POSITIONING AMERICA'S EMERGENCY HEALTH CARE SYSTEM TO RESPOND TO ACTS OF TERRORISM

A Report of the Terrorism Response Task Force
American College of Emergency Physicians

October 2002

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American College of Emergency Physicians

Terrorism Response Task Force

Task Force Chair – Nancy Auer, MD, FACEP
Board Liaison – John Skiendzielewski, MD, FACEP
Disaster Section – Carl Schultz, MD, FACEP
EMS Committee – John Brennan, MD, FACEP
Ethics Committee – Greg Larkin, MD, MS, MPH, FACEP
Federal Government Affairs Committee – Michael Pietrzak, MD, FACEP
Public Health Committee – Jon Mark Hirshon, MD, MPH, FACEP
State Legislative/Regulatory Committee – Ramon Johnson, MD, FACEP
Toxicology Section – Richard C. Dart, MD, PhD, FACEP
Well-Being Section – Charles Henrichs, MD, FACEP
Annals of Emergency Medicine – Joseph Waeckerle, MD, FACEP
American Hospital Association – Roslyne Schulman
American Public Health Association – Richard Levinson, MD, DPA
Emergency Nurses Association – Bettina Stopford, RN, BA, CEN
Emergency Medicine Residents Association – Sam Luber, MD
Joint Commission on Accreditation of Healthcare Organizations – Margaret VanAmringe
National Association of EMS Physicians – Jon Krohmer, MD, FACEP
National Highway Traffic Safety Administration – Jeff Michael, EdD
NBC Task Force Liaison - Jonathan L. Burstein, MD, FACEP
ACEP Staff Liaison – Rick Murray

EXECUTIVE SUMMARY

The devastating events of September 11, 2001, and the subsequent acts of bioterrorism through the spread of anthrax through our mail system have prompted our government to intensify public health measures to protect the American people. Federal agencies are mobilizing their resources to prepare for this threat on every front. Fire and police agencies are receiving funding and specialized training. Emergency management and public health agencies are reviewing the way they plan and prepare for disasters and epidemics. Emergency medicine, including emergency medical services systems must continue to be at the front line of yet another crisis. The reality of a bioterrorism event could cripple an already stressed system suffering from ambulance diversion and emergency department (ED) crowding. Staffing shortages within hospitals (most notably, nursing) add to a loss of elasticity within the system. The threat of terrorism through the use of weapons of mass destruction (WMD) continues to be a major issue to states and local communities across the nation. The lack of adequate and appropriate training for medical responders to a nuclear, biological, or chemical terrorist event is so severe that timely and effective patient treatment may be seriously compromised.

The American College of Emergency Physicians (ACEP) Council and Board of Directors recognized that this lack of training and resources could have a serious impact on state and local communities' medical responses to a WMD event. At its October 2001 meeting in Chicago, the Council adopted Council Resolution 36, "Weapons of Mass Destruction Preparedness Plan" that charged the College with developing a strategic plan that promotes education, research, protection of health care workers, and a coordinated emergency medical response plan for community responders to WMD.

The Terrorism Response Task Force was given three specific objectives to address. These included:

- Evaluate and monitor initiatives beneficial in strengthening preparedness of the emergency medicine community to assess and respond to weapons of mass destruction events;

- Develop a strategic plan to include short and long-term goals to promote education, research, protection of health care workers, and a coordinated emergency medicine community response plan for weapons of mass destruction events; and

- Evaluate the recommendations in the final report of the Nuclear, Biological and Chemical Task Force and advise the Board of Directors on appropriate College resources to support both initial and continuing education of the emergency medicine community in response to weapons of mass destruction events.

Recommendations

The Terrorism Response Task Force recommends the following goals to address a comprehensive approach to a community response plan for weapons of mass destruction events. We offer both short and long-term goals to achieve these strategies.

- Improve communications infrastructure**.** During disasters, communications often degrade as saturated cellular phone systems and wireless communications systems interfere with public safety communications. There is a critical need to upgrade and modernize responder communications systems and to address interoperability problems. Because it is difficult to predict the communication systems that will stay functional in a disaster, redundancy should be built into the system.

- Improve community-based planning**.** Disasters involving terrorism are community-wide concerns likely to require a broad array of resources to supplement the health care system. Local communities also need a comprehensive and effective disaster response that integrates the plans of all responders.

- Increase community capacity to deal with disasters. Community-wide disaster planning will require adequate surge capacity to address the health care needs of large numbers of casualties.

- Improve disease surveillance, disease reporting, and field laboratory identification systems**.** Clinicians must quickly detect, accurately diagnose, and effectively treat uncommon diseases. Improving the capacity of local and state public health departments, public health laboratories, and hospitals to engage in disease surveillance and disease reporting is critical in determining whether a biologic or chemical agent has been released.

- Protect first responders and ED personnel from the effects of biologic, chemical, and nuclear agents. Responders must be equipped with the necessary protective equipment and trained in the equipment's use. Responders must have priority access to vaccines, antibiotics, and other resources so they can continue to provide services to the community in the event of a terrorist act involving a biologic or chemical agent.

- Increase and enhance training programs, continuing education, and community drills for mass casualty incidents**.** Responders must be trained to detect and respond to all types of potential diseases and disasters in a coordinated and integrated way.

Short-term Strategies

Short-term strategies for WMD preparedness involve initiatives by ACEP and cooperative efforts with other stakeholders.

- Develop courses on WMD related topics that could be presented at national, regional, and state conferences and meetings.

- Develop additional self-study programs for CME credit through *Critical Decisions in Emergency Medicine* that include both the awareness and performance objectives for emergency physicians.

- Continue to lobby for funding of continuation of the NBC training curriculum in preparation for a WMD event.

