each patient box should be shrink wrapped.

1 pt. Box	5 pt. Bag	Item
1	5	Space Blanket
2	5	Trauma pads – 8x10
2	5	Trauma pads – 5x9
2	5	4” Kling*
8	10	4x4 Bandages
3	6	Cravats
2	5	4” Kling
2 pairs each	2 pairs each	Gloves-Nitrile (L, XL, and XXL)
2	2	3” Tape
1 each	2 each	Mask & eye protection
1	1	Airway Kit (OP and/or NP set)
1	5	Patient belongings bag
1	5	Disaster (triage) tag

SAMPLE - Suggested Optional Equipment List

Item
Fire extinguisher, minimum 20lb. ABC
Patient transport device with all terrain wheels
Water cooler – or bottled water
Disposable cups, minimum 12 ounce
Electrolyte replenishment
Body bags with handles
Saw horses
Pop-up color-coded tents

SAMPLE

SUGGESTED PATIENT ASSESSMENT KIT: PATIENT ASSESSMENT KIT:

(For 25 Patients: recommend 2 assessment kits for Red and Yellow areas and 1 assessment kit for Green area.)

QUANTITY	ITEM
1	Adult stethoscope
1	Pediatric stethoscope
1	Adult BP cuff
1	Pediatric BP cuff
1	Pair scissors
1	Penlight

SAMPLE

<u>RECOMMENDED</u> ADMINISTRATIVE PACKAGE – LEVEL III: Boxes identified with Red, Yellow, or Green markings on outside will include the following:

RED	YELLOW	GREEN	ADMIN ITEMS (100 Patients) LEVEL III
11	11	14	Rolls duct tape
0	1	1	Megaphone with extra batteries
400	300	300	Bio-hazard bags (10-15 gal.)
3	3	3	Flashlight (with spare batteries [and bulbs])
120	90	90	Zip lock storage bags (gallon size)
2	2	2	Appropriate color tarp, with grommets, minimum 15'x20' (recommend heavy canvas)
2	2	2	Appropriate color area triage flag
12	12	12	Traffic cones
12	12	12	Step-in posts, fiberglass
4	4	4	Rolls appropriate color barricade tapes (3"minimum width)
60	60	80	Disaster (triage) tags (reduce TOTAL number by 25 if also used in pt. care package)
4	4	4	Triage ribbon kit (includes red, yellow, green, black ribbons)
2 cases	2 cases	2cases	Bottled water
18 each color	18 each color	24 each color	Red, yellow, green Cyalume light sticks (12 hour)
30	30	40	Cyalume light sticks white hi intensity (30 min)
4	4	4	Safety vests
2 boxes	2boxes	2 boxes	Permanent markers
6	6	6	Clipboards
2 boxes	2 boxes	2 boxes	Ball point pens

(NOTE: This is the recommendation for LEVEL 3 response, LEVEL I (25 patients) and LEVEL II (50 patients) have different and sometimes less amounts of the same equipment.)

(Supply lists taken from Northern Virginia MCI Plan)

Annex V
Ambulance Formula

The formula below can be used to estimate the number of ambulances needed at an incident with a large number of patients.

Example:

Total number of patients = 60
Time required for round-trip to hospital = 60 minutes
Total time to complete operations = 120 minutes
Number of patients per ambulance = 2

$$\textbf{Number of Ambulances Required} = \frac{\text{(Total Number of Patients) (Time Required for Round Trip)}}{\text{(Total Time to Complete Operation) Number of Patients per Ambulance}}$$

Consider:

$$15 \text{ Ambulances Required} = \frac{(60)\,(60) = 3600}{(120)\,(2) = 240}$$

Annex VI
Virginia Department of Emergency Management
Statewide Mutual Aid (SMA) Operations Manual, September 2006
Excerpts

(Note: SMA use is a good long range planning tool for resources; however, response times may be too long to assist in a surge event)

Purpose

The Statewide Mutual Aid (SMA) program was developed to assist localities (as used in this document, locality means "political subdivision" as defined in Virginia Code § 44-146.16) to more effectively and efficiently exchange services and resources in response to declared disasters and emergencies. SMA is a local government program established in partnership with the Commonwealth of Virginia. The program provides a framework for resolution of some interjurisdictional issues and for reimbursement for the cost of services. The program is supplemental to, and does not affect, day-to-day mutual aid agreements between localities. All types of local resources may be requested or provided pursuant to this program. The SMA Operations Manual, of which this is a part, provides additional information and forms and is available from the Virginia Department of Emergency Management (VDEM) website: www.vaemergency.com. Title 44 of the Virginia Code governs aspects of this program and authorizes emergency declarations.

Concept of Operation

A. Mission of the Virginia Emergency Operations Center:
To coordinate, monitor and assist with the Statewide Mutual Aid Program during response and recovery activities before, during and after an emergency event has occurred within the Commonwealth of Virginia.

B. Responsibility of SMA Members:
SMA members will proactively monitor situations for the possibility of the need to implement SMA and, to the extent resources are available, will respond to requests and will support member localities impacted by the effects of an emergency or natural disaster.

