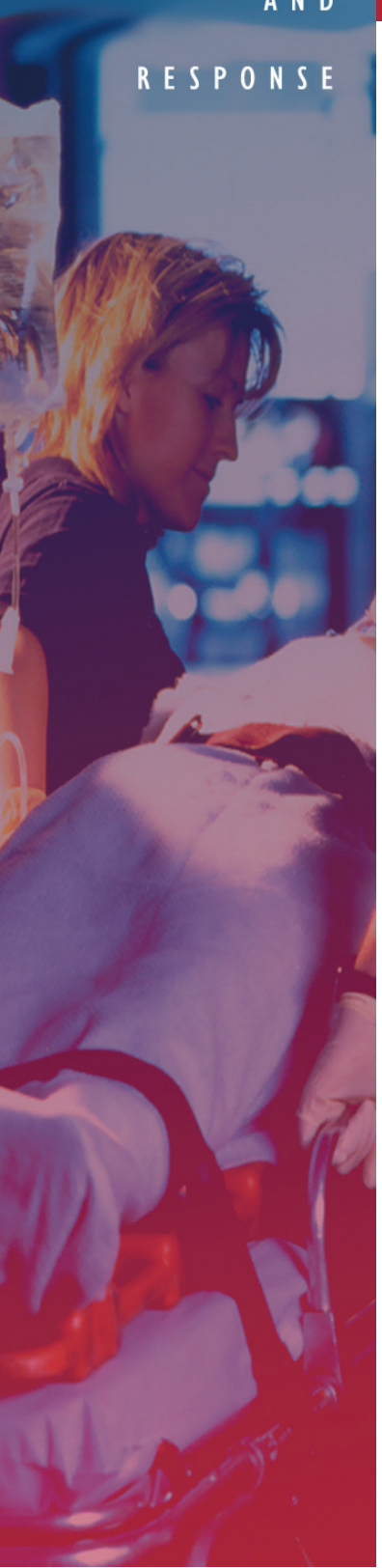
NEW YORK UNIVERSITY

CENTER FOR CATASTROPHE PREPAREDNESS AND RESPONSE



Emergency Medical Services: The Forgotten First Responder

— A report on the critical gaps in organization and deficits in resources for America's medical first responders

Executive Summary

This report identifies critical deficits in the role and organization of Emergency Medical Services (EMS) in homeland security preparedness and provides recommendations to improve the ability of EMS to respond to a terrorist attack.

In December 2004, New York University's Center for Catastrophe Preparedness and Response held a national roundtable that included experts from major organizations representing the EMS system. This report is a comprehensive review of participants' comments, as well as recent reports by federal agencies and independent organizations.

EMS providers, such as fire departments and hospital-based, commercial, and air ambulance services, ensure that patients receive the medical care they need during a terrorist attack. While EMS personnel, including Emergency Medical Technicians and paramedics, represent roughly one-third of traditional first responders[1] (which also include law enforcement[2] and fire service personnel[3]), the EMS system receives only four percent of first responder funding.[4] If EMS personnel are not prepared for a terrorist attack, their ability to provide medical care and transport to victims of an attack will be compromised. There will be an inadequate medical first response.

This report's recommendation of enhanced funding for EMS should not be misconstrued as a recommendation for diverting resources away from other first responders.

Critical Issues Facing EMS in Homeland Security Preparedness:

More than three years after September 11, 2001, significant gaps remain within the homeland security preparedness capabilities of the EMS system:

- EMS-specific homeland security standards and guidelines do not exist to determine the necessary training and equipment for EMS personnel to effectively respond to a terrorist attack or disaster.
- EMS personnel lack vital response equipment, training and education.[5]
- EMS providers and state and local EMS directors are often excluded from critical emergency planning efforts.
- Many EMS systems, first responders, and emergency agencies cannot communicate with each other through interoperable data and voice communication systems.

Key Recommendations to Improve the Role of EMS in Homeland Security Preparedness:

- Congress should enact legislation to formally establish a Federal Interagency Committee on Emergency Medical Services to improve the role of EMS in homeland security preparedness through more effective coordination of federal programs.
- The Department of Homeland Security, the Department of Health and Human Services and the Department of Transportation should establish EMS-specific terrorism preparedness standards and guidelines.
- The Federal government should increase homeland security funding for EMS and coordinate federal grant guidance and funding priorities to meet preparedness goals, such as improved communications between EMS and other emergency responders.
- The Federal government should facilitate a nation-wide needs assessment of the EMS system to identify the costs and methods of compliance with the national EMS preparedness standards and guidelines.