- Continue to educate key policy makers on the role of emergency physicians as part of the first responder system to WMD events.

- Identify appropriate personal protective equipment (PPE) for chemical, biological, radiological, nuclear and explosive (CBRNE) events to be used by emergency medical services (EMS) and ED personnel.

- Develop clinical diagnostic and treatment guidelines for mass casualty response, especially for nuclear, biological and chemical weapons of mass destruction.

- Ensure that EDs are an integral component of public health bi-directional communications and information networks at the national, state, and community levels.

- Pursue development of information technology for electronic clinical record keeping in the emergency department and out-of-hospital setting and for rapid electronic communication with public health departments and other external agencies.

- Communicate funding source and other relevant information to chapter's officers and members.

- Establish a set of immunizations/prophylaxis priorities for ED and other EMS providers both before and during an event. Communicate these ACEP priorities and policies to appropriate government agencies and decision makers such as the Department of Health and Human Services (DHHS), the Centers for Disease Control and Prevention (CDC), and Association for Professionals in Infection Control and Epidemiology (APIC).

- Develop a resource list for physicians, nurses and EMS personnel with training/educational course recommendations.

- Identify model practices to address ED crowding in order to improve readiness for biological attacks.

Long-term Strategies

- Develop a technology-based, self-study program covering the awareness objectives and distribute it free of charge to all medical students and medical schools. (Nursing students and out-of-hospital providers are also included as target audiences for this self-study program.)

- Work with the Association of American Medical Colleges (AAMC) and associated groups to promote direct integration of the WMD awareness objectives into appropriate courses or clerkships within medical school curricula.

- Develop a set of teaching and learning materials covering the performance objectives that include both instructor and learner materials and distribute free of charge, or at minimal cost, to all emergency medicine residency programs.

- Work with the Society for Academic Emergency Medicine (SAEM), the American Board of Emergency Medicine (ABEM), the Residency Review Committee (RRC), and associated groups to promote direct integration of the WMD performance objectives into appropriate content areas of the emergency medicine core content.

- Establish clearly defined liaisons and lines of communication with governmental, professional and scientific entities (such as DHHS, Department of Defense (DOD), CDC, Occupational Safety and Health Administration (OSHA), National Institute for Occupational Safety and Health (NIOSH), Agency for Toxic Substances and Disease Registry (ATSDR), Institute of Medicine (IOM), and others) to ensure up-to-date sharing of information and to ensure ACEP's input into the decision making process.

- Identify federal funding that can be used to expand ED and hospital capacities insofar as they improve readiness for biological attacks.

- Continue to work with the nursing and EMS communities to develop training courses.

INTRODUCTION

The devastating events of September 11, 2001, and the subsequent acts of bioterrorism through the spread of anthrax through our mail system have prompted our government to intensify public health measures to protect the American people. Federal agencies are mobilizing their resources to prepare for this threat on every front. Fire and police agencies are receiving funding and specialized training. Emergency management and public health agencies are reviewing the way they plan and prepare for disasters and epidemics. Emergency medicine will continue to be at the front line of yet another crisis. The reality of a bioterrorism event could cripple an already stressed emergency medical system suffering from ambulance diversion and ED crowding. Critical staffing shortages (most notably, nursing) add to a loss of elasticity within the system.

The threat of terrorism through the use of weapons of mass destruction (WMD) continues to be a major issue to states and local communities across the nation. The lack of adequate and appropriate training for medical responders to a nuclear, biological, or chemical terrorist event is so severe that timely and effective patient treatment may be seriously compromised.

Over the past three years, ACEP developed the first phase of a training program for emergency health care responders to WMD events. A report on this first phase was released in March 2001 jointly by ACEP and the Office of Emergency Preparedness (OEP). ACEP leaders and staff are currently working closely with Congressional leaders and various federal agencies to secure funding for the next phase of the project. This phase will focus on development of a WMD training and education course for emergency medical responders. Planning, developing and implementing this new phase will be one aspect of the task force's work.

The ACEP Council and Board of Directors recognized that lack of training and resources could have a serious impact on state and local communities' medical responses to a WMD event. At its October 2001 meeting in Chicago, the Council adopted Council Resolution 36, "Weapons of Mass Destruction Preparedness Plan" that charged the College with developing a strategic plan that promotes education, research, protection of health care workers, and a coordinated emergency response plan for community responders to WMD.

The Terrorism Response Task Force was given three specific objectives to address. These included:

- Evaluate and monitor initiatives beneficial in strengthening preparedness of the emergency medicine community to assess and respond to weapons of mass destruction events;

- Develop a strategic plan to include short and long-term goals to promote education, research, protection of health care workers, and a coordinated emergency medicine community response plan for weapons of mass destruction events; and

- Evaluate the recommendations in the final report of the Nuclear, Biological and Chemical Task Force and advise the Board of Directors on appropriate College resources to support both initial and continuing education of the emergency medicine community in response to weapons of mass destruction events.

The task force was designed to include key members of the College representing diverse interests including; disaster planning, public health, ethics, EMS, federal/state governmental affairs as well as recognized subject matter experts. Other organizations were invited to participate including the American Hospital Association (AHA), American Public Health Association (APHA), Joint Commission on Accreditation of Healthcare Organizations (JCAHO), Emergency Nurses Association (ENA), Emergency

Medicine Residents Association (EMRA), and the National Association of EMS Physicians (NAEMSP). The task force members were then assigned to specific objectives and began working simultaneously on the three objectives.

The task force members met face-to-face in May 2002 in Dallas. The group leaders for each objective then reported the findings and recommendations for each objective.

