NATIONAL DEFENSE RESEARCH INSTITUTE
and RAND HEALTH

CHILD POLICY
CIVIL JUSTICE
EDUCATION
ENERGY AND ENVIRONMENT
HEALTH AND HEALTH CARE
INTERNATIONAL AFFAIRS
NATIONAL SECURITY
POPULATION AND AGING
PUBLIC SAFETY
SCIENCE AND TECHNOLOGY
SUBSTANCE ABUSE
TERRORISM AND HOMELAND SECURITY
TRANSPORTATION AND INFRASTRUCTURE

This PDF document was made available from www.rand.org as a public service of the RAND Corporation.

Jump down to document

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world.

Support RAND

Purchase this document
Browse Books & Publications
Make a charitable contribution

For More Information

Visit RAND at www.rand.org
Explore RAND National Defense Research Institute
RAND Health
View document details

Limited Electronic Distribution Rights

This document and trademark(s) contained herein are protected by law as indicated in a notice appearing later in this work. This electronic representation of RAND intellectual property is provided for non-commercial use only. Permission is required from RAND to reproduce, or reuse in another form, any of our research documents for commercial use.

Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
2004		**00-00-2004 to 00-00-2004**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
triage for Civil Suppport. Using Military Medical Assets to Respond to Terrorist Attacks	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **National Defense Research Institute,1776 main Street,PO Box 2138,Santa Monica,CA,90407**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES
The original document contains color images.

14. ABSTRACT
see report

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**		**204**	

This product is part of the RAND Corporation monograph series. RAND monographs present major research findings that address the challenges facing the public and private sectors. All RAND monographs undergo rigorous peer review to ensure high standards for research quality and objectivity.

Triage for Civil Support

Using Military Medical Assets to Respond to Terrorist Attacks

Gary Cecchine, Michael A. Wermuth, Roger C. Molander,
K. Scott McMahon, Jesse Malkin, Jennifer Brower,
John D. Woodward, Donna F. Barbisch

Prepared for the Office of the Secretary of Defense
Approved for public release, distribution unlimited

NATIONAL DEFENSE RESEARCH INSTITUTE and
RAND HEALTH

The research described in this report was sponsored by the Office of the Secretary of Defense (OSD). The research was conducted jointly by RAND Health and the RAND National Defense Research Institute, a federally funded research and development center supported by the OSD, the Joint Staff, the unified commands, and the defense agencies under Contract DASW01-01-C-0004.

Library of Congress Cataloging-in-Publication Data

Triage for civil support : using military medical assets to respond to terrorist attacks / Gary Cecchine ... [et al.].
p. cm.
"MG-217."
Includes bibliographical references.
ISBN 0-8330-3661-0 (pbk. : alk. paper)
1. United States—Armed Forces—Medical care. 2. Civil defense—United States. 3. United States—Armed Forces—Civic action. I. Cecchine, Gary.

UH223.T697 2004
363.34'97—dc22

2004018243

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

RAND® is a registered trademark.

© Copyright 2004 RAND Corporation

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from RAND.

Published 2004 by the RAND Corporation
1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
1200 South Hayes Street, Arlington, VA 22202-5050
201 North Craig Street, Suite 202, Pittsburgh, PA 15213-1516
RAND URL: http://www.rand.org/
To order RAND documents or to obtain additional information, contact
Distribution Services: Telephone: (310) 451-7002;
Fax: (310) 451-6915; Email: order@rand.org

Preface

Even before the events of September 11, 2001, threat assessments suggested that the United States should prepare to respond to terrorist attacks inside its borders. This report documents research into the use of military medical assets to support civil authorities in the aftermath of a chemical, biological, radiological, nuclear, or conventional high explosives attack inside the United States. This study, which was conducted between 2001 and 2003, initially focused on chemical and biological terrorist incidents, but was expanded after the attacks of September 11.

This report should be of interest to those in the U.S. Congress, Department of Defense, Department of Homeland Security, Department of Health and Human Services, and state and local governments, and to others who are interested in the subject of military support to civil authorities.

The Advanced Systems and Concepts Office of the Defense Threat Reduction Agency sponsored this research. It was carried out jointly by the Center for Military Health Policy Research and the International Security and Defense Policy Center of the RAND National Defense Research Institute (NDRI). NDRI, a division of the RAND Corporation, is a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the unified commands, and the defense agencies. The Center for Military Health is a joint endeavor of RAND Health and NDRI.

For more information on the RAND International Security and Defense Policy Center, contact the center's director, James Dobbins by e-mail at James_Dobbins@rand.org; by phone at 310-393-0411, extension 5134; or by mail at RAND, 1200 Main Street, Arlington, VA 22202-5050.

Contents

Preface iii
Figures ix
Tables xi
Summary xiii
Acronyms xxi

CHAPTER ONE
Introduction 1
Background 1
Research Objectives and the Influence of September 11 2
Research Methods 3
Terminology 4
  Terrorism 4
  CBRNE Versus Weapons of Mass Destruction 4
How This Report Is Organized 5

CHAPTER TWO
The Military Health System and Military Support to Civil Authorities 7
The Two Primary Missions of the Military Health System 7
  The Military Health System Missions Share Resources 8
  Military Medical Assets 9
  Mission Medical Assets 10
  Infrastructure Medical Assets 11
DoD Organization, Guidance, and Planning 11
  Organization for Military Operations 11
  Guidance 16
  Planning 16
Limitations to Consider When Planning for Military Assistance 18
  Military Assets May Be Engaged in Other Missions 18
  Military Assets Are Maintained at Various Levels of Readiness Based on Wartime Requirements 18

CHAPTER THREE
The Evolution of Structures, Systems, and Processes for Domestic Preparedness 19
Recommendations from National Commissions 19
New Players and New Roles in Homeland Security 21
The Office of Homeland Security and the National Strategy 21
The Department of Homeland Security 22
Homeland Security Presidential Directive-5 22
The National Response Plan 23
The Role of DoD in Response: An Overview 24
The National Disaster Medical System 24
Other DoD Directives Related to Civil Support 24
The Director of Military Support 25
The Assistant Secretary of Defense for Homeland Defense 25
U.S. Northern Command 25

CHAPTER FOUR
Legal and Other Barriers to Military Support to Civil Authorities 27
Constitutional and Historical Bases for Use of the Military Domestically 27
Statutory and Regulatory Authorities Enabling the Use of Military Assets to Support Civil Authorities 28
Constitutional Authority 28
Congressional Authority: Posse Comitatus Act and Its Progeny 28
Congressional Authority: Civil Disturbance (or Insurrection) Statutes 29
Congressional Authority: Counterdrug and Related Statutes 30
Congressional Authority: Disaster Relief and The Stafford Act 31
Congressional Authority: Counterterrorism and Weapons of Mass Destruction 32
Congressional Authority: Quarantines, Evacuations, and Curfews 33
Congressional Authority: New Authority for Use of the Reserve Components 34
Constraints on the Exercise of Explicit Authority 34
Executive Authority: The President's Residual Authority 36
Executive Authority: Martial Law 37
Executive Authority: Executive Order 38
Executive Authority: DoD Policy on Military Assistance in Civilian Emergencies 38
Legal Liabilities Implicated by the Use of Military Medical Assets to Support Civil Authorities 39
Liability Under the Federal Tort Claims Act of 1946 39
Liability Under Section 1983 and *Bivens* for Violations of Constitutional Rights 41
Liability Related to the Management of Property, People, and Information 42
Distinguishing Between Homeland Defense and Civil Support 43
Nonlegal Constraints on the Use of the Military 44
Diffuse Nature of Authority 44
Reluctance to Seek Federal Assistance 44
Apprehension About Military Assistance 44
Cultural Barriers 45
Capabilities 45
Requirements Identification 45

Conclusions 45
Recommendation 46

CHAPTER FIVE
Military Medical Support to Civil Authorities: Historical Case Studies 47
DoD's Role in Medical Response 47
Research Methods for Case Studies 48
Hurricane Andrew Background 49
Government and Military Response to Hurricane Andrew 51
Hurricane Marilyn Background 55
Government and Military Response to Hurricane Marilyn 55
Tropical Storm Allison Background 58
Government and Military Response to Tropical Storm Allison 59
What Lessons Can Be Learned from These Case Studies? 62
A Conceptual Framework for Response 64
Decentralized Versus Centralized Response 64
Civilian Versus Military Response 66

CHAPTER SIX
Exercise-Based Studies of Potential Military Medical Support to Civil Authorities 69
Objective 69
Exercise Methods 70
Exercises Were Based on an Established Methodology 70
The Analytic Framework for the Exercise 72
The Design and Testing Process Included Consideration of a Menu of Potential Issues 73
Terrorist Attack Scenarios 74
The Georgia Exercise: Smallpox Attack 75
Background 75
Georgia Emergency Response Services 76
The Threat and the Scenario 76
The Exercise 77
Exercise Results: Issues and Observations 80
The California Exercise: Radiological Dispersion Device Attack 83
Background 83
California Emergency Response Services 84
The Threat and the Scenario 85
The Exercise 85
Exercise Results: Issues and Observations 90
Conclusions 94

CHAPTER SEVEN
Conclusions and Recommendations 97
Conclusions 97
Recommendations 100

APPENDIX
A. Interview Protocol 103
B. Organizations Interviewed and Exercise Participants 105
C. DoD Directives Related to Civil Support 113
D. Materials Used in Georgia Exercise 115
E. Smallpox Model Used in the Georgia Exercise 167
F. Excerpt of Quadrennial Defense Review 171

Bibliography 173

Figures

6.1. "The Day After . . ." Exercise Methodology 71
6.2. Temporal Histories for Various Types of Terrorist Attacks 73
E.1. Smallpox Model Disease Stages 167

Tables

2.1. Types of DoD Mission Medical Assets 12
2.2. DoD Infrastructure Medical Assets 13
5.1. DMATs Providing Relief in the Aftermath of Hurricane Andrew 52
5.2. Timeline of the Response to Hurricane Marilyn 58
5.3. Number and Types of U.S. Air Force EMEDS (59th Medical Wing) Personnel Deployed in Response to Tropical Storm Allison 61
E.1. Smallpox Incubation Time Distribution 168
E.2. Dwelling Time Distribution of Mortality Relative to Rash 169

Summary

At the request of the Advanced Systems and Concepts Office (ASCO) of the Defense Threat Reduction Agency (DTRA), RAND conducted this research and analysis based on the likelihood that Department of Defense (DoD) medical assets would be called upon to provide support to civil authorities in the aftermath of a terrorist attack. Originally focused on chemical or biological attacks, it was expanded, following the attacks of September 11, to include any terrorist attack involving chemical, biological, radiological, nuclear, or conventional high explosives (CBRNE) weapons.

Research Objectives

The three original research goals were to (1) identify DoD medical assets for response, (2) identify legal and other barriers to such a response, and (3) propose operational guidelines to facilitate civil-military cooperation. After September 11 and as a result of other efforts at various levels of government, the methodology of the research reported here was altered from its original design. Instead of cataloging DoD medical assets and postulating gaps in the civilian system, the research design took a more bottom-up approach, which was manifested in the substantial expansion of scenario-oriented exercises in which senior local, state, and federal officials were asked to participate. The following questions guided this research:

- Under what circumstances could military medical assets be requested?
- What sort of military assets or capabilities are likely to be requested?
- Are there appropriate military medical assets and related planning processes for civil support?
- What are the legal (and other) barriers to military support to civil authorities, and how can they be overcome, if necessary?

Research Methods

RAND conducted reviews of relevant literature and other documents, including peer-reviewed literature, government reports, reports by nongovernmental agencies, and guidance and operational documents at the local, state, and federal levels. Additionally, a complete legal review was conducted to assess the current status of relevant statutory and regulatory authorities and restrictions, and to assess the current status of case law interpretation of those statutes and regulations.

RAND also conducted historical case studies that were focused on instances in which military medical assets were called on to assist civil authorities following natural disasters. Finally, two exercises—one for a smallpox attack in Georgia and one for a "dirty bomb" attack in California—were conducted. These exercises included senior officials from local, state, and federal agencies.

Historical Case Studies of Military Medical Support to Civil Authorities

In Chapter Five, we examine DoD's significant historical role in providing civil support, including medical support. We discuss several case studies of relief efforts by the DoD following three major U.S. natural disasters—Hurricane Andrew (1992), Hurricane Marilyn (1995), and Tropical Storm Allison (2001).

For Hurricane Andrew relief efforts, DoD initially responded by transporting several Disaster Medical Assistance Teams (DMATs) to provide emergency care to hundreds of patients. That support was expanded to include medical logistical support, specialty support care for animals, pest control, and water sampling. Despite generally positive reviews about the military's support, there were complaints that the DoD's reaction was too slow, that a decision to deploy an entire military hospital was ill advised, that the military did not deploy with medications needed by the civilian populace, and that coordination among military assets was less than satisfactory.

For Hurricane Marilyn, the military deployed electrical generator support, a field assessment team, and eventually deployed a combat support hospital (CSH). Nevertheless, due to glitches in the request for the CSH, it did not open until 15 days after the hurricane. For that and other reasons, it was closed one day after opening.