Introduction

Despite the lessons of September 11, 2001, the EMS system's homeland security and disaster preparedness efforts have received inadequate recognition and support. EMS personnel, such as EMTs and paramedics, lack vital response equipment, training and education and the EMS system receives little homeland security assistance.

EMS personnel provide emergency medical care and transport to victims of terrorist attacks, disasters, and routine medical emergencies. The emergency medical service and ambulance personnel who lost their lives responding to the terrorist attacks of September 11, 2001 reflect the diversity of EMS organizations across the country. The personnel who lost their lives were from the New York City Fire Department, a nonprofit private ambulance service, a for-profit private ambulance service, a volunteer fire department and hospital-based ambulance services.

A well-prepared EMS system is critical to homeland security. According to a Department of Homeland Security (DHS) report, "the readiness of EMS is vital to ensuring prompt and appropriate emergency care and transportation as a component of the overall response. Therefore, it is essential that EMS agencies receive support and assistance to prevent, respond to and assist in the recovery from terrorist incidents." [6]

Despite acknowledgement by DHS and other Federal agencies of the importance of the EMS system's role in homeland security preparedness, to date the EMS system received little assistance from homeland security and bioterrorism grant programs. Of the billions of dollars distributed by the Department of Homeland Security, less than four percent of "first responder funding" was allocated to EMS providers or EMS systems.[7] In addition to receiving few homeland security resources, EMS personnel lack emergency preparedness equipment, education and training. While EMS providers currently undertake preparedness efforts with limited federal assistance, further resources are necessary to ensure that EMS providers have the equipment and training they need to respond to a terrorist attack or disaster. If EMS personnel do not receive the equipment, education and training they need, their ability to provide care for patients during a disaster will be compromised. There will be an inadequate medical first response.

A diverse group of governmental and non-governmental organizations must work together to improve the role of EMS in homeland security preparedness. While this report focuses on inadequate support for the EMS system, a wide range of organizations - from firefighters to hospitals - that play critical roles in preparedness and response efforts also face funding shortfalls.

CCPR-Sponsored National EMS Homeland Security Roundtable

Moderators: Dr. Lewis Goldfrank, Professor and Chair of Emergency Medicine, NYU School of Medicine
Dr. George Foltin, Associate Professor of Emergency Medicine and Pediatrics

On December 8, 2004, NYU's Center for Catastrophe Preparedness and Response held a national roundtable discussion to define an initial agenda to strengthen the role and capabilities of EMS in homeland security preparedness. The roundtable discussion included more than 50 representatives of national and regional EMS organizations as well as representatives of federal agencies. During the first session, federal agencies outlined programs and policies that support the preparedness capabilities of the pre-hospital EMS system. During the second session, participants conducted a needs assessment of the EMS system's preparedness capabilities. The third session focused on generating recommendations to address these needs.

CRITICAL ISSUES REGARDING THE ROLE AND SUPPORT OF EMS IN HOMELAND SECURITY PREPAREDNESS

The level of homeland security support for EMS is inadequate

EMS providers and systems receive insufficient support to effectively prepare for a terrorist attack or large-scale disaster. Our nation's preparedness efforts inadequately recognize the role of EMS in homeland security.

Federal and state homeland security grant programs provide little or no homeland security assistance to EMS. In May 2004, DHS issued the results of a terrorism preparedness survey of the American Ambulance Association membership. The majority of ambulance providers that responded to this survey received no funding or equipment for homeland security preparedness.[19] Of those responding to the survey:

- Fifty-eight percent received no direct federal funding for homeland security preparedness.[20]
- Sixty percent of ambulance providers received no homeland security preparedness equipment through federal grant programs.[21]

Despite the fact that Congress and the Administration have made clear that EMS providers of all types are eligible for multiple funding programs, the following review of four major homeland security grant programs illustrates that the EMS system receives inadequate resources to prepare for and respond to a large scale terrorist attack.