INITIATIVES

The first objective of the Terrorism Response Task Force was to evaluate and monitor initiatives beneficial in strengthening preparedness of the emergency medicine community to assess and respond to weapons of mass destruction events. The workgroup was lead by John Brennan, MD, FACEP and the workgroup members included: Carl Schultz, MD, FACEP, Richard Levinson, MD, DPA, and Jon Krohmer, MD, FACEP.

Training Needs

Training programs developed by the College should focus on a comprehensive 'all-hazards' approach that includes preparing for a variety of disasters ranging from floods to flu epidemics as well as terrorism. Specific training courses addressing terrorism response for health care workers should include critical topics such as personal protective equipment (PPE), facility security, working with EMS, decontamination, and identifying alternative treatment sites. Training should include the mechanics of working with law enforcement when an act of terrorism is responsible for the event.

Resources

Resource needs must be inclusive starting with out-of-hospital care and continuing through patient discharge. For example, a list of appropriate PPE and other equipment relating to treating patients from biological and chemical agents needs to be developed and disseminated to every emergency department. Planning must include the development of standards for equipment. Community planning should consider hospitals and EMS agencies obtaining similar equipment, so equipment can be shared, if necessary, between hospitals and agencies. Personnel could be commonly trained and familiar with the community standard.

Facility Modifications/Security

Facility modifications and security plans need to be reviewed to ensure they will address the needs of the large number of patients expected from a biological or chemical terrorism incident. Most facilities are not prepared to handle more than the small numbers they see during a normal disaster drill. This review would include identifying alternate patient treatment areas both within the facility and externally as well. Security concerns range from the large numbers of patients and family who would flood the ED after a terrorism event to the access of the facility by a delivery person or even persons dressed as hospital medical personnel. Surge capacity issues should be identified and addressed as they relate to patient load associated with a disaster response.

Communications

The events of September 11, 2001 emphasized the need for redundancy in communications systems and backups to the backups. The quality of information communicated regarding the number of patients and severity of injuries is also critical for the proper response.

Identify Key Stakeholders

The College needs to identify and develop relationships with the key stakeholders at the national, state and local levels from both the government and private sectors. Key stakeholders include; American Hospital Association (AHA), American Public Health Association (APHA), Association of American Medical Colleges (AAMC), Emergency Nurses Association (ENA), Joint Commission on Accreditation of Healthcare Organizations (JCAHO), key EMS organizations, Federal Emergency Management Agency (FEMA), Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA), National Highway Traffic Safety Administration (NHTSA), Centers for Disease Control (CDC), and the Office of Homeland Security.

Comprehensive planning

A template for a comprehensive planning system that can easily be adapted by individual facilities exists in the College's text *Community Medical Disaster Planning and Evaluation Guide.* It is just one resource available.

Support for ACEP Chapters

Ways that National ACEP could support the chapters include:

- Facilitate disaster planning in cooperation with area hospitals in the same geographic area.
- Support legislation at both the national and state levels for funding.
- Facilitate partnering with other professional organizations and governmental agencies.
- Facilitate planning with public health. Facilitate better communication directly with the membership.

Legislation

ACEP should continue to lobby for support for physicians, hospitals, and EMS personnel for preparation of a WMD event. A critical and immediate need exists to educate key policy makers on the role of emergency physicians as part of the first responder system in response to WMD events.

STRATEGIC PLAN

The second objective of the Terrorism Response Task Force was to develop a strategic plan to include short and long-term goals to promote education, research, protection of health care workers, and a coordinated emergency medicine community response plan for weapons of mass destruction events. The workgroup was lead by Jonathan L. Burstein, MD, FACEP and the workgroup members included: Ramon Johnson, MD, FACEP, Jon Mark Hirshon, MD, MPH, FACEP, Charles Henrichs, MD, FACEP, Jeff Michael, EdD, Greg Larkin, MD, MS, MPH, FACEP, and Roslyne Schulman.

General Principles:

1. Emergency physicians, EMS personnel, and other ED personnel have special expertise in preparing for and responding to mass casualty events. If and when disaster strikes, emergency physicians, nurses, and other ED personnel are the frontline providers of emergency care. Therefore, emergency providers must play an integral role in prevention, public health activities, the development of surveillance networks, and rapid response plans to address the growing threat of terrorism.

2. EDs must be an integral component of public health bi-directional communications and information networks at the national, state, and community levels.

3. Immediate public and private support is needed for standards-based development of information technology for electronic clinical record keeping in the emergency department and for rapid electronic communication with public health departments and other external agencies.

4. Intergovernmental and interagency coordination is essential for the planning and deployment of assets to respond to disasters involving weapons of mass destruction and other public health emergencies.

5. Clinical diagnostic and treatment guidelines for mass casualty response, especially for nuclear, biological, and chemical weapons of mass destruction, need to be developed in concert with emergency medicine leadership for dissemination to emergency physicians and other emergency health care providers.

Specific Objectives:

<u>Education</u>

National

1. Develop education programs for members that do not duplicate other existing programs, including general awareness programs and medical management of disasters related to chemical, biological, radiological/nuclear, and explosive/incendiary devices (CBRNE).
    a. Consider the development of an updated "Advanced Disaster Life Support" program for educating emergency providers who are not emergency medicine residency trained.

2. Generate standards and recommendations for ED preparations and for training personnel.
    a. Support the use of the NBC Task Force educational guidelines.

3. Communicate funding source and other relevant information to members.
    a. Possibly via printed material (similar to the Congressional information booklet).

    b. Develop a weekly summary, possibly as a routine part of the Monday Morning Report.

    c. Maintain an updated calendar on the ACEP web site listing the different federal and state agencies, grants, meetings, timetables, deadlines, etc. related to counter-terrorism planning.

    d. Directly inform state chapter officers and appropriate section leaders/members about available grants and the grants process.