For Tropical Storm Allison, the military initially provided air transportation to Houston for several DMATs. A request for a 25-bed Air Force Expeditionary Medical Support (EMEDS) unit, initially rejected by the DoD Director of Military Support (allegedly on a technicality), was subsequently approved. The EMEDS unit deployed and became operational on June 14—one week after the storm initially hit—eventually providing care to more than 1,000 patients.

What lessons can be learned from these case studies? Even with the advance warning in the case of hurricanes, there were problems with civil-military coordination. Unpredictable attacks could further complicate matters. DoD should anticipate that certain requirements (e.g., transportation of people and goods, augmentation of the civilian infrastructure, veterinary and pest control support) will generally be required following natural disasters and CBRNE attacks. Moreover, DoD medical personnel can expect to be involved in relief efforts in the aftermath of a CBRNE incident—whether naturally occurring (e.g., a flu epidemic), accidental, or intentional. Nevertheless, a pattern of rapid deployment of DoD medical capabilities was not apparent from these case studies. The studies indicate that the current process of matching civil requirements with DoD capabilities is ineffective.

The case studies also raise several questions, including questions as fundamental as whether military capability should be deployed in lieu of additional civilian support and whether assets should be maintained in a centralized or decentralized fashion. Regarding the question of centralization versus decentralization of assets, the case studies indicated several principles that should be used in making the decision: the *speed* with which the asset needs to

be deployed, its *cost*, the *mobility* of the asset, and the *probability* that the asset will be used at the local level in noncrisis situations.

Although civilian capabilities in various disciplines have continued to improve since the September 11 attacks, it is reasonable to assume that DoD medical capability will often be required to supplement civilian medical capability. From that assumption, this report suggests several guidelines for identifying categories of assets to be used in planning for DoD medical support to civil authorities: *dual use* for combat support and civil support, *low probability of use* by civil authorities, and *not required for immediate use.*

Exercise-Based Studies of Military Medical Support to Civil Authorities

As part of the research for this report, RAND designed and conducted two exercise-based studies of potential military medical support to civil authorities in the event of a large-scale terrorist attack. One study was of a smallpox attack in Georgia and the other was of a multifaceted radioactive "dirty bomb" attack in California, each of which brought together senior government emergency response officials, policy advisors, and practitioners at the local, state, and federal level.

The exercises were designed to assess the feasibility and capability of U.S. DoD medical resources providing civil support for large-scale terrorist attacks; address the need for specific operational templates that could be used by military and civilian response entities to plan for, and respond to, such contingencies; identify potential actions at the federal and state level that could, if taken in advance of such contingencies, result in more effective civil-military coordination; and identify and address other related local, state, or regional issues. In each exercise, the RAND process known as "The Day After . . ." methodology was used. To address political and operational sensitivities, the Day After . . . methodology, through a series of steps, takes participants into the future, presents them with decisionmaking challenges, and then brings them back to the present to address potential solutions to problems identified in the "future."

For each exercise, a set of issues, identified by representatives of a wide spectrum of state and federal organizations during the exercise's design phase, were identified as the subjects of the scenarios. The issues generally fell into the following categories: information sharing; operational (including alert and warning and command and control); DoD-specific (employment considerations and capabilities); and legal and other barriers.

The Georgia Exercise: Smallpox Attack Scenario

The smallpox attack scenario was carefully chosen following extensive discussions with Georgia state and local officials. For each exercise step, in addition to addressing the general set of issues noted above, members of the design team developed additional specific issues to be addressed, not only to inform the state-to-federal support request process but also to test Georgia's systems and procedures for responding to such an attack. Specific federal-level issues included additional access to classified threat information for Georgia officials, federal-state planning and coordination, and deployment of the National Pharmaceutical Stockpile (now called the Strategic National Stockpile).

Additional state-level issues included those related to quarantine/isolation activities; the employment of area or regional medical assets; the effectiveness of health information

systems; mandatory vaccinations; the processes for requesting federal assets; rules of engagement; liability of local, state, and federal personnel; and public information plans.

The Georgia exercise informed many of the issues and produced additional observations about a response that could include federal assets. Currently, there is no satisfactory process at the state level for identifying requirements, which could be used to help inform requests for federal support. The exercise also exposed a number of legal issues, most notably in the liability area, related to licensure, vaccinations, and standards of care, and the legal and practical considerations of quarantine and isolation. The lack of a comprehensive threat assessment with specifics on targets, capabilities, and tactics was an issue throughout the exercise. Command and control—who is in charge of what and when—had not been satisfactorily resolved. Exercise participants identified problems and potential solutions related to inter-jurisdictional communications. And, finally, participants identified significant weaknesses in intergovernmental planning and preparedness.

The California Exercise: Radiological Dispersion Device Attack Scenario

The "dirty bomb" attack scenario for California, like the Georgia scenario, was selected only after close consultation with state officials. California sought not only to address the specific objectives of the research but also to test their own systems and procedures for responding to such an attack. As in Georgia, California officials developed additional issues to be addressed in the exercise. State-level issues were related to the question of when to raise threat levels and when to notify health officials of an increased threat, public affairs matters, the evacuation of hospitals, advice to medical facilities in the "danger zone," and the distribution of prophylaxes and antidotes. Federal issues were related to greater access to classified information; alert levels; prepositioning of assets; evacuation assistance; detection, assessment, and decontamination support; and cost reimbursement.

As with the Georgia exercise, the California exercise informed many of the issues and produced additional observations about a response that could include federal assets. The exercise highlighted problems related to alert and warning, attack assessment, and monitoring for a radiological attack. It also emphasized issues pertaining to the response to a radiological warning within government and among the public in general, and in the health community in particular. Exercise participants were acutely aware of problems associated with evacuation, both of the general public and of medical patients, whether directed or spontaneous. Participants highlighted needed improvements in risk communications as a major shortcoming. Processes for requesting external assistance were observed to be inadequate. And finally, the issue of burden sharing among various jurisdictions was highlighted.

Implications from the Exercises for the Use of DoD Medical Assets

Although the exercises were designed to be at a scale that would require state officials to seek outside help, participants generally avoided requesting federal support, including support from DoD. Why did the states not request such support? Perhaps because the medical demands created by such attacks had not been carefully considered or could not be anticipated. When federal participants asked state and local participants what they needed, they tended to answer with another question: What do you have?

The lack of a comprehensive, national requirements-identification process hampers planning within DoD to provide effective civil support, including medical capabilities. Lack of knowledge about DoD authority, capabilities, asset availability, and other restrictions also

contributes to the problem. In addition, there are political implications in requesting or not requesting federal support—particularly support from the military.

Conclusions

We sought to answer a number of questions in this research. Those questions follow, along with our recommendations and conclusions in response to those questions.

Under what circumstances could military medical assets be requested?

There is reluctance among state and local authorities to request federal assistance, especially military support. The reasons for that reluctance are both operational—e.g., the lack of a process to identify medical demands during a crisis situation—and political. General criteria for predicting when requests could be made for federal medical assistance, including requests to DoD, apply when the civilian medical system has the following characteristics:

- Destruction or significant degradation of infrastructure
- Depletion of critical civilian medical personnel
- Anticipation of prolonged effects caused by morbidity (e.g., as in the case of smallpox) or the situation (sustained effects on personnel and infrastructure due to destruction, contamination, etc.)
- Shortage of critical, unique capabilities (e.g., decontamination, evacuation, medical specialties).

What sort of military assets or capabilities are likely to be requested?

DoD has provided valuable assistance to civil authorities in the past and can expect requests for assistance in the future. Preferably, requests for assistance will be based on requirements, rather than being requests for specific assets. Our research suggests that until the processes for determining and communicating requirements is improved, this ideal situation is unlikely. Therefore, it is difficult to predict with any precision what types of medical capabilities may be requested from the DoD.

Two observations in particular should be mentioned: military "units" may not always provide the most effective or efficient response, and medical response often involves more than just casualty care. DoD possesses unique capabilities, including detection and decontamination of agents, treatment and evacuation of contaminated casualties, and preventive medicine capabilities, which may be useful in responding to domestic terrorist attacks or other crises. In short, DoD assets that are of value to civil authorities have fallen into two general categories: *more support* and *different kinds of support.*

Criteria for guiding future civil support planning fall into two groups. The first group of criteria consists of principles for determining which assets or capabilities should be centrally controlled or locally controlled. Those principles include the following:

- The *speed* with which the asset needs to be deployed
- The *cost* of the asset
- The *mobility* of the asset
- The probability that the asset will be used at the local level in a noncrisis situation.

The second group of criteria consists of guidelines for determining the prudence of providing a particular military support capability. These guidelines include:

- Whether or not the asset is "dual-use" between military and civilian settings
- Whether or not the asset has a low probability of use in civilian settings
- Whether or not the asset would be required immediately in a crisis.

Are there appropriate military medical assets and related planning processes for civil support?

DoD's joint planning process is optimally designed for the deliberate planning of combat campaigns, not civil support. DoD is wholly responsible for planning wartime missions, but DoD does not control the planning for a national response to a domestic incident.

Planning for military support to civil authorities (MSCA) is hindered mostly by the absence of a robust process by which the states and localities can articulate their potential requirements, even broadly. Requests from states and localities for assistance have historically been reactive in nature. As a result, DoD's ability to prepare for effective and efficient MSCA missions is limited.

No "Title 10" (active duty or Federal Reserve component) units have been assigned a mission responsibility for MSCA, and requests for assistance likely will continue to be fulfilled on an ad hoc basis. These factors are all complicated by the lack of a comprehensive training program for Title 10 and Title 32 (National Guard) units for providing civil support.

What are the legal (and other) barriers to military assistance to civil authorities, and how can they be overcome, if necessary?

There is ample authority for the use of the military domestically, including the provision of military medical support to states and localities in the event of a terrorist attack, and there are sufficient safeguards in place to prevent any abuse of discretion in the employment of military assets. No major new authority is necessary. Nevertheless, there is some cause for concern about potential liability of DoD and individual service members for negligence on the part of decisionmakers or military personnel in the conduct of civil support activities. Nonlegal barriers also constrain effective military support, including confusion inside the military and in civilian jurisdictions regarding the authority, capabilities, and appropriate role of the military more broadly; cultural barriers between the military and civilian entities; and the lack of a comprehensive pre-event requirements-identification process in support of the national strategy.

Recommendations

A process for accurately determining requirements for military support to civil authorities must be established if DoD is to plan and participate in response activities more effectively.

DoD will likely be requested, as part of an overall federal response, to provide medical assistance to civil authorities in the future. A comprehensive requirements process is for the most part nonexistent. DoD should work closely with the U.S. Department of Homeland Security (DHS) to encourage and participate in the establishment and exercise of such a process. Co-

ordination with states and localities in this process should be led by DHS. A collaborative process based on common terminology and clear guidelines for determining requirements and available capabilities is clearly indicated.

Military medical force structure should not be reduced further pending a comprehensive assessment of domestic military mission requirements.

Although a comprehensive requirements-identification process will necessarily have to precede an assessment, DoD can certainly anticipate that certain medical support requirements will almost always exist and can take those requirements into consideration in the near term. A planning process that identifies anticipated MSCA medical requirements could result in the identification of existing medical capabilities.

More comprehensive DoD guidance, doctrine, and training will be needed to include support missions as the missions are identified.

Little definitive guidance has been given to DoD or promulgated within DoD for military support to civil authorities. Further guidance is now required to provide the impetus for planning and developing the doctrine, structure, and training required for such support. To avoid confusion, current directives for military support to civil authorities should be combined and republished following the issuance of definitive guidance. We further recommend that the resulting document be made widely available to civilian authorities.