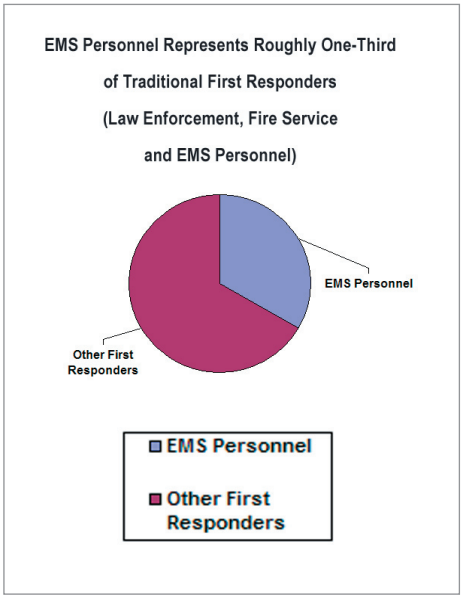
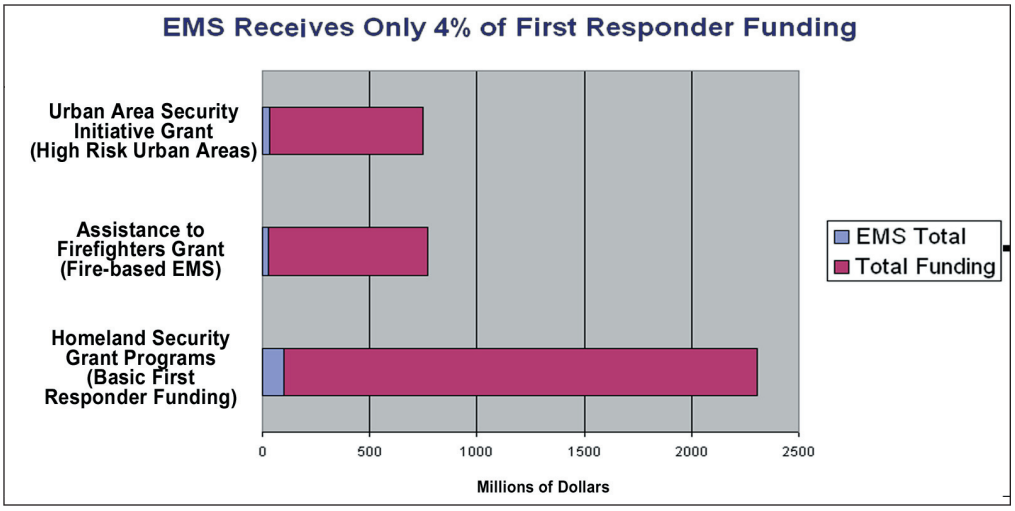


Exhibit 1: First Responder Funding



Critical Issues

I. Inadequate Recognition of Emergency Medical Service's Role in Homeland Security:

What is the level of homeland security support for emergency medical services (EMS)?

- Since September 11th, EMS received four percent of Office for Domestic Preparedness' first responder grant funds, yet EMS personnel represent roughly one-third[8] of traditional first responders, which include law enforcement[9], fire service[10] and EMS personnel.
- Fifty-eight percent of ambulance providers receive no direct federal funding for homeland security preparedness.[11]
- Sixty percent of ambulance providers receive no homeland security preparedness equipment purchased with federal funds.[12]
- Thirty-three percent of ambulance providers are not represented on community based emergency planning panels.[13]
- Despite being designated as a critical area for improvement by the Department of Health and Human Services (HHS), EMS received only five percent of the HHS bioterrorism grant funding. Some states allocated no bioterrorism funds to improve the capabilities of the EMS system.[14]

Critical Issues

II. Inadequate Support for Providing Emergency Medical Services Personnel with Homeland Security Education, Training, and Equipment:

What is the level of homeland security and disaster preparedness education, training and equipment for EMS personnel?