4. Identify a cadre of members with unique expertise who could act as resources to chapters and members as they do their planning.

5. Advocate for the diffusion of appropriate military technology for terrorism preparedness.

Section/Committee

1. Encourage ACEP members to provide ACEP and the EMS Section & Disaster Section newsletters with information on successful advocacy programs by the chapters and members regarding accessing and effective utilization of federal and state funds and other relevant federal and state resources for counter-terrorism.

State/Chapter

1. Educate state and local policy makers and other stakeholders on the first responder role of emergency physicians and other emergency personnel in CBRNE incidents.

2. Develop training programs to educate members about terrorism preparedness and response.

3. Identify chapter members with specific interest and expertise to serve as chapter liaisons to the national ACEP leadership.

4. Identify national leaders with specific interest and expertise to serve as resources to chapters.

Local/Membership

1. Develop training programs to educate members about terrorism preparedness and response.

2. Encourage ACEP members to provide ACEP and the EMS Section & Disaster Section newsletters with information on successful advocacy programs by the chapters and members regarding accessing and effective utilization of federal and state funds and other relevant federal and state resources for counter-terrorism

Research

National

1. Identify the current state of research regarding CBRNE disasters.

2. Assess and prioritize, in collaboration with ACEP chapters and sections, critical gaps in knowledge and technology for threat identification, mitigation, response, and follow-up related to CBRNE disasters.

3. Using this gap assessment and prioritization, advocate for increased funding of research in the areas identified regarding threat identification, mitigation, response, and follow up.

4. Encourage members to apply for Emergency Medicine Foundation (EMF) grants for research related to this topic.

5. Advocate for the funding of research in the development of emergency department data for syndromic surveillance.

6. Work with the SAEM and other appropriate specialty societies to promote research in this area.

Section/Committee

1. Encourage members to apply for grants, including EMF grants, for research related to this topic.

State/Chapter

1. Encourage members to apply for grants, including EMF grants, for research related to this topic.

Local/Membership

1. Encourage members to apply for grants, including EMF grants, for research related to this topic.

Protection Of Health Care Workers

National

1. Identify appropriate personal protective equipment (PPE) for CBRNE events to be used by EMS and ED personnel.

2. Assess the adequacy of current statute, regulations, and guidance regarding PPE:
    a. Catalog existing statute, regulation, and guidance regarding PPE (OSHA/NIOSH).
    b. Identify scientific basis for PPE recommendations.
    c. Identify needed revisions and updates for PPE for application to ED settings.
    d. Advocate for appropriate changes to statute/regulations.
    e. Encourage the development of standards for PPE.

3. Develop a resource list of PPE for ACEP member reference, with training/education recommendations.

4. Study psychosocial aspects of CBRNE and disaster events:
    a. Survey the current state of knowledge regarding these aspects.
    b. Provide references and resource recommendations for ACEP members regarding these aspects.

5. Establish a set of immunizations/prophylaxis priorities for EDs and other EMS providers both before and during an event. Communicate these ACEP priorities and policies to appropriate government agencies and decision makers such as DHHS, CDC, and ACIP. The Terrorism Response Task Force developed a policy, *Guidelines for Smallpox Vaccination for Health Care* Workers, that was approved by the Board of Directors at its September 2002 meeting.

Section/Committee

1. Utilize the expertise within sections and committees to work on the above objectives.

State/Chapter

1. Work with state authorities to clarify guidelines, laws, and regulations for emergency providers' use of PPE.

2. Advocate for state or county based funding under public safety or health systems for such equipment.

Local/Membership

1. Take a leadership role in the local EMS, ED, and hospital wide preparedness with regard to PPE, training, immunizations/prophylaxis, and psychosocial aspects of WMD.

Community Response Planning

National

1. Educate policy makers and other stakeholders about the first responder role of emergency physicians, EMS personnel, and other ED personnel in CBRNE events.

    a. Develop a position paper outlining why emergency physicians and other ED personnel are first responders. This should be widely distributed to national, state, and local policymakers.

    b. Identify and establish relationships with critical decision makers at federal, state, and local levels (or help chapters to identify critical state and local decision makers) in order to generate a wider understanding of the first responder role of emergency physicians, EMS personnel, and other ED personnel.

2. In coordination with other stakeholders (e.g. hospitals, infection control, HAZMAT, health care engineers) identify appropriate decontamination capabilities for EDs:

    a. Develop a resource list for ACEP member reference with training/education recommendations regarding decontamination activities.

3. Encourage the development of adequate medical surge capacity in communities:

    a. In coordination with the AHA, identify strategies to create additional capacity in hospitals and widely disseminate these strategies to policymakers.

    b. Work with national organizations representing hospitals, traditional first responders, and public health to facilitate the development of state, regional, and local strategies for medical surge capacity.

    c. Work with Congress and Federal agencies to provide sustained and long-term funding for state and local efforts to create medical surge capacity for mass casualty events.

4. Advocate and communicate to policymakers at the national level the need to make EMS resources and hospitals eligible for funding for counter-terrorism grants, and encourage advocacy at the state and local levels for appropriate use of these funds.

5. Identify funding sources and other related access information.

6. Advocate for a formal role for emergency physicians in the HRSA hospital preparedness grant funding process.

7. Work with federal agencies (HHS, DOD, FEMA, DOJ) and encourage cooperation and coordination of efforts, especially training efforts, among federal and state agencies and with other organizations.

8. Work with the JCAHO to keep standards and practices current and appropriate.

Section/Committee

State/Chapter

1. Participate in State Advisory Committee related to CDC and HRSA funding for bioterrorism preparedness.

4. Facilitate and encourage member participation in community-wide planning for medical surge capacity.

5. Identify innovative or model practices within the state regarding addressing the need for medical surge capacity plans and communicate these to ACEP at a national level.