Acronyms

ANG	Air National Guard
ASCO	Advanced Systems and Concepts Office
ASD(HD)	Assistant Secretary of Defense for Homeland Defense
CBIRF	Chemical Biological Incident Response Force (Marine Corps)
CBW	chemical or biological weapons
CBRNE	chemical, biological, radiological, nuclear, conventional high explosives
CDC	U.S. Centers for Disease Control and Prevention
CFR	Code of Federal Regulations
CJCS	Chairman, Joint Chiefs of Staff
CMAT	Consequence Management Advisory Team
CONUSA	Continental United States Army
CSH	combat support hospital
DCO	Defense Coordinating Officer
DFE	discretionary function exception
DHS	U.S. Department of Homeland Security
DHHS	U.S. Department of Health and Human Services
DMAT	Disaster Medical Assistance Team
DoD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOMS	Director of Military Support
DTPA	Diethylene Triamine Penta-acetic acid
DTRA	Defense Threat Reduction Agency
DVA	Department of Veterans Affairs
EMEDS	Expeditionary Medical Support
EMT	emergency medical technician
EPA	U.S. Environmental Protection Agency
EPLO	Military Emergency Preparedness Liaison Officer
ESF	emergency support function
FBI	Federal Bureau of Investigation
FCC	Federal Coordinating Center

FCO	federal coordinating officer
FEMA	Federal Emergency Management Agency
FORSCOM	U.S. Army Forces Command
FRP	Federal Response Plan
FTCA	Federal Tort Claims Act of 1946
GAO	U.S. General Accounting Office
HIPAA	Health Insurance Portability and Accountability Act (of 1996)
HMMWV	high-mobility multipurpose wheeled vehicle
HSPD	Homeland Security Presidential Directive
IT	information technology
JCS	Joint Chiefs of Staff
JFCOM	U.S. Joint Forces Command
JOPES	Joint Operations Planning and Execution System
JSCP	Joint Strategic Capabilities Plan
JSPS	Joint Strategic Planning System
JTF-CS	Joint Task Force-Civil Support
MACA	military assistance to civil authorities
MARTA	Metropolitan Atlanta Rapid Transit Authority
MHS	military health system
MMRS	Metropolitan Medical Response System
MSCA	military support to civil authorities
MSLEA	military support to law enforcement agencies
MTF	military treatment facility
NBC	nuclear, biological or chemical
NDMS	National Disaster Medical System
NMS	national military strategy
NNMC	National Naval Medical Center
NORTHCOM	U.S. Northern Command
NRP	National Response Plan
OA	operational area
OES	Office of Emergency Services
OHS	White House Office of Homeland Security
OSD	Office of the Secretary of Defense
PCA	Posse Comitatus Act
QDR	Quadrennial Defense Review
RC	reserve component
RDD	radiological dispersion device
ROE	rule of engagement
SEMS	California Standardized Emergency Management System
SMARTS	Special Medical Augmentation Response Teams

TRANSCOM	U.S. Transportation Command
UCP	Unified Command Plan
UIC	Unit Identification Code
USAMRIID	U.S. Army Medical Research Institute of Infectious Disease
U.S.C.	U.S. Code
USNS	U.S. Navy Ship
USPHS	United States Public Health Service
WMD	weapons of mass destruction
WMD-CST	Weapons of Mass Destruction Civil Support Team

CHAPTER ONE

Introduction

> **Triage.** *Noun.* 2. A system used to allocate a scarce commodity, such as food, only to those capable of deriving the greatest benefit from it. 3. A process in which things are ranked in terms of importance or priority.
>
> *The American Heritage Dictionary*

Background

Even before the events of September 11, 2001, threat assessments suggested that the United States should prepare to respond to terrorist attacks inside its borders. This research on the use of military medical assets to support civil authorities in the event of a terrorist attack inside the United States was begun in spring 2001 and originally focused on only the potential consequences of chemical or biological weapons (CBW) attacks in the United States. It had already been documented at that time that some civilian medical organizations and facilities were ill-prepared to deal with a situation involving large numbers of CBW casualties.[1] Indeed, this situation seems to persist today.[2] Recognizing that civilian systems could be overwhelmed in the event of a terrorist attack, the Advanced Systems and Concepts Office (ASCO) of the Defense Threat Reduction Agency (DTRA) asked the RAND Corporation to conduct this research based on the probability that Department of Defense (DoD) medical assets would be called upon to provide support to civil authorities in the aftermath of an attack.

Dealing with a chemical or biological threat is not new to DoD. Military medical units routinely train to manage CBW casualties on the battlefield. Although some civilian organizations, such as hazardous material response units and public health agencies, also train to recognize and treat casualties similar to those caused by CBW agents, it is possible, indeed likely, that DoD would be called upon to provide support to civil authorities in the event of an attack. Portions of DoD's existing resources, principally those from the military health system (MHS), could be employed to assist civil authorities. In fact, DoD often assists in natural-disaster relief and for years has provided medical support to both coalition partners and local populations in deployments to Haiti, Kosovo, and Somalia, for example. These missions share many characteristics that may also be encountered following a CBW attack,

---

[1] McIntyre, A. G., et al., "Weapons of Mass Destruction Events With Contaminated Casualties: Effective Planning for Health Care Facilities," *JAMA*, Vol. 283, 2000, pp. 242–249.

[2] U.S. General Accounting Office (GAO), *Hospital Preparedness: Most Urban Hospitals Have Emergency Plans but Lack Certain Capacities for Bioterrorism Response*, Washington, D.C.: U.S. General Accounting Office, GAO-03-924, 2003a.

including significant casualties, a high incidence of infectious disease, and degradation of infrastructure.

Research Objectives and the Influence of September 11

ASCO asked RAND to explore approaches to civil-military cooperation for CBW response and to identify obstacles to such cooperation and the execution of related military operations. The original goals of this research were, in summary, to identify (even catalog) DoD assets and capabilities that might be useful in responding to a CBW attack in the United States; to identify legal and other barriers to such a response; and to propose operational templates to facilitate civil-military cooperation.

The primary focus of the research plan before September 11 was to conduct literature reviews, interviews, and review DoD capabilities in order to synthesize a DoD-centric view of the civil-military relationship that would be helpful primarily to DoD planners and policymakers. The attacks on the United States in September 2001 focused new and significant attention on homeland security. The pace and quantity of change in strategies and policies at the national, state, and local levels have been dramatic. These changes are discussed in depth throughout this report, especially in Chapter Two. Given the renewed and changing focus of the nation toward homeland security, ASCO and RAND jointly determined that policymakers and the public would be better served by a similarly refocused research plan. As a result, the research was expanded from focusing primarily on CBW terrorist attacks to covering the full spectrum of weapons—chemical, biological, radiological, nuclear, and conventional high explosives (CBRNE).

It has long been recognized that the response to most crises, whether natural or man-made, begins at the local level. In fact, the Federal Response Plan (FRP) in place before September 11 addressed an escalating response, from local or regional to state and, finally, federal response.[3] In that context, the original primary objective of this research was to assist DoD in preparing for a response based on a request for assistance from states. The most logical path to accomplish this goal appeared to be determining what DoD medical assets might be useful in providing such assistance and identifying general needs of the civilian community that could be met by those assets. Following the attacks of September 11, and at the urging of various expert panels such as the Gilmore Commission,[4] it has become evident that a national approach to response would best allow for the most effective and efficient integration of responses at all levels. However, the processes to support a national approach that includes the use of the military remain largely undefined or at least unclear to many parties involved in such an approach.

In recognition of the need to better understand the processes supporting a national response, the research reported here was altered from its original design. Instead of cataloging DoD medical assets and postulating gaps in the civilian system in order to improve DoD

[3] The Federal Response Plan and its continuing evolution today in the context of homeland security are discussed further in Chapter Three.

[4] The Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction (also known as the "Gilmore Commission") was established by Section 1405 of the National Defense Authorization Act for Fiscal Year 1999, Public Law 105–261 (H.R. 3616, 105th Congress, 2nd Session) (October 17, 1998).

planning and preparedness, the research design was changed to a more bottom-up approach. The modified research design took into account rapidly evolving civilian and military processes, capabilities, and organizations and sought to determine how these entities might interact, based on hypothetical scenarios initiated at the local level. Furthermore, the scope of the research was expanded to include an "all-hazards" approach.[5] The bottom-up approach was manifest in the substantial expansion of planned exercises, in which senior local, state, and federal officials considered hypothetical scenarios and weighed likely responses (see Chapter Six for a discussion of those exercises). The following questions guided this research:

- Under what circumstances could military medical assets be requested?
- What sort of military assets or capabilities are likely to be requested?
- Are there appropriate military medical assets and related planning processes for civil support?
- What are the legal (and other) barriers to military support to civil authorities, and how can those barriers be overcome, if necessary?

Research Methods

We employed various research methods to address the central research questions. Those methods included document reviews, interviews, a legal review, case studies, and exercises.

The literature and document reviews covered peer-reviewed literature, government reports, reports by nongovernmental agencies, and guidance and operational documents at the local, state, and federal levels. In the climate of continuous changes in homeland security in the past two years, every effort was made to review the most recent documents, especially governmental guidance. Generally, documents published after May 2003 were not included except where specifically noted. Specific literature reviews to support various research activities are described as necessary in the following chapters of this report. Additionally, a complete legal review was conducted to assess the current status of all statutory and regulatory authorities and restrictions and to assess the current status of case law interpretation of those statutes and regulations.

We conducted interviews at all levels of government and with nongovernmental experts. An interview protocol (see Appendix A) was used in most cases; this protocol was intended to foster open discussion. In other cases, more specific information was required, for example, details regarding historical case studies. A list of the individuals we interviewed by job title and organization is provided in Appendix B.

We also conducted historical case studies that focused on instances in which military medical assets were called on to assist civil authorities following natural disasters. Chapter Five describes the methodology of those case studies and discusses their implications.

Finally, to support our overall research objectives, we conducted exercise-based studies of potential military medical support to civil authorities in Georgia and California. These exercises included senior officials from local, state, and federal agencies. The methodology and results of these exercises are described in Chapter Six. Materials used to conduct the ex-

[5] An all-hazards approach recognizes that crises can be caused by natural disasters as well as being man-made, whether intentional or not. As noted above, this approach includes consideration of terrorist attacks involving CBRNE weapons.

ercise in Georgia can be found in Appendix D, which provides an example of the general design and methodology used for both exercises.

Terminology

Some terms that are used in this report have significant histories, and associated issues, regarding nuances in their usage. The unavoidable inclusion of these terms runs the risk of our unintentionally introducing ambiguities. As such, this section defines certain terms and addresses issues with terminology that are relevant to this report.

Terrorism

One of the many challenges in dealing with the terrorism threat is the historical ambiguity in the definition of the word terrorism. Many different definitions of a *terrorist*, a *terrorist act*, and *terrorism* have been set forth, tailored to specific situations, studies, or political agendas. In light of this situation, an effort has been made in recent years to develop a generally accepted working definition of the term, focusing on the act of terrorism without reference to the perpetrator. This report uses the definition found in the White House Office of Homeland Security (OHS) document *National Strategy for Homeland Security,*[6] which characterizes terrorism as:

> (A)ny premeditated, unlawful act dangerous to human life or public welfare that is intended to intimidate or coerce civilian populations or governments.

The document goes on to explain:

> This description captures the core concepts shared by the various definitions of terrorism contained in the U.S. Code, each crafted to achieve a legal standard of specificity and clarity. This description covers kidnappings; hijackings; shootings; conventional bombings; attacks involving chemical, biological, radiological, or nuclear weapons; cyber attacks; and any number of other forms of malicious violence. Terrorists can be U.S. citizens or foreigners, acting in concert with others, on their own, or on behalf of a hostile State.

With this basic definition, *international terrorism* is an act perpetrated across borders or on a foreigner within the perpetrator's country. *Domestic terrorism* is perpetrated in the attacker's country of origin against a domestic target.

CBRNE Versus Weapons of Mass Destruction

The term *weapons of mass destruction* (WMD) was introduced early in the Cold War as a catchall for nuclear, chemical, and biological weapons. It was initially championed by the Soviet Union in arms control arenas—to mixed reviews—and has enjoyed periodic popularity in and around U.S. government circles. In 1996, the Nunn-Lugar-Domenici Act defined a weapon of mass destruction as:

---

[6] The White House, *National Strategy for Homeland Security*, Washington, D.C.: U.S. White House Office of Homeland Security, July 2002, p. 2, http://www.whitehouse.gov/homeland/book/nat_strat_hls.pdf, accessed February 3, 2003.

> Any weapon or device that is intended, or has the capability, to cause death or serious bodily injury to a significant number of people through the release, dissemination, or impact of: (A) toxic or poisonous chemicals or their precursors; (B) a disease organism; or (C) radiation or radioactivity.

For clarity's sake, this report uses the term CBRNE instead of the potentially ambiguous term WMD. For example, a terrorist attack on a chemical facility using a conventional device could cause "mass destruction," but may not necessarily involve the use of a weapon as described in the WMD definition provided above. Significantly, the attacks on September 11, 2001, caused "mass casualties" and "mass destruction" within any reasonable interpretation of those terms, but do not fit any traditional "WMD" definition.

How This Report Is Organized

Chapter Two describes the military health system and provides an overview of the types of military medical assets that may be requested to provide support to civil authorities. Chapter Three describes the U.S. national response system that is called on to respond to crises such as natural disasters and terrorist attacks. It also includes a discussion of recent and ongoing changes in that system. Chapter Four discusses and analyzes the legal and other barriers to the use of military assets in support of civil authorities. Chapter Five describes case studies of the role DoD played in medical relief efforts following three major U.S. natural disasters and the lessons learned from those events. Chapter Six details exercise-based studies of potential military medical support conducted in Georgia and California. Chapter Seven contains our conclusions and recommendations.

CHAPTER TWO

The Military Health System and Military Support to Civil Authorities

The U.S. military health system includes one of the largest and most complex health care organizations in the world.[1] In 1999, DoD operated approximately 465 military treatment facilities (MTFs) in the United States and overseas, including 91 hospitals and 374 clinics.[2]

In this chapter, we provide an overview of the MHS. We discuss its dual missions—the readiness mission and the benefits mission—and the methods used to carry out these missions with shared resources. We also provide an overview of the types of medical resources that reside in DoD, and we discuss the DoD organization and planning process to conduct military support to civil authorities (MSCA) missions. Finally, we discuss some limitations to consider before relying on DoD to provide medical resources for such missions.