- *Over half of emergency medical technicians (EMT) and paramedics received less than one hour of training in biological, chemical, and explosives hazards since September 11, 2001. Twenty percent of EMTs and paramedics received no training at all.*[15]
- *Interoperable communications between hospitals and EMS providers is not available in many states.*[16]
- *Since September 11th, less than 33 percent of EMTs and paramedics participated in a drill simulating a radiological, biological or chemical attack.*[17]
- *No EMS-specific national bioterrorism or disaster preparedness standards exist. For example, there are no benchmarks to determine how many EMS personnel should have protective equipment or how many should participate in mass casualty exercises.*
- *Twenty-five states indicated 50 percent or less of their EMTs and paramedics had adequate equipment to respond to a biological or chemical attack.*[18]

EMS providers receive little support from DHS's Homeland Security Grant Program

DHS's Homeland Security Grant Program, which provides billions of dollars in preparedness assistance to state and local agencies to prevent and respond to incidents of terrorism, allocates inadequate support to EMS. According to DHS's examination of key state and local preparedness grant programs, EMS providers received approximately four percent of the funding available in 2002, 2003[22] and 2004.[23] In fact, a number of states gave no state homeland security grant funding to EMS.[24]

DHS's Urban Area Security Initiative allocates scarce funding to EMS

DHS's Urban Area Security Initiative (UASI) Grant Program provides funding to help high-risk urban areas prevent and respond to terrorist attacks. The fiscal year 2004 UASI program consolidated a number of grant programs and could be used to improve the preparedness of the EMS system. A DHS review of this program found that EMS received approximately four percent of UASI funding.[25]

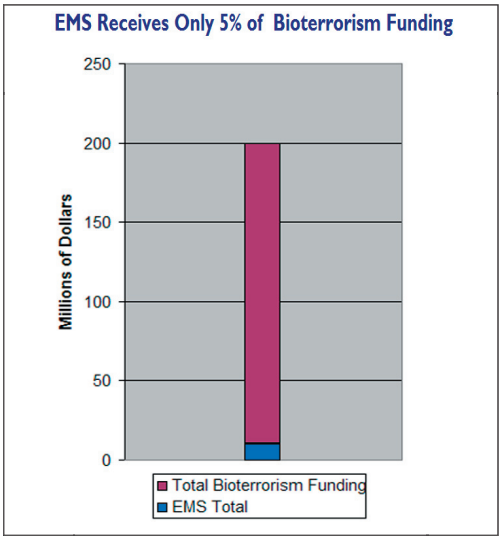
DHS's Assistance to Firefighters Grant Program provides few resources to EMS

The Assistance to Firefighters Grant Program, or the Fire Act, helps fire departments improve their preparedness and response capabilities. While one goal of the Assistance to Firefighters Grant is to improve the capabilities of fire-based EMS, a 2004 audit revealed that fire-based EMS received only four percent of these funds.[26]

EMS receives inadequate support from bioterrorism grant programs

The National Bioterrorism Hospital Preparedness Program, administered by the Department of Health and Human Services (HHS), provides funding to hospitals and health care systems. These grants help hospitals and health care systems to prepare for terrorism and other public health emergencies. Although HHS designated the preparedness of EMS systems as a critical area for improvement, the EMS system received only five percent of Bioterrorism Hospital Preparedness Grant Funding.[27] Four states did not involve the state EMS office in the application process for these grants[28] and some states provided no funding to EMS providers.

Exhibit 2: Bioterrorism funding graph



The level of homeland security education and training for EMS personnel is inadequate

EMS personnel receive inadequate homeland security education and training due to the lack of grant funding. As

a result of this funding crisis, the EMS system is not adequately prepared to care for and transport patients during a large scale terrorist attack or natural disaster.

The Longitudinal EMT Attribute and Demographic Study (LEADS) project, conducted annually by the National Registry of EMTs, highlights the lack of preparedness training and education among EMS personnel.[29]

- More than half of EMTs and paramedics received less than one hour of training in biological, chemical and explosive hazards since September 11, 2001. Twenty percent of EMTs and paramedics received no training at all.
- Fire department EMTs and paramedics received an average of four and one-half hours of training in homeland security and disaster management since September 11, 2001. EMTs and paramedics not affiliated with fire departments received an average of less than one hour of such training.
- EMTs and paramedics in urban areas have received less than three and one-half hours of training in homeland security and disaster management since September 11, 2001.
- EMTs and paramedics in rural communities have received less than one hour of training in homeland security and disaster management since September 11, 2001.
- In the last year, less than 33 percent of EMTs and paramedics participated in a drill simulating a radiological, biological or chemical attack.

The level of homeland security support for equipping EMS providers is inadequate

Due to the lack of funding, EMS providers do not have the necessary equipment to effectively respond to a terrorist attack or a catastrophic event. EMS personnel without protective equipment are at an unacceptable risk of becoming victims themselves and will be unable to transport and care for victims of a biological, chemical, radiological or nuclear attack.