C. Planning Assumptions:
   1. All eligible Virginia localities have adopted the Statewide Mutual Aid for Emergency Management Model Authorizing Resolution (Appendix A), agreeing to provide assistance when requested, subject to availability of resources, and setting out general requirements and procedures. When a disaster or emergency is expected, or when it occurs, a Statewide Mutual Aid Event Agreement (Appendix B) is entered into by the parties, specifying the resources to be provided and the terms and conditions of the assistance, including predicted duration.

2. Participation in the SMA program requires that members comply with the provisions of the Resolution, including the following:
   a. Insurance coverage: Each locality including volunteer organizations providing services to the locality and participating in SMA shall maintain automobile and liability insurance coverage with minimum limits of at least one million dollars and maintain appropriate equivalent self-insurance programs. Localities shall provide workers compensation coverage for their own employees in conformance with State law. Localities may provide workers compensation or accident coverage for their own volunteers in accordance with State law.
   b. Responsibility for wages: Each locality is responsible for payment of its own personnel.
   c. Reimbursement and documentation: The Assisting Locality is required to bill the Requesting Locality for the cost of services and provide proper documentation for all cost incurred for reimbursement within 60 days of completion of the service provided. The Requesting Locality shall reimburse for all expenses within 60 days of receipt of proper documented cost from the Assisting Locality.
   d. Support by the Virginia Department of Emergency Management (VDEM): VDEM will provide assistance and support to localities with requesting and receiving SMA, as needed.

D. Operational Objectives:

1. VDEM, in cooperation with localities, will develop a 24-hour contact capability so that localities can request assistance from each other using the locality point-of-contact listing posted on the VDEM on-line Emergency Operations Center (EOC).
2. VDEM, in cooperation with localities, will develop a system for posting requests for assistance from localities to the VDEM website for review and support within the capability of other localities.
3. VDEM, in cooperation with localities, will develop an on-line reporting system to post missions being supported by localities.
4. VDEM, in cooperation with localities, will develop an After Action Review (AAR) format for reporting lessons learned and problem areas in need of corrective action.
5. VDEM, in cooperation with localities, will develop and maintain a 24-hour operational readiness capability at VDEM to support localities with the SMA program as needed.

This entire manual including procedures for requesting and assisting and member jurisdictions in Statewide Mutual Aid can be found at www.vaemergency.com/programs/sma/index.cfm

Annex VII

Sample

Quick Reference Check List

Objectives:

- ☑ Check all emergency and back up equipment
- ☑ Notify/recall off duty personnel as required
- ☑ Prepare to assist with public notification
- ☑ Review SOPs and other guidance
- ☑ Establish contact with local area and surround medical and emergency services facilities
- ☑ Respond to EMS routine and MCI incidents
- ☑ Consider other key EMS issues

Emergency Management Actions – Emergency Medical Services

Normal Operations:

- ☐ Develop and maintain plans and procedures to implement EMS operations in times of emergency
- ☐ Provide emergency medical treatment and pre-hospital care to the injured and as feasible assist with warning, evacuation and relocation of citizens during a disaster.

Increased Readiness

- ☐ Alert Duty Personnel
- ☐ Alert mutual aid partners
- ☐ Review and update plans and procedures
- ☐ Check rescue and communication equipment

Response (conditions worsen requiring full-scale mitigation and preparedness activities

- ☐ Alert personnel to stand-by
- ☐ Begin to implement record keeping of all incurred expenses and continue for the duration of the emergency, Record all disaster-related expenses
- ☐ Designated EMS representative should report to EOC and assist with emergency operations
- ☐ Continually review need for personnel and equipment present and long range
- ☐ Assign duties to personnel
- ☐ Call for mutual aid as necessary and appropriate
- ☐ Follow established procedures and protocol for providing rescue services , emergency medical treatment and pre-hospital care to the injured, including all safety procedures

Recovery

- ☐ Continue to provide essential services as required
- ☐ Continue all search and rescue and EMS activities as necessary and required
- ☐ Assist in clean up
- ☐ Continue to compile disaster related expenses

Annex VIII
Guidelines for Mutual Aid Agreements (MMA)

Common characteristics of MAA include:

a) They are usually imprecise in designating resources or capabilities needed or to be provided;

b) They are based on the concept that resources, materials or services are usually voluntarily provided by the parties on the understanding that there will be a reciprocal exchange of assistance if and when required;

c) That resources, materials or services provided would not result in profit to the providing party;

d) They commit parties to a mutually beneficial, cooperative agreement based on principles and concepts of contract law which support protecting lives and property;

e) They provide mechanisms for coping with emergency situations or events that allows maximum flexibility in the use of resources;

f) That parties providing assistance may withhold all or part of their resources under certain conditions; and

g) They usually provide that a party requesting assistance will indemnify the party providing the assistance for any resulting liability.

Practically, mutual aid agreements:

a) Establish an agreement between the parties and document proof of the agreement and its contents;

b) Identify the parties involved, identify respective responsibilities, define how and when they are to be implemented, who performs what and how, who pays for specific services, how long the agreement is in effect, how the agreements are terminated and who administers the agreements;

c) Provide liability protection to all the participating parties;

d) Can enhance communication and cooperation between the participating parties;

e) Help reduce the misunderstandings between participating parties, which often exist when assistance is requested or provided on an informal basis,

And;

f) Provide an agreement that spans changes in key personnel.

(Information on this page taken from "Hazard Management Guidelines for Mutual Aid Agreements", The Chamber of Minerals & Energy, Western Australia, September 2005.)

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