The Two Primary Missions of the Military Health System

While resembling a typical health care organization in many ways, the MHS is unique in that it is a *military* health system.[3] It has two unique missions:

- **The Readiness Mission:** To provide, and to maintain readiness to provide, medical services and support to the armed forces during military operations.
- **The Benefits Mission:** To provide medical services and support to members of the armed forces, their dependents, and others entitled to DoD medical care.[4]

The military readiness mission involves deploying medical units and personnel as needed worldwide to support military forces conducting wartime and other operations, including military training. The benefits mission is perhaps more visible to the public—

---

[1] To avoid confusion, we refer to the collection of all DoD medical activities as the "military health system." The program element in the DoD program and budget that includes medical activities is more properly known as the "Defense Health Program." However, not all medical activities are included in the program element, and "military health system" has come to be used more broadly.

[2] GAO, *Defense Health Care: Tri-Service Strategy Needed to Justify Medical Resources for Readiness and Peacetime Care*, Washington, D.C.: U.S. General Accounting Office, GAO/HEHS-00-10, 1999.

[3] For further discussion of the organization and missions of the MHS, see Hosek, Susan D., and Gary Cecchine, *Reorganizing the Military Health System: Should There Be a Joint Command?*, Santa Monica, Calif.: RAND Corporation, MR-1350-OSD, 2001. Some material in this section was drawn from that publication.

[4] Deputy Secretary of Defense, "Strengthening the Medical Functions of the Department of Defense," memorandum, October 1, 1991, cited in Hosek and Cecchine, 2001, and as stated on the Web site of the Assistant Secretary of Defense (Health Affairs), http://www.ha.osd.mil/ha/winkenwerder-bio.cfm, accessed August 27, 2003. Others entitled to DoD medical care include retirees, survivors, and their dependents.

especially to the 8.7 million beneficiaries the MHS serves.[5] Their care is provided through a program called TRICARE, which includes managed-care and fee-for-service plans through a combination of patient care in MTFs and a network of civilian providers.

The Military Health System Missions Share Resources

The readiness and benefits missions are principally related in two ways. First, the health care provided by the benefits mission also contributes to the readiness mission by keeping active-duty personnel at the peak health required for military effectiveness while also ensuring the care of their families. Second, the same medical personnel are used for both missions. Active-duty physicians, nurses, and other medical personnel staff the MTFs, where most of the health care for beneficiaries is provided. As needed, active-duty medical personnel leave the MTFs to fill vacancies in deploying medical units.[6] This arrangement serves a dual purpose. Maintaining standing units fully staffed with medical professionals exclusively for the readiness mission is untenable, because the medical professionals must maintain their medical skills, which they do by treating beneficiaries in MTFs. However, the sharing of medical personnel between the two missions can sometimes cause a strain on the MHS. The movement of personnel between the two missions may have implications for the availability of military medical personnel to civil support missions, as we discuss later.

Each of the military services contains a medical department; there is no single uniformed military medical service in DoD.[7] The service medical departments generally employ similar strategies to balance the two MHS missions. When called upon to support deployments (especially large ones), these strategies generally involve deploying active-duty medical personnel from MTFs to complement combat medical units. Reserve personnel, or personnel from other MTFs, may be assigned to replace the deployed personnel. In some cases, reserve personnel are also deployed to a combat theater, and civilian medical personnel may be contracted to replace them temporarily in their home MTF.

For example, during peacetime, the hospital ship USNS *Comfort* is staffed by a reduced crew of 58 Navy medical personnel and is operated by 18 civilian mariners. When called upon to deploy, medical personnel from the National Naval Medical Center (NNMC) at Bethesda are used to bring *Comfort* to its full medical operating capacity (or a lesser designated level). The ship can accommodate a total of 1,215 personnel to operate its 1,000-bed hospital complete with 12 operating rooms, 80 critical-care beds and 400 intermediate-care beds. In comparison, NNMC Bethesda has a 500-bed inpatient capacity and is staffed by approximately 5,000 personnel. In 1990–1991, more than 1,400 military personnel deployed from NNMC Bethesda to either the USNS *Comfort* or other units serving in the Persian Gulf. Recent military operations (in 2003) have included the deployment of approximately 900 military medical staff from NNMC Bethesda. More than 600 Navy medical reservists and civilian contract personnel were called on to backfill the MTF.[8]

---

[5] GAO, *Defense Health Care: Oversight of the TRICARE Civilian Provider Network Should Be Improved*, Washington, D.C.: U.S. General Accounting Office, GAO-03-928, 2003b.

[6] Hosek and Cecchine, 2001. Additionally, MTFs may also employ civilian medical professionals, who do not deploy.

[7] See Hosek and Cecchine, 2001.

[8] Dawson, CDR Brian, Associate Director for Administration for Homeland Security, personal interview, NNMC Bethesda, April 28, 2003. See also USNS *Comfort* fact sheet, http://www.msc.navy.mil/factsheet/comfort.htm, accessed August 27, 2003.

As mentioned earlier, the employment of active-duty medical personnel in MTFs is necessary to maintain the medical skills of those personnel in support of the readiness mission. The strategy of deploying these personnel to combat units and replacing them with reserve personnel is partly enabled by the fact that approximately half of the total military medical resources are in the reserve components (RCs).

Each of the military services maintains a significant amount of medical capability in its RC. The Army, with the largest medical force structure, maintains 60 percent of its medical force in its reserve components. Of this, 30 percent is in the Army National Guard, and 70 percent is in the Army Reserve. The Guard medical capability, including combat medics, forward surgical teams, and aeromedical evacuation, is primarily in pre-hospital care. The Army Reserve maintains all RC hospitals and medical command and control elements. The Air Force maintains 58 percent of its medical force in its reserve components; of this, 30 percent is in the Air Guard and 70 percent is in the Air Force Reserve. The Navy maintains 41 percent of its medical force in the Naval Reserve, primarily in the form of fleet hospitals and augmentation personnel.

The mix of active-duty and reserve medical assets, and the practice of deploying active-duty medical personnel from MTFs and replacing them with reservists, can have significant implications for the ability of DoD to provide medical support to respond to crises inside the United States. These implications include the availability of both active-duty and reserve medical personnel at any given time due to the requirement to accomplish both MHS missions simultaneously and the probable delay in calling-up reserve personnel for civil support missions. Additionally, there is currently a lack of broad legal authority for use of the RC in terrorism incidents other than for "catastrophic" attacks (see Chapter Four). The prospect that sufficient "excess capacity" would exist to conduct civil response missions while also simultaneously satisfying both MHS missions requires further study if significant civil support requirements are also to be placed on this sometimes-stressed system. This issue is discussed further later in this chapter. An additional consideration in replacing deployed personnel with reserve personnel is the likelihood that reserve medical personnel also serve as medical professionals in the civilian sector. Response planners might "double-count" these personnel as being potentially available for responding to crises. This possibility also requires further attention.

Military Medical Assets

In this subsection, we describe various types of military medical assets and provide a general overview of medical capabilities. We do not attempt, nor do we believe it useful, to provide an exhaustive list of DoD medical assets, for several reasons. First, as DoD's planning for civil support evolves with the continuing development of U.S. Northern Command (NORTHCOM) and guidance from the newly appointed Assistant Secretary of Defense for Homeland Defense (ASD[HD]), the DoD may revisit its force structure to accommodate emerging plans, as suggested in a recent GAO report and in Chapter Seven of this report.[9] Therefore, a comprehensive list of assets, although useful, probably would be outdated.

---

[9] GAO, *Homeland Defense: DoD Needs to Assess the Structure of U.S. Forces for Domestic Military Missions*, Washington, D.C.: U. S. General Accounting Office, GAO-03-670, 2003d. GAO specifically recommended that "DoD assess domestic military mission requirements and determine what steps should be taken to structure U.S. forces to better accomplish domestic military missions" (p. 4). DoD responded that it does not believe an independent review is necessary and that any

Second, because DoD plans for operations within a constrained budget, not all assets are maintained at the highest readiness levels. A unit that plans to deploy 180 days after the first deploying unit is unlikely to maintain a complete assemblage of personnel and equipment, for example. Therefore, a simple list of assets would exclude important information, such as the "authorized level of fill" of those assets; that is, it would not be obvious from the list what capabilities actually existed at a given time.

Third, interviews with DoD officials indicated significant resistance to providing civil authorities with a "menu" to which they may refer to request specific resources instead of articulating their needs. Based on the historical case studies and exercises conducted in this research (see Chapters Five and Six), we find this reluctance to be understandable; an approach that will allow for the advance determination of requirements and the subsequent application of appropriate resources is likely going to be required (see our recommendations in Chapter Seven).

Given that the MHS conducts two simultaneous *missions*, it is not surprising that one can categorize medical *assets* into two types. Because the two missions overlap, these asset classifications are not mutually exclusive, but they can serve to describe the types of medical capabilities that reside in DoD.

DoD categorizes military personnel and equipment in one of two ways. They are aligned within either *mission* assets or *infrastructure* assets. The former group is used in combat or combat-related activities, and the latter group *enables* the mission categories.[10] Distinctions between the categories in the MHS are not always obvious, partially because of the overlap between missions. As a result, several additional terms are often used to describe medical assets. For example, mission category assets are also sometimes described as *combat, deployable*, or *operational* assets. Infrastructure assets are also described as *non-deployable* or *fixed-facility* assets, largely because fixed MTFs (i.e., hospitals) most often come to mind in this category.

While already confusing in some cases, this taxonomy can be especially problematic in the context of military support to civil authorities, because the support mission does not fit the "traditional" sense of deployments. It is possible, for example, that personnel from an MTF, an infrastructure asset, may be "deployed" locally to respond to a domestic crisis. The categorization implies significant differences between the two types of assets, however. One important difference, for example, is that infrastructure assets do not generally deploy as a unit nor do they provide direct support in combat, whereas mission assets are designed to do so and can be more easily tailored to meet specific mission requirements. To be consistent with current DoD organization and practice, we use the terms "mission" and "infrastructure" to describe DoD medical capabilities.

Mission Medical Assets

Mission medical assets can generally be described as "go-to-war" units. Each service has its own unique organizational approach and terminology in aligning mission personnel and equipment to meet its mission requirements. Generally, however, each service uses a "build-

---

such changes will be determined through the ongoing force management processes that will culminate with the 2005 Quadrennial Defense Review (QDR) (p. 31).

[10] DoD, *Annual Report to the President and Congress*, "Resources Allocated to Support and Mission Activities," Appendix L, Washington, D.C: U.S. Department of Defense, 2000, http://www.defenselink.mil/execsec/adr2000/appl.html, accessed July 29, 2003.

ing blocks" approach to fit medical assets to the needs of the overall mission. There are multiple such building blocks at various levels of capability. Each building block of a certain size is similar in respect to its defined mission and specified level of personnel, equipment, organizational structure, and deployability. The appropriate level of capability can thus be "plugged into" operational plans based on the projected needs of the operation. For combat, planning factors exist that identify the number and type of casualties expected for a given combat mission for a given level of intensity. Medical plans match the needs of the operational mission with the medical assets to define the "basis of allocation" in supporting specific levels of combat—for example, the number of combat support hospitals necessary to support an army division.[11] The differences between this type of planning and planning for civil support are discussed later in this chapter. Table 2.1 provides an overview of the types of mission medical assets.

Infrastructure Medical Assets

The infrastructure category consists of capabilities designed to enable and support the mission category forces and also conduct the benefits mission. As noted in the NNMC Bethesda example, personnel assigned in an infrastructure category may have a dual responsibility to move to a mission category when necessary to fulfill operational requirements. DoD MTFs (medical centers, smaller hospitals, and clinics) are included in this category. The MTFs are perhaps the most recognizable examples of the infrastructure category assets, but there are many additional examples, including research and development and CBRNE response assets. Infrastructure medical assets are described in Table 2.2.

As mentioned above, the categorization of medical assets to support DoD's wartime mission does not always translate well to civil support missions. The service medical departments have recognized that their infrastructure category assets may be asked to provide support in responding to domestic incidents. Further recognizing the robust capabilities of the infrastructure assets, the medical departments have formed special response teams that are embedded in the infrastructure. For example, the Army Medical Department maintains Special Medical-Augmentation Response Teams (SMARTs) for various functions (e.g., preventive medicine, trauma). These special response teams are included in Table 2.2.

DoD Organization, Guidance, and Planning

Current and recent DoD organizations related to homeland security (Director of Military Support [DOMS], ASD-Homeland Defense, and NORTHCOM) are described in Chapter Three. Here, we describe how DoD organization, guidance, and planning relate to MSCA.

Organization for Military Operations

The Unified Command Plan (UCP) establishes the combatant commands, identifies geographic areas of responsibility, assigns primary tasks, defines the authority of the

[11] U.S. Army, *Planning for Health Services Support*, U.S. Army Field Manual 8-55, September 1994.