A 2003 study sponsored by the Department of Health and Human Services found that EMS providers lacked the necessary protective equipment to respond to a bioterrorist threat.[30] This study, which characterized each state's ability to respond when facing an emergency medical event, found that:

- In 25 states, 50 percent or less of EMTs and paramedics had adequate equipment to respond to a biological or chemical attack.
- Only one state reported that adequate personal protective equipment would be immediately available, on a statewide basis, for all EMS personnel in the event of a biological or chemical event.

Many fire-based EMS providers also lack the necessary equipment and training to respond to a chemical or biological attack. According to a 2002 U.S. Fire Administration study:[31]

- Only 13 percent of fire departments can handle a hazardous materials and EMS incident involving 10 patients or more.
- Only 11 percent of fire departments can handle a technical rescue with EMS at a building collapse.

The EMS system is excluded from many state and local emergency planning efforts

Many communities and states do not include EMS providers, state EMS directors or local medical directors in the emergency planning process. These planning efforts often define grant applications and determine allocation of grant funds. If EMS stakeholders are not represented as an important participant in the planning process, the use of scarce EMS resources

cannot be maximized.

In May 2004, DHS issued the findings of a terrorism preparedness survey of the American Ambulance Association membership. The majority of those ambulance service providers responding to the survey cited planning as the most important operational need in preparation for a terrorist attack.[32] Yet the same survey found that of those responding to the survey:

- More than 50 percent of ambulance providers have no written emergency response plan.[33]
- Thirty-three percent of ambulance providers are not represented on community based emergency planning panels.[34]

The survey results also underscore the difficulty encountered by ambulance providers in applying for federal funding.

- Eighty-two percent of ambulance providers responding to the survey encountered difficulty in obtaining federal funding because of inaccurate or inadequate grant information and the need for assistance in completing the grant applications.[35]

EMS-specific national bioterrorism and disaster preparedness standards and guidelines do not exist

No EMS-specific national bioterrorism or disaster preparedness standards or guidelines exist. The absence of these standards and guidelines is a significant barrier to the effective allocation of resources for improving the preparedness capabilities of the EMS system. For example, there are currently no standards or guidelines to determine how many EMS personnel should have protective equipment, how many personnel should participate in mass casualty exercises or the kinds of information about what technology systems EMS should have.

EMS-specific national bioterrorism and disaster preparedness standards should be addressed through ongoing federal efforts, such as Homeland Security Presidential Directive-8, regarding national preparedness. This directive outlines a series of goals, including the establishment of preparedness standards. As yet, however, the Federal government has developed few standards.

The Federal government must conduct a comprehensive assessment of the capabilities of the EMS system to respond to terrorism, public health emergencies and other disasters so that EMS-specific preparedness standards and guidelines will accurately reflect the capabilities needed to achieve effective levels of preparedness and response.

The level of medical direction in EMS preparedness efforts is inadequate

Many state homeland security efforts are hindered by a lack of medical direction. Physician emergency medical directors are an essential component of EMS systems. They provide medical leadership, oversight, coordination and access to best practices to assure quality patient care. EMS medical directors provide leadership in areas such as developing preparedness plans, coordinating these efforts with other first responders and establishing connections with the public health care system. Despite the importance of state EMS medical directors, only 37 states and territories have a state EMS medical director.

Local, regional, and national EMS databases and surveillance efforts to support the preparedness efforts of the EMS system are inadequate

The EMS system does not effectively collect patient and systems data. No means currently exists to easily link disparate EMS databases to allow analyses at a local, state and national level. In fact, some roundtable participants

noted that complete EMS data is missing at the regional and state level in over 90 percent of states.

The National Association of State EMS Directors, the National Highway Traffic Safety Administration, the Health Resources Services Administration and others have begun to develop the National EMS Information System (NEMSIS), a national EMS database that will be useful in developing nationwide EMS training curricula, evaluating patient and EMS system outcomes and addressing resources for disaster preparedness. However, the Federal government has provided insufficient funding to ensure that EMS systems have the tools, such as new technologies, to make NEMSIS truly effective. As in other parts of the health care system, the development and the implementation of a national uniform data set is unlikely to occur without federal financial and technical support.