4. Advocate for the incorporation of incident command systems within local hospitals and integrate these systems with community-wide plans.

5. Strengthen the chapters' relationships with law enforcement agencies.

6. Strengthen the chapters' relationship with public health, EMS, and emergency management agencies.

Local/Membership

1. Advocate for the incorporation of incident command systems within local hospitals and integrate these systems with community-wide plans.

2. Participate in the Local Emergency Planning Committee (LEPC), community emergency management terrorism response committee, or their equivalents.

Surveillance/Communication

National

1. Identify existing informatics systems that have applications for preventing and mitigating CBRNE events, including disease and syndromic surveillance systems, real-time hospital and out-of-hospital monitoring systems, and patient tracking systems.

2. Together with other stakeholder organizations, advocate for improvements, standardization and funding for information technology with applications for preventing and mitigating CBRNE events including: disease and syndromic surveillance systems; real-time hospital and out-of-hospital capacity monitoring systems; and patient tracking systems. Such systems should, to the maximum extent possible, utilize existing IT systems and data that is already being collected and involve automatic retrieval of relevant data.

3. Advocate for funding to upgrade, modernize and link frontline responder communications systems and to address interoperability problems.

Section/Committee

1. The Public Health Committee should review and make recommendations to the ACEP Board to optimize ED capability to detect and respond to public health threats.

State/Chapter

1. **As above at the state and county/municipal level.**

Local/Membership

1. **As above at local level.**

RECOMMENDATIONS OF THE NBC TASK FORCE

The third objective of the Terrorism Response Task Force was to evaluate the recommendations in the final report of the NBC Task Force and advise the Board of Directors n appropriate College resources to support both initial and continuing education of the emergency medicine community in response to weapons of mass destruction events. The workgroup was lead by Joseph Waeckerle, MD, FACEP and the workgroup members included; Sam Luber, MD, Richard Dart, MD, PhD, FACEP and Bettina Stopford, RN, BA, CEN.

Summary of Recommendations for Emergency Physicians from the NBC Task Force Final Report:

- Develop a technology-based, self-study program covering the awareness objectives and distribute it free of charge to all medical students and medical schools. (Nursing students and out-of-hospital providers are also included as target audiences for this self-study program).

- Work with the AAMC and associated groups to promote direct integration of the WMD awareness objectives into appropriate courses or clerkships within medical school curricula.

- Develop a set of teaching and learning materials covering the performance objectives that include both instructor and learner materials and distribute free of charge, or at minimal cost, to all emergency medicine residency programs.

- Work with ACEP, SAEM, ABEM, RRC, and associated groups to promote direct integration of the WMD performance objectives into appropriate content areas of the emergency medicine core content.

- Develop a self-study program for CME credit that includes both the awareness and performance objectives for emergency physicians who are currently in practice.

- Develop regularly updated self-study refresher programs for CME credit.

- Develop instructor-led materials (based on the self-study program) so courses could be presented at national, regional, and state conferences and meetings.

The NBC Final Report also addressed recommendations for emergency nurses and EMS personnel. While the College may not have a direct impact on these two areas, it was felt we should continue to work closely with the nursing and EMS community to pursue and implement these recommendations within their respective fields.

Summary of Recommendations for Emergency Nurses from the NBC Task Force Final Report

- Develop a technology-based, interactive, self-study program covering the awareness objectives and distribute it free of charge to all nursing schools. (All medical students and out-of-hospital providers are also included as target audiences for this self-study program).

- Work with the American Nurses Association (ANA), ENA, National League for Nursing (NLN), state boards of nursing, and other nursing education organizations to promote direct integration of the WMD awareness objectives into appropriate courses or clinical experiences within nursing education curricula.

- Develop a continuing medical education (CME) course covering the WMD performance objectives that could be delivered using a variety of formats, including instructor-based and paper-based self-study, and provided free of charge to all emergency nurses.

- Develop self-study and instructor-led refresher programs for CME and recertification of WMD knowledge and skills.

- Work with AHA, JCAHO, APIC, and associated groups to promote the integration of the WMD content into already established hospital training.

Summary of Recommendations for EMT Training from the NBC Task Force Final Report

- Develop course materials (including both instructor and learner resources) covering the WMD awareness and performance objectives that could be delivered as an instructor-led course and distributed free of charge, or at minimal cost, to state EMS directors, state emergency management directors, state chiefs of police associations, state ENA, ACEP chapters, and state hospital associations.

- Work with the National Association of State Emergency Medical Services Directors (NASEMSD), National Association of Emergency Medical Services Physicians (NAEMSP), ACEP, American College of Surgeons (ACS), and other organizations to promote the acceptance of the WMD awareness- and performance-level course as part of state educational programs for all EMTs.

- Work with the National Association of Emergency Medical Technicians (NAEMT), National Registry of Emergency Medical Technicians (NREMT), National Association of State Emergency Medical Directors (NASEMSD), International Association of Fire Fighters (IAFF), National Association of Emergency Medical Services Physicians (NAEMSP), ACEP, and associated groups to promote direct integration of the WMD content into the US Department of Transportation (DOT)/National Highway Safety Traffic Administration's (NHSTA) National Standard Curriculum for all EMTs (EMT-B, EMT-I, and EMT-P)

- Offer the course developed for initial training of all EMT students as continuing medical education (CME) so that practicing EMTs who have not completed the course could gain WMD performance-level knowledge and skills.

- Develop a regularly updated refresher course using self-study and instructor-led formats for CME and reverification of WMD knowledge and skills.

RECOMMENDATIONS

The Terrorism Response Task Force recommends the following goals to address a comprehensive approach to a community response plan for weapons of mass destruction events. We had then identified both short and long-term strategies to achieve these goals.