Table 2.1
Types of DoD Mission Medical Assets

Service	Type of Asset	Function
U.S. Army	Medical Command	Provides command and control and consultative services to Army theater or corps medical assets; synchronizes functional areas of hospitalization, evacuation, preventive medicine, and logistics
	Combat Support Hospital (CSH)	248 beds, 24 intensive care beds, 6 operating rooms
	Theater Materiel Management Center	Initiates, tracks, and manages medical supplies and equipment and blood assets
	Theater Army Medical Lab	Analysis and identification for disease diagnosis and prevention; analysis and evaluation of environmental and clinical samples for Nuclear, Biological, or Chemical (NBC) contamination
	Medical Logistics Battalion	Provides medical supply functions and equipment maintenance
	Area Support Medical Battalion	Provides aeromedical and ground evacuation of patients
	Battalion Aid Station	Pre-hospital emergency stabilization
	Medical Detachment/ Company	Pre-hospital emergency stabilization; specialized support relative to the type of organization (Support, Air Ambulance, Ground Ambulance, Combat Stress Control, Preventive Medicine, Dental, Veterinary)
	Forward Surgical Team	Resuscitative surgery, two operating tables
U.S. Air Force	Aeromedical Evacuation Coordination Center	Operations center for planning and coordination of Air Force assets
	Expeditionary Medical System (EMEDS)	Basic unit: Small Portable Expeditionary Aeromedical Rapid Response: ten personnel; initial disaster medical assessment, emergency surgery/critical care; one critical care bed Basic: Increases overall capability plus four holding beds + 10: Increases overall capability plus ten holding beds + 25: Increases overall capability plus 25 holding beds
	Aeromedical Staging Facility	25–50 beds; four-to-six-hour holding capability
	Specialty Teams	Aeromedical Evacuation Liaison Team Critical Care Transport Teams
	Air Transportable Hospital	Modularly configured; up to four operating rooms; four intensive care units, six intermediate care beds, 40 minimal care beds
U.S. Navy	Hospital Ship (two in service)	1,000 beds; 12 operating rooms
	Fleet Hospital	500 beds; three operating rooms
	Amphibious Assault Ships	Utilizes Fleet Surgical Teams to expand assault ships to provide patient care in areas used to transport Marine forces; up to four operating rooms with 15 intensive-care units, 45 intermediate care beds, and 540 overflow beds
	Fleet Surgical Team	Provides medical support to amphibious operations
	Navy Environmental and Preventive Medicine Unit	Provides consultative services for preventive medicine

commanders, and establishes command relationships. It is approved by the president and is published by the Chairman, Joint Chief of Staff (CJCS).

The UCP establishes combatant command missions, responsibilities, and force structure; delineates geographic areas of responsibility for geographic combatant commanders;

Table 2.2
DoD Infrastructure Medical Assets

Service	Type of Asset	Function
Joint or Multi-Service	Armed Forces Radiobiology Research Institute	Conducts research in the field of radiobiology and related matters essential to the operational and medical support of DoD and the military services (http://www.afrri.usuhs.mil, accessed July 29, 2003)
	Global Patient Movement Requirements Center	U.S. Transportation Command Regulating and Command and Control Evacuation System; provides patient tracking for the National Disaster Medical System (NDMS) (http://www.dtic.mil/doctrine/jel/DoDdict/data/g/02287.html, accessed July 29, 2003)
	Joint Blood Program Office	Coordinates joint blood product requirements and capabilities in a theater of operations (http://www.tricare.osd.mil/asbpo/activities/components/jbpo.htm, accessed July 29, 2003)
	Uniformed Services University of Health Sciences	Federal health sciences university provides education, research, service, and consultation for military medicine, disaster medicine, and public health (http://www.usuhs.mil/ accessed July 29, 2003)
	Defense Threat Reduction Agency (DTRA)	Reduces threat of weapons of mass destruction (chemical, biological, radiological, nuclear, and high explosives) and prepares for the future threat; provides combat support, technology development, threat control, and threat reduction; DTRA's Consequence Management Advisory Team (CMAT) comprises experts in response procedures, requirements, hazard prediction modeling, secure communications, health physics, medicine, public affairs, and the legal implications of a CBRNE incident. (http://www.dtra.mil/ accessed July 29, 2003)
	Mortuary Affairs Force Structure	Operates mortuary collection points; searches, recovers, tentatively identifies and coordinates evacuation of remains; also has capability to decontaminate remains (http://www.dtic.mil/doctrine/jel/new_pubs/jp4_06.pdf, accessed Jul 29, 2003)
	Armed Forces Pest Management Board	Recommends policy, provides guidance, and coordinates the exchange of information on all matters related to pest management throughout DoD (http://www.afpmb.org/, accessed August 28, 2003)
	Armed Forces Institute of Pathology	Pathology consultation, education and research (http://www.afip.org/, accessed August 28, 2003)
U.S. Army	Army Medical Treatment Facilities	Includes major medical centers, clinics, and outpatient facilities (http://hfpa.otsg.amedd.army.mil/, accessed August 28, 2003)
	Special Medical-Augmentation Response Team	Specialty response teams embedded in MTFs; designed to provide support relative to their expertise; types of SMARTS include Trauma; Nuclear, Biological, Chemical; Pastoral Care; Stress Management; Medical Command, Control, Communications, Telemedicine; Preventive Medicine and Surveillance; Burn; Veterinary; Health Systems Assessment and Assistance; and Aeromedical Isolation.
	Army Reserve Hospitals	Fixed facility hospital augmentation (http://www.army.mil/usar/aboutus.html, accessed July 29, 2003)
	Army Medical Department Center and School	The Army's center for military medical education (http://www.cs.amedd.army.mil/, accessed July 29, 2003)
	Army Medical Research and Material Command	The Army's medical materiel developer and logistician (http://mrmc-www.army.mil/, accessed July 29, 2003)

Table 2.2—Continued

Service	Type of Asset	Function
U.S. Army (continued)	U.S. Army Medical Research Institute of Infectious Disease (USAMRIID)	The Department of Defense's lead laboratory for the medical aspects of biological warfare defense, USAMRIID conducts research to develop vaccines, drugs, and diagnostics for laboratory and field use. In addition to developing medical countermeasures, USAMRIID formulates strategies, information, procedures, and training programs for medical defense against biological threats. (http://www.usamriid.army.mil/, accessed July 29, 2003)
	Army Medical Research Institute of Chemical Defense	Develops medical countermeasures to chemical warfare agents and trains medical personnel in the medical management of chemical casualties (http://chemdef.apgea.army.mil/, accessed July 29, 2003)
	Army Medical Materiel Agency	Provides medical logistics support for DoD health care missions worldwide (http://www.usamma.army.mil/, accessed July 29, 2003)
	Army Center for Health Promotion and Preventive Medicine	Provides scientific expertise and services in clinical and field preventive medicine, environmental and occupational health, health promotion and wellness, entomology, epidemiology and disease surveillance, toxicology, and related laboratory sciences (http://chppm-www.apgea.army.mil, accessed July 29, 2003)
	Soldier Biological and Chemical Command	Develops, integrates, acquires, and sustains soldier and NBC defense technology, systems, and services (http://www.sbccom.apgea.army.mil/ accessed July 29, 2003)
	Technical Escort Unit	Conducts no-notice deployment to provide chemical and biological advice, verification, sampling, detection, mitigation, decontamination, packaging, escort, and remediation of chemical and biological devices or hazards worldwide; provides technical consultation and doctrine development (http://teu.sbccom.army.mil/, accessed July 29, 2003)
	Chemical Biological Rapid Response Team	Coordinates DoD's technical assistance (medical and nonmedical) to support the lead federal agency in response activities (http://www2.sbccom.army.mil/cbrrt/fs_cbrrt.htm accessed July 29, 2003)
U.S. Navy	Navy Medical Treatment Facilities	Includes major medical centers, clinics, and outpatient facilities (http://navymedicine.med.navy.mil/, accessed August 28, 2003)
	Mobile Medical Augmentation Readiness Teams	Provides rapid, short-term (less than 180 days), flexible medical augmentation for peacetime operations; includes six diverse but interactive teams: surgical, medical regulating, special psychiatric rapid intervention, humanitarian support, specialist support, and preventive medicine (http://www.vnh.org/FleetMedPocketRef/MMART.html, accessed August 28, 2003)
	Naval Medical Research Center	Conducts research in a wide variety of biomedical disciplines (http://www.nmrc.navy.mil/, accessed July 29, 2003)
U.S. Marine Corps	Chemical Biological Incident Response Force	Can respond to a credible threat of a CBRNE incident in order to assist local, state, or federal agencies and DoD by providing capabilities for agent detection and identification; casualty search, rescue, and personnel decontamination; and emergency medical care and stabilization of contaminated personnel (http://www.cbirf.usmc.mil, accessed July 29, 2003)

Table 2.2—Continued

Service	Type of Asset	Function
U.S. Air Force	Air Force Medical Treatment Facilities	Includes major medical centers, clinics, and outpatient facilities (https://www.afms.mil/sg/index.htm, accessed August 28, 2003)
	Small Portable Expeditionary Aeromedical Rapid Response	Includes public health, critical care, and surgical teams to provide trauma care (http://www.af.mil/news/Mar2002/n20020315_0415.shtml, accessed August 28, 2003)
	Air Force School of Aerospace Medicine	Center for aeromedical education, training, and consultation in direct support of Air Force, DoD, and international aerospace operations; provides peacetime and contingency support in hyperbarics, human performance, clinical and dental investigations, environmental health, expeditionary medical support, and aeromedical evacuation (http://wwwsam.brooks.af.mil/, accessed August 28, 2003)
	Air Force Institute for Occupational Health	Promotes health through environmental and health surveillance, risk analysis, process reengineering, consultation and technological innovations (http://starview.brooks.af.mil/afioh/, accessed August 28, 2003)

and specifies functional responsibilities for functional combatant commanders. CJCS is required by statute to conduct a review of the UCP "not less often than every two years" and submit recommended changes to the president through the secretary of defense.[12]

The secretary of defense can assign forces to combatant commands. The only forces *assigned*[13] to NORTHCOM are Standing Joint Force Headquarters-Homeland Security,[14] Joint Task Force-Civil Support (JTF-CS), and Joint Task Force-6 (the counterdrug task force on the southwest border of the United States).

The Joint Strategic Capabilities Plan (JSCP)[15] apportions resources, including forces, to various combatant commanders based on identified requirements for specific operations. (The JSCP is described further later in this chapter.) Currently, the only "forces" *apportioned* to NORTHCOM are the dual-apportioned headquarters elements of its component command. The National Command Authority can, of course, *allocate* forces to NORTHCOM for a specific contingency.[16]

---

[12] 10 U.S. Code, Section 161.

[13] *Assigned forces* are those forces that have been placed under the combatant command (command authority) of a unified commander by the secretary of defense in his "Forces For Unified Commands" memo. Forces and resources so assigned are available for normal peacetime operations of that command. DoD, *Doctrine for Planning Joint Operations*, DoD Joint Publication 5-0, April 13, 1995, http://www.dtic.mil/doctrine/jpplanningseriespubs.htm, accessed September 26, 2003.

[14] Recently abolished.

[15] See DoD, *Joint Doctrine for Campaign Planning*, DoD Joint Publication 5-00.1, January 25, 2002, http://www.dtic.mil/doctrine/jpplanningseriespubs.htm, accessed September 26, 2003.

[16] Apportioned forces and resources are those made available for deliberate planning as of a certain date. They may include those that are assigned, those that are expected through mobilization, and those that are programmed. They are apportioned by the JSCP for use in developing deliberate plans and may be more or less than those allocated for execution planning. Allocated forces and resources are those provided by the Secretary of Defense for execution planning or actual implementation. The allocation of forces and resources is accomplished through procedures established for crisis action planning. DoD, 1995.

Guidance

The DoD structure—both military and civilian—for both homeland defense and for military support to civil authorities has been recently amended with the addition of the Assistant Secretary of Defense for Homeland Defense and NORTHCOM (see Chapter Three). If the traditional military process is followed, additional policy guidance that will lead to the development of new doctrine, plans, training, and potentially new equipment acquisition will now be required. Arguably, new doctrine will be needed, for example, to develop rules for the use of the military domestically, especially for the homeland defense military mission that differs in important aspects from military missions abroad.

Much of the task for developing that guidance will undoubtedly fall to the new Assistant Secretary of Defense for Homeland Defense, at least for being the focal point for its coordination within the Office of the Secretary of Defense (OSD) and with the military departments, Joint Staff, and defense agencies. That process will, of course, involve close coordination with NORTHCOM and with specific technical-matter entities, for example, the Assistant Secretary of Defense for Health Affairs for medical matters.

Planning

The Joint Strategic Planning System. The CJCS has the responsibility for preparing strategic plans for the armed forces to be ready for war. The Joint Strategic Planning System (JSPS) provides the framework for this strategic planning. As stated in a U.S. Army War College handbook,

> The JSPS is a flexible and interactive process, and is the primary formal means by which the [CJCS], in coordination with other members of the Joint Chiefs of Staff (JCS) and combatant commanders, carries out statutory responsibilities and discharges strategic planning responsibilities. The JSPS is the mechanism for translating national security policy, resource planning guidance (as reflected in the National Security Decision Directive [NSDD]), and [combatant commander] requirements into strategic guidance, force structuring objectives, and operations planning guidance.[17]

Based on the President's National Security Strategy, the CJCS develops a National Military Strategy (NMS). The NMS describes the strategic landscape and directs the development of the JSCP, which provides short-term operational planning guidance and tasks the geographic combatant commanders and Service Chiefs to develop deliberate plans.[18] The Joint Operations Planning and Execution System (JOPES) is the procedural foundation within the JSPS for developing those plans:

> JOPES embodies a single set of IT [information technology] procedures that, combined with administrative policies and procedures, govern all aspects of conventional military operation planning and execution (including theater-level nuclear and chemical plans). This single networked system ensures that all participants in all aspects of joint military planning and execution use the same vocabulary, procedures,

---

[17] U.S. Army War College, *How the Army Runs: A Senior Leader Reference Handbook, 2001–2002*, Carlisle, Pa.: U.S. Army War College, 2001, p. 6-2. JSPS and JOPES are described in Chapters 4 and 6; http://www.carlisle.army.mil/usawc/dclm/linkedtextchapters.htm, accessed 5 September 5, 2003.