Although EMS may be the first part of the health care system to detect a bioterrorist attack, the EMS system has not received sufficient support to develop a detection system. A detection system within the EMS system could provide prompt reporting and analysis of biological threats. This information would assist in the detection, identification and early response to an attack.

The EMS system is often unable to communicate with other first responders and the public health community during disasters

The EMS system faces significant roadblocks in developing interoperable voice and data communications with other first responders and the public health community. As with other first responders, the absence of communications standards, significant technological barriers and lack of funding hinder efforts to improve the EMS system's communications capabilities. These communications failures have and will continue to result in tragic consequences for the first responder community.

The EMS system is the critical link between first responders and the public health system. To effectively care for patients during a crisis, EMS providers must not only be able to communicate with other first responders and the incident commander, but also 911, hospitals, the health care system and other response agencies. EMS must have access to medical consultation, databases and protocols. However, a survey by the National Association of State EMS Directors[36] raises significant concerns that state and regional EMS communications systems may not be capable of effectively coordinating the medical management of major incidents with public safety services, the public health system and hospitals. This survey found that:

- Interoperable communications between hospitals and EMS providers is not available in many states.
- Only five states provide 911 coverage to 100 percent of their populations.

Few states have state or regional medical communications centers that are always accessible and capable of coordinating major incidents with the EMS system, health care facilities and public health. Where available, these centers have proven to be very useful in improving the medical response especially when there are many health resources involved. They rapidly retrieve and disseminate critical information about the incident, resources and surge capacity, which enables better care to patients during a disaster. In essence, these facilities become the command and information centers for the health and medical response to mass-casualty incidents. Many of these same state and regional EMS systems lack fundamental incident management software tools, including emergency alerting, volunteer

credentialing, and emergency operations center software.[37]

Efforts to improve communications capabilities must involve a broad group of stakeholders, including other first responders and the public health community, and must address both voice and data communications.

RECOMMENDATIONS:

1) Improve the preparedness capabilities of the EMS system through more effective coordination of Federal programs.

   • Congress should enact legislation to establish a Federal Interagency Committee on Emergency Medical Services (FICEMS) to improve coordination among all federal agencies involved in EMS activities.

2) Coordinate federal grant guidance and funding priorities and increase funding for EMS to improve preparedness and surge capacity goals.

   • Federal agencies should increase homeland security funding for EMS and coordinate grant guidance and funding priorities to improve the preparedness of the EMS system. While the EMS system is eligible for multiple Federal programs, confusing grant guidance, ineffective outreach and the exclusion of EMS stakeholders from many state planning efforts cause EMS to receive as little as one percent of first responder funds. Federal agencies should consider requiring the involvement of the state EMS offices and others from the EMS system in the development of emergency preparedness plans and applications for federal preparedness and response funding.

3) Establish EMS-specific all-hazards preparedness standards and guidelines that will enable the measurement of homeland security preparedness.

   • DHS, HHS and the Department of Transportation should convene a panel of national EMS organizations and other experts to establish specific recommendations for preparedness of the EMS system in areas such as:

   > Personal protective equipment;

   > Surge capacity;

   > Antidotes;

   > Medical supplies (including specialized supplies for the very young and the very old);

   > Preparedness-specific EMS education;

   > Models and best practices for integration of EMS into disaster response;

   > Medical airlift capacity when airspace is shut down;

   > EMS personnel readiness; and

   > Other areas of importance as identified by the panel.

4) Conduct a nation-wide needs assessment to identify the costs and methods for bringing the nation's EMS system into compliance with the national EMS preparedness standards and guidelines. This assessment will help determine the gap between current capabilities and the EMS preparedness standards.

   • The Federal government should facilitate the performance of needs assessments to establish baseline capabilities of the EMS system. Without such needs assessments, resources will not be allocated to the areas with the greatest need. The needs assessment, standards and guidelines are critical base line information to support cooperative interagency relationships and coordinated policy development.

5) Ensure the successful development of the needs assessments and preparedness standards through a scientific analytic approach.

   • The Haddon Matrix is a well recognized and effective public health planning model for evaluating public health threats and should be used to develop EMS standards and needs assessments. Within the theoretical matrix, factors that effect patient outcome during a terrorist attack are divided into one of three categories: the host (organism sustaining disease or injury), the environment and the vector (agent that carries disease or destructive energy). Factors

are then further divided into one of three temporal categories: pre-event, event and post-event. Using the Haddon approach to evaluate terrorist attacks assures that prevention, mitigation and recovery are addressed. Policies that are systematic and sustainable must take all factors into account.