- Improve communications infrastructure. During disasters, communications often degrade as saturated cellular phone systems and wireless communications systems interfere with public safety communications. There is a critical need to upgrade and modernize responder communications systems and to address interoperability problems.

- Improve community-based planning. Disasters involving terrorism are community-wide concerns likely to require a broad array of resources to supplement the health care system. Local communities also need comprehensive and effective disaster response that integrates the plans of all responders.

- Increase community capacity to deal with disasters**.** Community-wide disaster planning will require adequate medical surge capacity to address the health care needs of large numbers of casualties.

- Improve disease surveillance, disease reporting, and field laboratory identification systems**.** Clinicians must quickly detect, accurately diagnose, and effectively treat uncommon diseases. Improving the capacity of local and state public health departments, public health laboratories, EMS systems, and hospitals to engage in disease surveillance and disease reporting is critical to determining whether a biologic or chemical agent has been released.

- Protect first responders and ED personnel from the effects of biologic, chemical, and nuclear agents**.** Responders must be equipped with the necessary protective equipment and trained in the equipment's use. Responders must have priority access to vaccines, antibiotics, and other resources so they can continue to provide services to the community in the event of a terrorist act involving a biologic or chemical agent.

- Increase and enhance training programs, continuing education, and community drills for mass casualty incidents**.** Responders must be trained to detect and respond to all types of potential diseases and disasters in a coordinated and integrated way.

Short-term Strategies

Short-term strategies for WMD preparedness involve initiatives by ACEP and cooperative efforts with other stakeholders.

- Develop courses on WMD related topics that could be presented at national, regional, and state conferences and meetings.

- Develop additional self-study programs for CME credit through Critical Decisions that includes both the awareness and performance objectives for emergency physicians who are currently in practice.

- Continue to lobby for funding for continuation of the NBC training curriculum in preparation for a WMD event.

- Continue to educate key policy makers on the role of emergency physicians and EMS personnel as part of the first responder system to WMD events.

- Identify appropriate personal protective equipment (PPE) for chemical, biological, radiological, nuclear and explosive (CBRNE) events to be used by EMS and ED personnel.

- Develop clinical diagnostic and treatment guidelines for mass casualty response, especially for nuclear, biological and chemical weapons of mass destruction.

- Ensure EDs and EMS systems are an integral component of public health bi-directional communications and information networks at the national, state, and community levels.

- Pursue development of information technology for electronic clinical record keeping in the emergency department and out-of-hospital settings for rapid electronic communication with public health departments and other external agencies.

- Communicate funding source and other relevant information to chapter's officers and members.

- Establish a set of immunizations/prophylaxis priorities for ED department and other EMS providers both before and during an event. Communicate these ACEP priorities and policies to appropriate government agencies and decision makers such as DHHS, CDC, and ACIP.

- Develop a resource list for physicians, nurses, and EMS personnel with training/educational course recommendations.

- Identify model practices to address ED crowding in order to improve readiness for biological attacks.

Long-term Strategies

- Develop a technology-based, self-study program covering the awareness objectives and distribute it free of charge to all medical students and medical schools. (Nursing students and out-of-hospital providers are also included as target audiences for this self-study program).

- Work with the AAMC and associated groups to promote direct integration of the WMD awareness objectives into appropriate courses or clerkships within medical school curricula.

- Develop a set of teaching and learning materials covering the performance objectives that include both instructor and learner materials and are distributed free of charge, or at minimal cost, to all emergency medicine residency programs.

- Work with SAEM, ABEM, RRC, and associated groups to promote direct integration of the WMD performance objectives into appropriate content areas of the emergency medicine core content.

- Establish clearly defined liaisons and lines of communication with governmental, professional and scientific entities (such as DHHS, DOD, CDC, OSHA, NIOSH, ATSDR, IOM and others) to ensure up to date sharing of information and ACEP's input into the decision making process.

- Identify federal funding that can be used to expand ED and hospital capacities insofar as they improve readiness for biological attacks.

- Continue to work with the nursing and EMS communities to develop training courses.

APPENDIX

NUCLEAR, BIOLOGICAL, AND CHEMICAL TERRORISM

MAIN POINTS

- Emergency physicians are serving with firefighters, police, and EMS providers as the nation's first responders to disasters and acts of terrorism.

- To save lives in a bioterrorist attack, emergency physicians and nurses must be well trained to detect and treat biologic agents.

- An ACEP task force has identified the core content of a national training program to detect and respond to nuclear, chemical, and biologic agents, under a grant from the U.S. Department of Health and Human Services.

- The nation needs a real-time disease surveillance system linking emergency departments across regions with state public health departments and nationally with the Centers for Disease Control and Prevention to serve as an early warning system for biologic, chemical, and nuclear agents.

- ACEP is advocating for Congress to appropriate funding for the training program and the surveillance system, both of which are included in the "Public Health Security and Bioterrorism Preparedness Act" of 2002, enacted by Congress and signed by the President.

- Emergency physicians are essential to ensuring that hospitals and communities are prepared for disasters and that the nation is prepared to respond to terrorism. They must have primary roles in the medical aspects of disaster planning, emergency medical management, and patient care.

Q. ***What are nuclear, biological, and chemical terrorism?***

A. The United States faces a real threat of terrorism, not only from conventional weapons, but also from weapons of mass destruction, which may be nuclear, chemical, or biological. While future terrorist activities may continue to involve bombs and firearms to promote their causes, they also may involve weapons that are increasingly lethal.

Intentional or unintentional release of a chemical or biological warfare agent in a community has the potential to create thousands of casualties, overwhelming local health resources. Use of a weapon of mass destruction would place major strains on local emergency responders, the first line of defense. Since September 11, great strides have been made to prepare for terrorist attacks, but the United States must take more steps to be adequately prepared.