[18] U.S. Army War College, 2001, Chapters 4 and 6.

> and joint IT support, thus facilitating the transition from training to planning, then to effective military operations.[19]

JOPES planning is based on capabilities and the forces specified for planning in the JSCP and CJCS orders. Generally, it relies on continuous monitoring and simulation and analysis to move from threat identification and assessment through detailed planning and, finally, implementation. JOPES procedures and IT systems are the mechanisms for submitting movement requirements (for deployment of forces) to the U.S. Transportation Command (TRANSCOM).

Of particular importance to planning for MSCA are the threat assessment and simulation and analysis components of JOPES. Generally, warfighting requirements are analyzed using combat simulations. On the other hand, the processes for matching requirements and capabilities for foreign missions may not readily lend themselves to domestic operations. The JSPS and JOPES are good examples. Both are based on traditional military operations against nation-state enemies and are structured to deploy and employ units through such mechanisms as the Time-Phased Force Deployment Data and Time-Phased Force Deployment List processes, which also may not readily lend themselves to MSCA missions. For example, those processes do not normally capture the non-Unit Identification Code (non-UIC) for ad hoc organizations, such as the special medical response teams embedded in the MHS infrastructure. Perhaps more important is the fact that the planning process is founded on an ability to match capabilities with quantifiable requirements.

Determining Requirements and Matching Capabilities. For the MSCA missions, a comprehensive requirements process is relatively nonexistent. As noted earlier, creating such a process for identifying the potential response requirements of other government entities at various levels will logically be a task for the U.S. Department of Homeland Security (DHS) to accomplish, not DoD. Nevertheless, DoD will certainly need to be involved in developing such a process so that requirements can be stated in such a way that when they are approved they can be translated into military civil-support missions as is appropriate, resulting in the identification of units to conduct those missions.

Other than those few headquarters and their subordinate planning elements, there are now no units apportioned to NORTHCOM or to other commanders for civil support missions, including medical support. As a result of some recognized potential requirements in the medical support context, the military services have created ad hoc response entities, as described earlier in this chapter. Those entities, and the structure and readiness posture of non-UIC entities that exist in various service components—potentially important assets for civil support—may not be readily known to planners of civil support.[20]

Further, because no units have been assigned a dedicated mission responsibility for MSCA (other than National Guard Weapons of Mass Destruction Civil Support Teams [WMD-CSTs]), the equipment and personnel in units that may be called to respond to a domestic incident may not be entirely appropriate to the situation.[21] The obvious reason for

---

[19] U.S. Army War College, 2001, p. 6-5.

[20] Among the uses of a UIC is the assignment of units to deployment plans. Infrastructure assets do not have UICs.

[21] It should be noted that several small active-duty response teams have been specially designed to deal with CBRNE events. However, other than the WMD-CSTs, those additional existing CBRNE response teams are also deployable to theaters abroad. Technically, the WMD-CSTs could also be called upon to deploy abroad, but policies governing the use of

this lack of appropriateness is that what may be needed in a given response situation has not been defined. It is likely that civil support requirements, when they are determined in specific cases (probably during the response), will be satisfied with some "packaging" of assets, such as small teams built on derivative UICs through an ad hoc process. The problem is further compounded by the lack of a comprehensive training program—one that could be imbedded in individual and unit training systems—for providing civil support.

Limitations to Consider When Planning for Military Assistance

None of the foregoing discussion is intended to suggest that the Title 10 medical force structure should be designed exclusively or primarily for civil support missions, even if a comprehensive panoply of civil requirements has been determined. Nevertheless, such requirements might be considered when force design decisions are being developed and implemented. Given that the skills and materials required to provide health care in military settings are similar to those required in civilian settings, it is possible that many civil-support requirements could be met with the current force structure, including the current personnel and equipment.

Nor is the foregoing discussion intended to suggest that civilian agencies plan (or should plan) to use military capability as a primary means to carry out emergency response. There are several limitations that civilian agencies should consider before they request or even consider military support in the event of an emergency.

Military Assets May Be Engaged in Other Missions

Military units that may be capable of fulfilling civilian support missions may be otherwise engaged at any point in time and may be engaged in other parts of the world, as many are at the time of this writing. Without a primary MSCA mission, no units are "held in reserve" in the event they are called upon for civil support.

Military Assets Are Maintained at Various Readiness Levels Based on Wartime Requirements

Readiness levels are based on warfighting and deployment requirements, and those requirements may differ from those for civil support. For units that may have appropriate personnel or equipment, their current "level of fill" (how many personnel are actually assigned to a unit versus how many are authorized) at any given time or their training readiness posture may further complicate effective use of a specific unit for a civil support mission.

Further complications arise from the fact that the overall force structure between actual periods of conflict is based on war plans (i.e., plans for foreign conflict). As a result of numerous force structure decisions over many years of policymaking and political debates, half of the deployable military medical assets reside within the reserve components. Absent the "catastrophic terrorism" conditions that will allow for the involuntary mobilization of reserve component units or personnel (further discussed in Chapter Four), such mobilization may not otherwise be possible.

WMD-CSTs make this eventuality unlikely. For example, the Marine Corps' Chemical Biological Incident Response Force (CBIRF) is worth mentioning; while deployable abroad, the CBIRF is in fact focused on homeland operations.

CHAPTER THREE

The Evolution of Structures, Systems, and Processes for Domestic Preparedness

Although it may be surprising in retrospect, the 1993 attack on New York's World Trade Center did not provide the impetus for a unified and comprehensive national response to possible additional terrorist attacks inside the United States. It took the 1995 terrorist attack in the Tokyo subway system by the fanatical apocalyptic religious cult Aum Shinrikyo to spur the U.S. Congress and others to action.[1] The Nunn-Lugar[2] congressional hearings on U.S. preparedness and response capabilities in the event of a terrorist attack were underway when the Alfred P. Murrah Federal Building in Oklahoma City was attacked and destroyed on April 19, 1995.

The events in Tokyo and Oklahoma City resulted in enactment by Congress of the Nunn-Lugar-Domenici legislation.[3] The statutory provisions of that legislation required, among other things, that the Department of Defense conduct training in the 120 most populous U.S. cities to enhance preparedness[4] against "weapons of mass destruction."[5]

Recommendations from National Commissions

Prior to the attacks of September 11, 2001, and the anthrax attacks in the United States later that year, Congress directed the establishment of several "blue ribbon" panels to consider the potential for terrorist attacks on the homeland and to recommend specific legislative and administrative actions to enhance U.S. preparedness and response capabilities.

In the Fiscal Year 1999 National Defense Authorization Act, Congress created the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons

---

[1] For the most complete account of the aims, motivations, and capabilities of the Aum Shinrikyo sect, see Kaplan, D. E., and A. Marshall, *The Cult at the End of the World: The Incredible Story of Aum*, London, UK: Hutchinson, 1996. See also Brackett, D.W., *Holy Terror: Armageddon in Tokyo*, New York and Tokyo: Weatherhill, 1996, and Lifton, R. J., *Destroying the World to Save It: Aum Shinrikyo, Apocalyptic Violence, and the New Global Terrorism*, New York: Metropolitan Books, 1999.

[2] Full name is Nunn-Lugar Cooperative Threat Reduction Program.

[3] Full name is Defense Against Weapons of Mass Destruction Act of 1996, or the Nunn-Lugar-Domenici amendment to the National Defense Authorization Act for Fiscal Year 1997 (Public Law 104-201, September 23, 1996).

[4] Numerous shortcomings in the Nunn-Lugar-Domenici programs were subsequently reported. See GAO, *Combating Terrorism: Observations on the Nunn-Lugar-Domenici Domestic Preparedness Program,* Testimony Before the Subcommittee on National Security, International Affairs and Criminal Justice, Committee on Government Reform and Oversight, House of Representatives, Washington, D.C.: U.S. General Accounting Office, GAO/T-NSAID-99-16, October 2, 1998, available at http://www.gao.gov/archive/1999/ns99016t.pdf, accessed September 2, 2003.

[5] As mentioned in Chapter One, we refer to weapons by their specific type—chemical, biological, radiological, nuclear, and conventional high explosives, which is more specific than the somewhat vague shorthand term "WMD."

of Mass Destruction[6] (also known as the "Gilmore Commission" after its chairman, Virginia Governor James Gilmore). The panel was directed to

- assess federal agency efforts to enhance domestic preparedness for incidents involving weapons of mass destruction
- assess the progress of federal training programs for local emergency responses to incidents involving weapons of mass destruction
- assess deficiencies in programs for response to incidents involving weapons of mass destruction, including a review of unfunded communications, equipment, and planning requirements, and the needs of maritime regions
- recommend strategies for ensuring effective coordination with respect to federal agency weapons of mass destruction response efforts, and for ensuring fully effective local response capabilities for weapons of mass destruction incidents
- assess the appropriate roles of state and local government in funding effective local response capabilities.[7]

The Gilmore Commission was required to report its conclusions and recommendations to the president and Congress in a series of annual reports, which began in December 1999.[8] In each report, the advisory panel made specific, detailed recommendations—many of which apply to the use of the military domestically—for actions to enhance U.S. capabilities for combating terrorism across the spectrum of potential attacks.

In 1999, Congress also created the National Commission on Terrorism,[9] whose focus was on the international aspects of the threat of terrorism. The commission also pointedly warned of the lack of preparedness of the U.S. military to respond effectively to a catastrophic terrorist attack.[10]

The U.S. Commission on National Security/21st Century, also known as the Hart-Rudman Commission, likewise made specific recommendations for improving homeland defense capabilities, some of which are specifically directed at DoD entities, most particularly the National Guard.[11]

---

[6] Public Law 105-261 (H.R. 3616, 105th Congress, 2nd Session), October 17, 1998, Section 1405, as amended.

[7] Public Law 105-261, 1998, Section 1405, d., as amended.

[8] The RAND Corporation provided analytical support to the Advisory Panel. That effort was led by two authors of this report (Wermuth and Brower). The Gilmore Commission released its fifth and final annual report on December 15, 2003. Copies of the Gilmore Commission reports and related information can be found at http://www.rand.org/nsrd/terrpanel.

[9] Section 591 of the Foreign Operations, Export Financing, and Related Programs Appropriation Act, 1999 (as contained in the Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1999 [Public Law 105-277]).

[10] "The U.S. Government's plans for a catastrophic terrorist attack on the United States do not employ the full range of the Department of Defense's capabilities for managing large operations. . . . (I)n extraordinary circumstances, when a catastrophe is beyond the capabilities of local, state, and other federal agencies, or is directly related to an armed conflict overseas, the President may want to designate DoD as a lead federal agency. . . . Current plans and exercises do not consider this possibility. . . . The DoD is not optimally organized to respond to the wide range of missions that would likely arise from the threat of a catastrophic terrorist attack." National Commission on Terrorism, *Countering the Changing Threat of International Terrorism*, n.d., p. 27, available at http://w3.access.gpo.gov/nct/, accessed September 3, 2003.

[11] U.S. Commission on National Security/21st Century, *Roadmap for National Security: Imperative for Change, Phase III Report*, February 15, 2001, available at http://www.nssg.gov/PhaseIIIFR.pdf, accessed September 3, 2003.

New Players and New Roles in Homeland Security

In spring 2001, the president had designated Vice President Richard Cheney to lead an effort to develop recommendations for policy and structural changes in the Executive Branch for improving national efforts to combat terrorism. By the end of summer 2001, the vice president had met with numerous federal, state, and local officials, representatives of the private sector, and senior representatives of Executive Branch departments and agencies, and was in the process of preparing his recommendations to the president.