6) Federal, state and local governments should support research, modeling and development of best practices concerning the EMS system's response to disasters and major public health emergencies including its integration with the public health system and the traditional medical care system. These best practices should also identify the role of the EMS system in helping to manage surge capacity.

7) Ensure that EMS systems and other emergency agencies can communicate through interoperable communications and data systems.

- Federal, state and local funding should be provided to help EMS systems communicate with emergency responders, 911, and health care systems. These tools will ensure a more effective response to daily emergencies and better surveillance of emergency medical trends for homeland security analysis

8) Develop more effective and uniform EMS data collection mechanisms.

- The Federal government should fund efforts such as the National EMS Information System. Because this effort is already underway, it provides a low cost and effective manner to begin developing a uniform EMS data set and an effective data collection mechanism.

APPENDIX A:
LIST OF ATTENDEES FOR "IMPROVING THE ROLE AND CAPABILITIES OF EMS IN HOMELAND SECURITY PREPAREDNESS" A ROUNDTABLE DISCUSSION

Moderators:
Dr. Lewis Goldfrank, Professor and Chair of Emergency Medicine, NYU School of Medicine
Dr. George Foltin, Associate Professor of Emergency Medicine and Pediatrics

Roundtable Participants *

Advocates for EMS
- John Krohmer
- Lisa Meyer
- Mark Mioduski
- Amy Ford Souders
- Dana C. Stewart

American Academy of Pediatrics
- Paul Sirbaugh

American Ambulance Association
- Pete Evitch
- Jim O'Connor
- Brenda Staffan
- Steve Williamson

American College of Surgeons
- Arthur Cooper

American Medical Response
- John Rester

Association of Air Medical Services
- Johnny Delgado
- Ed Rupert
- Michael Van Zummeren

Brain Trauma Foundation
- Pamela Drexel
- Seth Guthartz

ComCare Alliance
- Todd Miyahira

EMSC National Resource Center
- Jane Ball

Fire Department of New York
- John Clair
- John McFarland

Greater New York Hospital Association
- Doris Varlese

International Association of Emergency Managers
- Tom Metzler

International Association of Fire Chiefs
- John Sinclair

International Association of Fire Fighters
- Jonathan Moore

National Academy of Sciences/Institute of Medicine
- Robert B. Giffin

* The following individuals and organizations participated in the roundtable. This report and all of its recommendations capture the general agreement of this group, but may not fully represent each of the individual viewpoints.

National Association of Emergency Medical Technicians
Graydon C. Lord
National Association of EMS Educators
Bruce J. Walz
National Association of EMS Physicians
Bob O'Connor
National Association of State EMS Directors
Bob Bass
National Center for Disaster Preparedness
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National Registry of Emergency Medical Technicians
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Cortez Lawrence
Department of Homeland Security, Office of State and Local Government Coordination and Preparedness
C. Gary Rogers
National Highway Traffic Safety Administration
Drew Dawson
Gamunu Wijetunge

APPENDIX B:
GLOSSARY OF SELECTED TERMS:[38]

EMS Personnel: Paid or volunteer individuals who are qualified, by satisfying formalized existing requirements, to provide some aspect of care or service within the EMS system.

Emergency Medical Services (EMS) Surge Capacity: The deployment of additional ambulances, equipment and personnel (i.e., EMTs and paramedics) resources into an area affected by a natural or man-made disaster or public health emergency to support, supplement or replace existing EMS capacity and increase the number of patients served by the EMS system. Additional EMS resources perform patient triage, decontamination, treatment and transport. Other support functions performed by EMS include extrication, search and rescue, hazard recognition, symptom surveillance and reporting, disaster shelter medical staffing and re-supply, on-scene medical stand-by, evacuation of medical facilities and homebound special needs patients, redistribution of patients to free-up receiving hospital bed space, augmentation of receiving hospital staffing, and mass immunizations.

EMS System: Any specific arrangement of emergency medical personnel, equipment and supplies designed to function in a coordinated fashion. may be local, regional, state or national.

Emergency Medical Technician (EMT): A member of the emergency medical services team who provides out-of-facility emergency care. Their certification include EMT-Basic, EMT-Intermediate and EMT-Paramedic as progressively advancing levels of education and care.