NUCLEAR/RADIATION TERRORISM

Nuclear weapons are either explosive (from release of atomic energy through fission or fusion) or radiological. Fear of nuclear reprisal and the difficulties of manufacturing a nuclear weapon may serve as deterrents to their use, although once used, they can continue to inflict damage for years. A "dirty bomb" is a conventional explosive salted with radioactive isotopes to contaminate a wide area. Its destructive power would depend on the size of the conventional bomb and the volume and nature of the nuclear material.

In a nuclear explosion, bomb materials expand rapidly, producing a high-pressure pulse, or shock wave. The shock wave moves rapidly out from the exploding bomb, accompanied by winds greater than hurricane force. The high temperatures of the explosion form a fireball — an extremely hot incandescent mass of gas. That fireball emits a flash of heat radiation that spreads over large areas, with steadily increasing intensity. Radiation, when absorbed by the body, can cause serious injury.

Heat radiation from a nuclear explosion can cause flash burns on exposed skin and initiate fires as a secondary effect of the blast wave. Radiation exposure also may occur without a nuclear blast, which is just as deadly.

BIOLOGICAL TERRORISM

Biological weapons are weapons of mass destruction that can either be pathogens (disease-causing organisms, such as a virus or bacteria) or toxins (poisons of biological origin). Of all the weapons of mass destruction, these weapons pose perhaps the greatest threat to humanity.

These extremely lethal substances can be disseminated by various means, including aerial bombs, aerosol sprays, explosives, and food or water contamination. Depending on atmospheric conditions and the agent itself, clouds of infectious material could travel several hundred kilometers in a particle size that, when inhaled, is delivered to the terminal airways. However, multiple factors, including particle size of the agent, stability of the agent, wind speed, wind direction, and atmospheric conditions can alter the effectiveness of a delivery system.

Both pathogens and toxins are slow acting, when compared with most chemical weapons. They are invisible, odorless, and tasteless when dispersed as a small-particle aerosol. The lag time between infection and appearance of symptoms may make it difficult to determine the exact time or place of a bioterrorist attack.

Mass casualties are likely because contagious materials, which are transmissible from person to person, can spread rapidly in an urban environment or with mass transportation. Potential biological agents can be classified into major groups:

- Bacteria: Examples include anthrax (*Bacillus anthrax*), pneumonic plague, and tularemia (Francisella *tularensis).* Symptoms may not occur for 1 to 5 days and are usually fatal without swift treatment.
- Rickettsiae: An infectious agent, such as *Coxiella burnetii*, which causes Q fever.
- Viruses: Examples include smallpox, equine encephalitis, and viral hemorrhagic fever**,** which can be genetically modified to increase their deadliness.
- Yeasts and fungi that can be used to produce biological weapons.
- Toxins (poisonous chemicals, often proteins, produced by microbes, plants, or animals) include:
  —Botulism (*Clostridium botulinum)*, which causes acute food poisoning that produces muscular paralysis resulting in death;
  —Ricin, derived from castor bean plants whose lethality is that of nerve gasses; and
  —Mycotoxins which produce nausea, vomiting, diarrhea, skin irritation and potential fatalities.

Effects of a biological agent may not occur until days after an attack, because an organism's incubation periods can range from 3 to 7 days. Biological agents do not result in obvious external

characteristics that distinguish them from everyday illnesses such as flu (influenza), pneumonia, or chicken pox. Therefore, detecting them, even when symptoms occur, may be difficult. Treatment must be initiated as quickly as possible.

The potential number of casualties from an anthrax attack may be staggering. In fact, a biological attack on a major city could approximate the lethality of a nuclear explosion. Only if victims can be identified and treated aggressively within the first 24 to 48 hours of exposure, will the number of deaths be decreased. In the case of smallpox or plague, which are highly contagious, secondary and tertiary cases will occur, unless it is treated early. Because the number of deaths potentially could be overwhelming, every hospital in a large city will be involved if a major incident occurs.

CHEMICAL TERRORISM

Like nuclear weapons, chemicals are considered weapons of mass destruction. Technological advances, easy access to raw materials, and availability of technical information (e.g., the Internet) may contribute to the proliferation of chemical warfare agents.

Symptoms of chemical agents vary according to their characteristics, toxicity, and primary site of action. Nerve agents and cyanides are the most lethal. Preparing for chemical incidents should involve education and training of emergency personnel, disaster planning, public education, deployment of specialized teams, and stockpiling of appropriate antidotes.

Chemical agents can be potentially catastrophic, impacting thousands. Typically, they fall into several categories.

- Nerve agents (e.g., tabun, sarin, VX, soman) affect the transmission of nerve impulses. They are extremely toxic and have a rapid effect, causing death within 15 minutes of exposure to high concentrations when absorbed through the skin or respiratory tract. As a gas, aerosol, or liquid, a nerve agent enters the body through inhalation or through the skin. Poisoning also can occur through consuming contaminated liquids or foods.

Symptoms of nerve agent exposure include increased production of saliva, runny nose, feelings of pressure on the chest, constriction of eye pupils, accompanied by headache. Other symptoms can be tiredness, slurred speech, hallucinations, and nausea. High doses can cause difficulty breathing, coughing, cramping, vomiting, as well as involuntary urination and defecation. The victim also may suffer convulsions and lose consciousness. Death by nerve agents is usually by suffocation.