The Office of Homeland Security and the National Strategy

Following the September 2001 terrorist attacks, and as the anthrax attacks of that fall were still unfolding, the president by executive order created the White House Office of Homeland Security. As one of its most important tasks, OHS was required to develop and publish a national strategy for dealing with terrorist threats. The *National Strategy for Homeland Security*, released in July 2002, was the first step toward articulating a truly national, not just federal, approach to the problems of combating terrorism.[12]

The National Strategy clearly recognizes the critical role of state and local jurisdictions: "All manmade and natural disasters are ultimately local events—with local units being the first to respond and the last to leave."[13] The National Strategy is also explicit in its description of the role of the military in the homeland:

> There are *three circumstances* [emphasis added] under which the Department of Defense would be involved in improving security at home. In extraordinary circumstances, the Department would conduct military missions such as combat air patrols or maritime defense operations. The Department would take the lead in defending the people and the territory of our country, supported by other agencies. Second, the Department of Defense would be involved during emergencies such as responding to an attack or to forest fires, floods, tornadoes, or other catastrophes. In these circumstances, the Department may be asked to act quickly to provide capabilities that other agencies do not have. Finally, the Department of Defense would also take part in "limited scope" missions where other agencies have the lead—for example, security at a special event like the recent Olympics.[14]

The first of the three circumstances cited above is what is referred to as "homeland defense." The second and third circumstances describe what is known variously as "military support to civil authorities," "military assistance to civil authorities," or more generically within certain military circles as "civil support."[15]

---

[12] The White House, *National Strategy for Homeland Security,* Washington, D.C.: U.S. White House Office of Homeland Security, July 2002*,* available at http://www.whitehouse.gov/homeland/book/nat_strat_hls.pdf, accessed February 3, 2003.

[13] The White House, 2002, p. 12.

[14] The White House, 2002, p. 13.

[15] The *National Strategy* document uses the term military support to civil authorities (p. x). We also use this term for specificity.

The Department of Homeland Security

The Homeland Security Act of 2002[16] created the U.S. Department of Homeland Security. In doing so, it merged all or major portions of 27 federal entities into a single new department with approximately 180,000 employees, making it second in size only to the Department of Defense among U.S. federal government organizations. The act's only explicit mention of military roles and missions is found in Section 876:

> Nothing in this Act shall confer upon the Secretary [of Homeland Security] any authority to engage in warfighting, the military defense of the United States, or other military activities, nor shall anything in this Act limit the existing authority of the Department of Defense or the Armed Forces to engage in warfighting, the military defense of the United States, or other military activities.

Homeland Security Presidential Directive-5

It is clear that the Secretary of Homeland Security is intended to have responsibilities in areas that extend beyond DHS. On February 28, 2003, the president issued Homeland Security Presidential Directive-5 (HSPD-5), "Management of Domestic Incidents."[17] It names the Secretary of Homeland Security as "the principal Federal official for domestic incident management." It further states:

> Pursuant to the Homeland Security Act of 2002, the Secretary is responsible for coordinating Federal operations within the United States to prepare for, respond to, and recover from terrorist attacks, major disasters, and other emergencies. The Secretary shall *coordinate* [emphasis added] the Federal Government's resources utilized in response to or recovery from terrorist attacks, major disasters, or other emergencies if and when any one of the following four conditions applies: (1) a Federal department or agency acting under its own authority has requested the assistance of the Secretary; (2) the resources of State and local authorities are overwhelmed and Federal assistance has been requested by the appropriate State and local authorities; (3) more than one Federal department or agency has become substantially involved in responding to the incident; or (4) the Secretary has been directed to assume responsibility for managing the domestic incident by the President.[18]

The word *coordinate,* which is used frequently in HSPD-5, is neither defined nor explained in context. Moreover, the following passage from HSPD-5 indicates that "coordinate" cannot be interpreted as a diminishment in the authority of the Department of Defense in the event of a domestic incident:

> Nothing in this directive impairs or otherwise affects the authority of the Secretary of Defense over the Department of Defense, including the chain of command for military forces from the President as Commander in Chief, to the Secretary of Defense, to the commander of military forces, or military command and control procedures. The Secretary of Defense shall provide military support to civil

---

[16] Public Law 107-296 (H.R. 5005), November 25, 2002.

[17] The White House, "Homeland Security Presidential Directive/HSPD-5: Management of Domestic Incidents," Washington, D.C.: The White House, February 28, 2003, available at http://www.whitehouse.gov/news/releases/2003/02/20030228-9.html, accessed March 15, 2003.

[18] The White House, 2003, paragraph 4.

> authorities for domestic incidents as directed by the President or when consistent with military readiness and appropriate under the circumstances and the law. The Secretary of Defense shall retain command of military forces providing civil support. The Secretary of Defense and the Secretary [of Homeland Security] shall establish appropriate *relationships and mechanisms* [emphasis added] for cooperation and coordination between their two departments.[19]

As of this writing, the "relationships and mechanisms" mentioned in the directive have not yet been fully articulated and established.

The National Response Plan

HSPD-5 requires that the Secretary of Homeland Security "develop . . . and administer a National Response Plan (NRP). . . . This plan shall integrate Federal Government domestic prevention, preparedness, response, and recovery plans into one all-discipline, all-hazards plan."[20] It is fairly obvious that the drafters of HSPD-5 envisioned that the plans, relationships, and mechanisms for military support to civil authorities will be contained in the new NRP. But what about DoD plans for homeland defense? Are they considered "domestic prevention, preparedness, response, and recovery plans" within the scope of HSPD-5?

Consider an actual incident as a way of illustration. On September 11, 2001, a fourth hijacked airliner crashed in a field near Shanksville, Pennsylvania, about 80 miles from Pittsburgh, after passengers on board took action into their own hands, rather than reaching what is thought to be its intended target. If the airliner had not crashed, and if Air Force fighters had intecepted it at some point, there is little doubt that the aircraft would have been forced down, or perhaps even shot down, by direct military action. If that had occurred, the response requirements would not have ended with that action. There also would have been consequences on the ground, with responsibility for emergency action falling to the traditional local responders. Does a situation such as this argue for more robust advance planning and coordination between DoD and DHS, including Homeland Defense plans and the inclusion of those plans in the NRP?

During the development of the full NRP (which is still awaiting publication as of this writing), it was the intention of the White House that existing federal response plans continue to be in effect, subject to the DHS secretary's "coordination" responsibilities (as stated above). Given that the FRP, which is administered by the Federal Emergency Management Agency (FEMA), is among a family of federal plans and that FEMA itself now belongs to the Department of Homeland Security, requests for military support to civil authorities—federal, state, and local—including requests for military medical assets, must now be submited through the new department to DoD.[21]

---

[19] The White House, 2003, paragraph 9.

[20] The White House, 2003, paragraph 16.

[21] DHS, "Initial National Response Plan," Washington, D.C.: U.S. Department of Homeland Security, Office of the Secretary, September 30, 2003, available at http://www.dhs.gov/interweb/assetlibrary/Initial_NRP_100903.pdf, accessed June 2004.

The Role of DoD in Civil Response: An Overview

The Department of Defense provides many types of support to civil authorities. (Support to law enforcement engaged in counterdrug activities is one example.) DoD often assists in the aftermath of natural disasters and also often provides support in nonemergency situations.

The National Disaster Medical System

Even before the attacks of September 11, 2001, DoD played a significant role in cooperating with civilian agencies in response preparation and execution. The Department of Defense is a "partner" in the U.S. Department of Homeland Security National Disaster Medical System (NDMS). A DoD directive details DoD participation in NDMS,[22] describing it as "a joint Federal, State, and local mutual aid organization for a coordinated medical response, patient movement, and definitive inpatient care in time of war, U.S. national emergency, or major U.S. domestic disaster." The directive describes the NDMS mission as follows:

- Emergency medical care support and assistance provided by the DHHS [U.S. Department of Health and Human Services] civilian response teams. Under the FRP, the DoD Components may supplement DHHS emergency medical care.[23]
- Transportation of patients from a disaster site or between definitive medical sites in military contingencies to locations where definitive care is available. When local needs exceed transportation capabilities, the U.S. Transportation Command (TRANSCOM) shall provide necessary patient transportation assets to include medical crews and patient movement items.
- Definitive medical care provided by a network of civilian NDMS member hospitals. Reception, tracking, monitoring, and financial arrangements of patients are accomplished by Federal Coordinating Centers (FCCs) located at selected Veterans Administration Hospitals and Military Treatment Facilities (MTFs).

The DoD directive provides instructions to various DoD entities for participation in NDMS. It is the most explicit and comprehensive document on DoD support to the FRP Emergency Support Function 8—Health and Medical Services. It, therefore, constitutes current DoD policy and procedures for providing medical support to civil authorities. Surprisingly, considering the date of its publication, it makes no mention of NORTHCOM. As mentioned in Chapter Two, the DoD structure—both military and civilian—for both homeland defense and for military support to civil authorities has been recently amended with the addition of the Assistant Secretary of Defense for Homeland Defense and NORTHCOM.

Other DoD Directives Related to Civil Support

Several current DoD Directives contain provisions for providing support to civil authorities.[24] Unfortunately, the various definitions in those directives have created a confusing jumble of terminology—military support to civil authorities, military assistance to civil

---

[22] DoD, *The National Disaster Medical System*, DoD Directive 6010.22, Washington, D.C.: U.S. Department of Defense, January 21, 2003a, available at http://www.dtic.mil/whs/directives/corres/html/601022.htm, accessed March 20, 2004.

[23] Federal Emergency Management Agency, *Federal Response Plan,* "Emergency Support Function #8, Health and Medical Services Annex," n.d., available at http://www.fema.gov/txt/rrr/frp/frp_b_esfs.txt, accessed June 2004.

[24] A summary of each directive is contained in Appendix C.

authorities (MACA), military support to law enforcement agencies (MSLEA), and other terms, many of which are often used interchangeably. Discussions with senior DoD officials indicate that the family of related directives may be combined and reissued and that the definitions and other terminology will be clarified.

The Director of Military Support

Until recently, military support to civil authorities was coordinated primarily through the Director of Military Support. DOMS worked for the Secretary of the Army in the secretary's role as the DoD Executive Agent for MSCA, as designated by the Secretary of Defense. As the DoD Executive Agent, the Secretary of the Army had the authority to task combatant commanders, services, and defense agencies to provide MSCA for presidentially declared disasters, emergencies, and terrorist events. The Director of Military Support was the action agent for the Secretary of the Army and was responsible for validating requests for military assistance from lead federal agencies under the FRP and for planning, coordinating, and executing DoD's civil support activities. The responsibilities of the Secretary of the Army as Executive Agent and DOMS as the action agent have been split between the new ASD(HD) and the Joint Staff.

The Assistant Secretary of Defense for Homeland Defense

The National Defense Authorization Act for Fiscal Year 2003 created the new ASD(HD), who has "as his principal duty the overall supervision of the homeland defense activities of the Department of Defense."[25] The ASD(HD) is responsible for the development of policy and for coordination of homeland defense decisionmaking with the OSD. The ASD(HD) provides policy oversight for the homeland defense activities of the new U.S. Northern Command, as well as the U.S. Pacific Command, U.S. Transportation Command, and U.S. Strategic Command. The ASD(HD) also inherited the responsibilities of the Secretary of the Army for homeland security and homeland defense matters. As such, he is the DoD liaison with DHS and coordinates requests from DHS to DoD for military support to civil authorities and for military support to other federal agencies, states, and localities.

U.S. Northern Command

The latest combatant command in the Unified Command Plan, NORTHCOM, attained Initial Operating Capability on October 1, 2002. According to its own description, NORTHCOM's mission is homeland defense and civil support, specifically the following:

- Conduct operations to deter, prevent, and defeat threats and aggression aimed at the United States, its territories, and interests within the assigned area of responsibility; and
- As directed by the President or Secretary of Defense, provide military assistance to civil authorities including consequence management operations.[26]

NORTHCOM's Area of Operation includes air, land, and sea approaches and encompasses the continental United States, Alaska, Canada, Mexico, and the surrounding wa-

---

[25] Section 902, Public Law 107-314 (H.R. 4546), December 2, 2002.

[26] U. S. Northern Command, "Who We Are," NORTHCOM Web site, http://www.northcom.mil/index.cfm?fuseaction=s.whoweare, accessed September 3, 2003.

ter out approximately 500 nautical miles. It also includes the Gulf of Mexico, Puerto Rico and the U.S. Virgin Islands. The defense of Hawaii and territories and possessions in the Pacific remain the responsibility of the U.S. Pacific Command.

NORTHCOM has few assigned units—JTF-CS in Norfolk, Virginia; Standing Joint Force Headquarters-Homeland Security (established by U.S. Joint Forces Command [JFCOM] and transferred to NORTHCOM along with JTF-CS);[27] and Joint Task Force 6, the counterdrug JTF on the southwest border of the United States. It has no other assigned or apportioned forces. Its component commanders are dual-hatted, operating principally for other purposes day to day.[28] NORTHCOM does not have units identified for allocation as part of any deliberate planning process, nor does it have formal planning, training, or exercise relationships with such units, as is the case with other combatant commands.

NORTHCOM describes its civil support responsibilities as follows:

> - U.S. Northern Command provides military assistance to civil authorities in accordance with U.S. laws and as directed by the President or Secretary of Defense. Military assistance is always in support of a lead Federal agency, such as the Department of Homeland Security's Federal Emergency Management Agency.
> - Military civil support includes domestic disaster relief operations that occur during fires, hurricanes, floods, and earthquakes. Support also includes counterdrug operations and consequence management assistance, such as would occur after a terrorist event employing a weapon of mass destruction.
> - Generally, an emergency must exceed the management capabilities of local, State, and Federal agencies before U.S. Northern Command becomes involved. Normally, this decision is made after a request to the President by the appropriate State governor. In providing civil support, the command operates through subordinate Joint Task Forces.[29]

Within its Area of Operation, NORTHCOM will almost inevitably be responsible for executing any DoD medical civil support mission, as directed by the secretary of defense.