Public Health: The science of providing protection and promotion of community health through organized community effort.

Endnotes

1. The Emergency Medical Services Performance Improvement Resource Center "National Emergency Medical Services Survey." Chapel Hill, North Carolina; Submitted September 2004: 24.

2. Bureau of Justice Statistics. "Law Enforcement Statistics." http://www.ojp.usdoj.gov/bjs/lawnenf.htm.

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4. Department of Homeland Security. "Support for EMS Provided by the DHS Office of State and Local Government Coordination and Preparedness." A Report to the Committees on Appropriations of the United States Senate and House of Representatives. Washington, D.C.; May 2004: 42.

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8. The Emergency Medical Services Performance Improvement Resource Center "National Emergency Medical Services Survey." Chapel Hill, North Carolina; Submitted September 2004: 24.

9. Bureau of Justice Statistics. "Law Enforcement Statistics." http://www.ojp.usdoj.gov/bjs/lawnenf.htm.

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12. Department of Homeland Security. "Support for EMS Provided by the DHS Office of State and Local Government Coordination and Preparedness." A Report to the Committees on Appropriations of the United States Senate and House of Representatives. Washington, D.C.; May 2004: 38.

13. Ibid.

14. Department of Health and Human Services "National Bioterrorism Preparedness Program Expenditure by Critical Benchmark." 2004.

15. The National Registry of Emergency Medical Technicians. "2003 The Longitudinal EMT Attribute and Demographic Study (LEADS)" Columbus, Ohio; 2004.

16. Health Resources and Services Administration. "A National Assessment of State Trauma System Development, Emergency Medical Services Resources, and Disaster Readiness for Mass Casualty Events." Aug. 2003: 1.

17. The National Registry of Emergency Medical Technicians. "2003 The Longitudinal EMT Attribute and Demographic Study (LEADS)" Columbus, Ohio; 2004.

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22. Department of Homeland Security. "Support for EMS Provided by the DHS Office of State and Local Government Coordination and Preparedness." A Report to the Committees on Appropriations of the United States Senate and House of Representatives. Washington, D.C.; May 2004: 42.

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24. Ibid.

25. Department of Homeland Security. "Support for EMS Provided by the DHS Office of State and Local Government Coordination and Preparedness." A Report to the Committees on Appropriations of the United States Senate and House of Representatives. Washington, D.C.; February 2005: 8.

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CCPR BACKGROUND

In response to the events of September 11, 2001, Congress and the Department of Homeland Security provided New York University with federal funding to develop a university-wide, cross-disciplinary center to improve preparedness and response capabilities to terrorist threats and catastrophic events.

Drawing on each of its fourteen schools, NYU formed the Center for Catastrophe Preparedness and Response (CCPR) and initiated research projects that address issues including public health preparedness, legal issues relating to security, first-responder trauma response, and private sector preparedness.

NYU CCPR works in close partnership with the Department of Homeland Security, its Office for Domestic Preparedness, the New York City Police Department, the Fire Department of the City of New York, and the New York City Office of Emergency Management.

For more information, please visit www.nyu.edu/ccpr

CCPR STAFF

Robert Berne
Principal Investigator
Sr. VP for Health

Dr. Berne guides the Center's strategic planning and serves as liaison with University leadership. Dr. Berne served as dean of the Wagner School of Public Service from 1994 to 1997.

K. Brad Penuel
Director

Mr. Penuel, previously a project engineer with the World Bank and USAID, charts the Center's research and management strategy and serves as liaison between stakeholders such as DHS, researchers, and public/private sector partners.

Lisa Perry
Associate VP for Health Initiatives

Ms. Perry works with the Sr. Vice President/Health on the full range of health initiatives at NYU. Her portfolio includes collaborating with CCPR staff on project development and providing leadership of specific projects and inquiries.

Tim Raducha-Grace
Research Director

Mr. Raducha-Grace, a former advisor to the Chairwoman of the US Senate Homeland Security Committee, works with faculty to integrate research with ongoing federal and local efforts. He also develops targeted research to enhance homeland security policies and programs.

Tracy Todaro
Project Manager

Ms. Todaro oversees the administrative aspects of the Center's research programs. Ms. Todaro, comes to CCPR as a former Business Manager in the Department of Urology at Columbia University's College of Physicians and Surgeons.

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