- Blister Agents (e.g., mustard gas, lewisite) cause wounds on the skin resembling burns and blisters and are highly irritating to the eyes. Considered primarily incapacitating agents, they produce severe injuries. Mustard gas has an odor of rotten mustard and attacks the respiratory system when inhaled, as well as causes internal and external bleeding. Unlike other chemical agents, symptoms are delayed, beginning 4 to 12 hours after exposure. With extreme exposure, mustard gas is fatal, with the most common cause of death being complications of lung injury. Lewisite penetrates ordinary clothing and even rubber, and when absorbed through the skin, may be fatal. Potential long-term adverse health outcomes include blindness, cancer, and chronic lung impairment.

- Choking agents (e.g., chlorine gas, phosgene gas) affect the respiratory system. Chlorine gas has a choking smell, and inhalation can cause suffocation, constriction of the chest, tightness in the throat. After severe exposure, the lungs can fill with fluid, resulting in potentially fatal

injuries. Phosgene is a colorless, poisonous gas that smells like musty hay.

When inhaled, it reacts with water in the lungs to form hydrochloric acid and carbon monoxide. Inhalation causes severe lung injury, the full effects appearing several hours after exposure. Chronic lung damage is a potential long-term health consequence of exposure.

- Cyanides (formerly known as "blood agents") are highly toxic, and in sufficient concentrations can rapidly cause death within 5 minutes of inhalation. They are most likely inhaled, although both gas and liquid hydrogen cyanide, as well as cyanide salts in solution, can be absorbed through the skin. If hydrogen cyanide has been inhaled, initial symptoms are restlessness and increased respiratory rate, giddiness, headache, palpitations and respiratory difficulty. Later symptoms are vomiting, convulsions, respiratory failure, and unconsciousness.

Chemically contaminated patients may pose serious problems for emergency care providers, because of secondary contamination. Any emergency medical or public health response to a major incident involving a chemical warfare agent will require coordination among local, state, and federal organizations.

Successful rescue may involve decontamination — evacuation from contaminated areas and removing contaminated clothes. Rapid decontamination of the skin may be needed if a person has been exposed to the liquid or aerosolized form of certain agents. Rapid identification of the agent will be essential to determining appropriate medical and public health interventions.

Poison control centers will be an important resource to provide valuable information about the characteristics of agents, agent toxicology, clinical effects, and medical management. In addition, the use of public warning systems will be critical to inform the community about the nature of the incident and appropriate measures to protect themselves.

Q. ***How can emergency departments be prepared to respond effectively to terrorism?***

A. Emergency physicians and nurses must be well trained to detect and treat biologic agents. Congress must appropriate funding for a national training program included in the Public Health Security and Bioterrorism Preparedness Act of 2002.

The nation needs a real-time disease surveillance system linking emergency departments across regions with state public health departments and nationally with the Centers for Disease Control and Prevention to serve as an early warning system for biologic, chemical, and nuclear agents. Congress must appropriate funding for the system included in the Public Health Security and Bioterrorism Preparedness Act of 2002.

Policymakers must include emergency physicians and nurses in any definitions of first responders to disasters and acts of terrorism. This will ensure they play a primary role in disaster planning and are considered in any national resource allocations and protective measures.

As a founding member of the Partnership for Community Safety, ACEP is working with a growing coalition of first responders to terrorism to advocate for sustained comprehensive readiness efforts.

Q. ***What kind of training for emergency personnel is needed?***

A. Training must be consistent across the United States and be tailored to the roles of medical providers.

The program must be delivered through standard methods of training and certification.

An ACEP task force identified the core content of a medical training program to prepare health care professionals for a terrorist attack under a grant from the U.S. Department of Health and Human Services. The program is part of an ongoing federal effort to prevent and respond to terrorism in the United States.

Q. ***What has been the model for community responses to disasters?***

A. Most hospitals have a policy to respond to a hazardous materials (HAZMAT) incident. The current HAZMAT model, which serves as a planning framework for community response, emphasizes a sentinel event occurring, the expectation of rapid detection and identification of the offending substance, and reliance on decontamination, especially on scene by first responders. This may be inadequate for some chemical agents and nearly all biological agents**.** Because of the unique characteristics of weapons of mass destruction, a HAZMAT policy will be insufficient for this type of response.

Q. ***What can the public do?***

A. People should be assured there is no need to personally stockpile antibiotics and gas masks. The length of time that antibiotics remain useful varies, and increased use by the public could result in bacterial infections resistant to antibiotics — another significant public health problem. Antibiotics for treating anthrax also are expensive and must be taken for long periods of time. The CDC maintains stockpiles of pharmaceuticals, which can reach victims anywhere in the continental U.S. within 12 hours. Gas masks would be useless against bioterrorism unless people wear them at all times, and can be dangerous.

For any kind of disaster, it's a good idea to have a disaster supply kit, which includes such items as water, food, battery-powered radio, flashlights and extra batteries, first aid kit and manual, blankets, duct tape, matches in a waterproof container, medications and photocopies of prescriptions, list of important phone numbers, special items for babies and the elderly, spare set of car keys, credit card and cash, and area map.

For more information on this and other topics, visit www.ACEP.org.

ACEP Policy Statement

Guidelines for Smallpox Vaccination for Health Care Workers

Approved by the ACEP
Board of Directors
September 2002

The American College of Emergency Physicians (ACEP) believes that decisions regarding smallpox vaccinations for health care workers in response to possible terrorist threats or acts should be based on sound clinical judgment, sound public health principles, and local threat assessment information.

Health care workers, especially physicians and nurses, must be educated about and have access to appropriate resources regarding the recognition and treatment of smallpox, as well as the indications and contraindications for vaccination. Any smallpox vaccination initiative needs to be well considered, and careful screening of all participants is critical. In the absence of an index case or confirmation that a smallpox attack is imminent, vaccination should remain voluntary. If vaccination is considered likely by the government, ACEP urges the government to promote research into developing more effective vaccines with a higher patient safety profile.