---

[27] The headquarters was recently abolished.

[28] For example, the Commander, U.S. Army Forces Command is dual-missioned as the Commander, Northern Land Component Command. The relationship applies, however, only to the commanders, not to the subordinate assigned forces of each command.

[29] U. S. Northern Command, "Who We Are—Civil Support," NORTHCOM Web site, http://www.northcom.mil/index.cfm?fuseaction=s.who_civil, accessed September 3, 2003.

CHAPTER FOUR

Legal and Other Barriers to Military Support to Civil Authorities

This research sought to answer a key question: What are the barriers, legal or other, to military support to civil authorities, and how can those barriers be overcome, if necessary? This chapter concludes that there is ample authority for the use of the military domestically, including the provision of military medical support in the event of a terrorist attack, and that no major new authority is necessary. The analysis that resulted in that conclusion is set forth in this chapter in detail.

Nevertheless, issues involving potential liability on the part of DoD and individual service members and various nonlegal barriers constrain effective military support. There is confusion inside the military and in civilian jurisdictions regarding the authority, capabilities, and appropriate role of the military, and cultural barriers exist between the military and civilian entities. These issues also are discussed in detail below.

Constitutional and Historical Bases for Use of the Military Domestically

As a matter of custom and practice, as well as Constitutional and statutory law, state governments and their political subdivisions have primary responsibility for coping with emergencies, including terrorist events. There is, nevertheless, ample authority and historical precedent for the use of the military inside the United States for a variety of operations, both for the military acting on its own and for the military providing support to civil authorities.

Despite the fact that the military has, in recent decades, developed a slogan that its responsibilities are "to fight and win the nation's wars"—with the implication that "wars" means foreign conflicts—the founding fathers had other ideas about the military's priorities. Article IV, Section 4 of the Constitution is explicit in this regard:

> The United States shall guarantee to every State in this Union a Republican Form of Government, and shall protect each of them against Invasion; and on application of the Legislature, or of the Executive (when the Legislature cannot be convened) against domestic Violence.

In the context of terrorism, these words obviously have new meaning. Beyond the military's role in defending the country in these explicit ways, several key points can be made with respect to the use of the military to assist civil authorities in the United States:

- The U.S. Constitution, the supreme law of the land, does not prohibit the use of the military to assist civil authorities in the United States. In fact, it provides several bases for such use.

- The U.S. Congress has enacted numerous pieces of legislation that enable the use of the military to support civil authorities. Congress has also enacted some legislation that constrains the use of the military to assist civil authorities. This constraining legislation, most notably the Posse Comitatus Act, primarily addresses the use of the military for certain civilian law-enforcement purposes.
- Congress has not significantly constrained the use of the military to provide support to civil authorities for response and recovery operations following such events as natural disasters or major accidents.
- The president has certain executive powers related to using the military to assist civil authorities.
- Depending on the actual circumstances, military personnel providing support to civil authorities could be found legally liable for their actions.

Statutory and Regulatory Authorities Enabling the Use of Military Assets to Support Civil Authorities

In this section, we describe the constitutional, statutory, and presidential authority for domestic use of the military, and various constraints on the exercise of that authority.

Constitutional Authority

Article I, Section 8 gives Congress the power to create military forces and provide for their regulation, and contains explicit language for "calling forth the militia" to enforce laws, "suppress Insurrections," and "repel Invasions."

Article II, Section 2 designates the president as commander in chief not only of regular federal forces, but also of the state militias, when in federal service. "Militia" in this context refers to what is now commonly known as the National Guard.

Article II, Section 2 also states that the president "shall take Care that the Laws be faithfully executed." In this context, it is interesting to note the use of the obligatory "shall" rather than the permissive "may."

As quoted above, Article IV, Section 4 states that the United States "shall protect" each of the states not only against invasion but also against "domestic Violence," again with the use of the obligatory "shall."

Congressional Authority: Posse Comitatus Act and Its Progeny

In the first century of the Republic, there were many instances in which the military was used to enforce civil laws. For example, President George Washington called out the militia to suppress the Whiskey Rebellion in Western Pennsylvania in 1794. Such use of the military eventually drew criticism, which was particularly directed against military actions during the reconstruction and post-reconstruction periods in the South. These circumstances led Congress to pass the Posse Comitatus Act (PCA) in 1878.[1] The PCA makes it a criminal of-

[1] 18 U.S. Code (U.S.C.) Section 1385. "Posse comitatus" translated from Latin means "the power or force of the county," referring to a body of persons summoned by a sheriff to preserve the peace or enforce the law. Congress did not prohibit the use of the military in Title 10—the code title for military activities generally—as a "posse comitatus" or as another means of enforcing the laws; it made it a crime under Title 18 to do so. Moreover, the statute does not refer to the laws "of the United States"; it refers to "the laws" generally, which can include the laws of the various states.

fense to use "any part of the Army or Air Force as a posse comitatus or otherwise to execute the laws" unless expressly authorized by the Constitution or Congress.[2] The PCA, therefore, generally proscribes the use of the Army and Air Force in civilian law enforcement, but it has not prevented military support in national emergencies, such as responding to illegal strikes and for disaster relief. The PCA does not specifically apply to the U.S. Navy and the U.S. Marine Corps, but those services have been included within its scope by DoD regulation.[3] The PCA does apply to the Title 10 reserve components, including the National Guard when brought into federal status. It does not apply to National Guard units in "state" or "Title 32" status, nor does it apply to the U.S. Coast Guard, which is now part of the Department of Homeland Security in peacetime.

No case has been reported involving criminal prosecution of someone for violating the PCA. As one military law scholar explained, "Posse Comitatus today is more of a procedural formality than an actual impediment to the use of U.S. military forces in homeland defense" because of a "gradual erosion of the Act's prohibitions over the past twenty years."[4]

Congress has created a number of independent statutory bases that enable the use of the military to support civil authorities. Those authorities include explicit and implicit statutory exceptions to the PCA, which fall into four broad categories:

- Civil disturbance/insurrections
- Counterdrug operations
- Disaster relief
- Counterterrorism/weapons of mass destruction.

Congressional Authority: Civil Disturbance (or Insurrection) Statutes

The Civil Disturbance (or Insurrection) Statutes create broad authority for using the military to suppress insurrections, rebellions, and unlawful combinations and conspiracies in the United States—an extension of the constitutional mandate to protect the states against domestic violence.[5] Section 333 of Title 10 also permits military intervention when the constitutional rights of any state's citizens are threatened by insurrection, domestic violence, unlawful combination, or conspiracy. Therefore, the president can readily use the federal military for law enforcement during a national emergency involving civil disturbances or insurrections.

Under these statutes, the president has authority to call into federal service the state militia at the state's request "whenever there is an insurrection in any State against its government." Even without a governor's request (e.g., in the event the state's Executive Branch is disabled), the president may use the militia and armed forces to enforce federal authority and laws.[6] Before taking this action, the president must "by proclamation, immediately order the insurgents to disperse."

---

[2] The PCA was amended in 1956 to include the Air Force.

[3] 32 Code of Federal Regulations (CFR) Part 215.

[4] Trebilcock, C. T., "The Myth of Posse Comitatus," *Journal of Homeland Security*, October 2000, available at http://www.homelandsecurity.org/journal/Articles/Trebilcock.htm, accessed September 3, 2003.

[5] 10 U.S.C. Sections 331–335.

[6] 10 U.S.C. Section 332.

The Insurrection Statutes have been used many times in U.S. history. For example, they were the legal basis for deploying the military to break the Pullman strike of 1894 that disrupted railroad service. More recent examples include using the military to help integrate public schools and universities, control racial unrest, and to enforce various other federal and state laws.[7]

In terms of responding to a terrorist event, the Insurrection Statutes enable the president to direct the military to play a significant role in responding to such situations in the United States, as such acts could easily fall under the law's purview. The Insurrection Statutes do not limit the types of military assets that can be deployed.

Congressional Authority: Counterdrug and Related Statutes

Beginning in 1981, and as amended in later years, Congress passed legislation authorizing the use of the military for a number of activities in counterdrug operations, both inside the United States and extraterritorially.[8] As a result of later amendments to those statutes, many of the statutes now apply to combating terrorism. Activities authorized under them include:

- Intelligence and information sharing
- Use of military equipment and facilities
- Training and advice to law enforcement agencies
- Maintenance and operation of equipment owned at the federal, state, and local levels.

Notably, Section 374 of Title 10, originally crafted as authority for counterdrug activities, now also applies to "a foreign or domestic counter-terrorism operation." That section of Title 10 specifically authorizes military personnel to operate equipment for the following purposes:

- Detection, monitoring, and communication of the movement of air and sea traffic
- Detection, monitoring, and communication of the movement of surface traffic outside of the geographic boundary of the United States and within the United States not to exceed 25 miles of the boundary if the initial detection occurred outside of the boundary
- Aerial reconnaissance (but not surveillance)
- Interception of vessels or aircraft detected outside the land area of the United States for the purposes of communicating with such vessels and aircraft to direct such vessels and aircraft to go to a location designated by appropriate civilian officials
- Operation of equipment to facilitate communications for numerous activities including the enforcement of "[a]ny law, foreign or domestic, prohibiting terrorist activities."

---

[7] Most recently, the statutes were the legal basis for sending U.S. Army forces to Los Angeles to help control rioting in the wake of the alleged police beating of Rodney King in 1992.

[8] 10 U.S.C. Sections 124 and 371 *et seq.*

The Insurrection Statutes, coupled with the later counterdrug/counterterrorism statutes, provide ample opportunity for use of military capability, even in the medical context, for activities such as quarantine, isolation, and *cordon sanitaire.*[9]

Congressional Authority: Disaster Relief and the Stafford Act

The Robert T. Stafford Disaster Relief and Emergency Assistance Act[10] ("Stafford Act") amended and expanded the federal government's disaster relief efforts under the president's coordination, which were originally contained in the Disaster Relief Act of 1950. The Stafford Act provides federal assistance to state and local governments by encouraging coordination measures. It authorizes restoration of essential government services and provision of emergency relief to affected governments, businesses, and individuals. At the federal level, the Federal Emergency Management Agency has been responsible for coordinating both disaster and civil defense preparedness across federal agencies. As mentioned in Chapter Three, with the creation of DHS—to which FEMA now belongs—the broader coordination authority under the Stafford Act is now vested in the Secretary of Homeland Security.

Under the Stafford Act, a presidential declaration of a major disaster or an emergency triggers federal assistance. The type of federal assistance available depends on whether the situation is considered a disaster or an emergency.[11]

Disaster assistance is generally broad in scope and includes long-term recovery programs and federal assistance to supplement state and local efforts and resources. The focus is on natural catastrophes but can apply to certain intentional acts.

Emergency assistance is generally narrower in scope and may be provided in response to "any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe."[12] For example, a terrorist attack could be considered an instance that prompts federal emergency assistance.

The Stafford Act gives the president, upon a governor's request, the discretion to declare a *major disaster*. Once the president declares a major disaster, there is broad authority to "direct any Federal agency, with or without reimbursement, to utilize its authorities and the resources granted to it under Federal law in support of State and local assistance efforts."[13] Moreover, at the president's direction, federal agencies may provide work and services essential to responding to immediate threats to life, property, or public health and safety, including the use, lending, or donation of federal equipment, supplies, facilities, and personnel to state and local governments. In addition, the president may implement specific longer-term assistance programs after the declaration of a major disaster.

The federal government can also provide relief when, upon request of a governor, the president declares an *emergency*. The procedure for requesting federal assistance in dealing

---

[9] A *cordon sanitaire* is a barrier designed to prevent a disease or another undesirable condition from spreading.

[10] Public Law 93-288, 42 U.S.C. Section 5121 *et seq.*

[11] 42 U.S.C. Section 5122(2) defines "major disaster" as "any natural catastrophe (including any hurricane, tornado, storm, high water, wind driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion."

[12] 42 U.S.C. Section 5122(1).

[13] 42 U.S.C. Section 5170a.

with an emergency is basically the same as that for requesting assistance in responding to a major disaster.[14] As with a declaration of a disaster, the Stafford Act provides broad authority with a presidential declaration of an emergency—authority to coordinate federal relief efforts; to provide technical and advisory assistance, and health and safety measures; and to assist in distributing medicine, food, and consumable supplies.[15] The president may unilaterally exercise any of the emergency assistance authorities when he determines that an emergency involves a subject area for which the United States exercises exclusive or preeminent responsibility and authority.[16]

Until the creation of DHS, FEMA exercised the Stafford Act authorities for establishing federal disaster assistance policy and coordinating most federal emergency preparedness, planning, management, and disaster assistance functions. That coordination has generally been accomplished through the Federal Response Plan, a signed agreement among 27 federal departments and agencies, including the American Red Cross, which

- outlines how the federal government plans to assist state and local governments
- describes the policies, planning assumptions, concept of operation, response and recovery actions, and responsibilities that guide federal operations
- provides the mechanisms to coordinate delivery of federal resources.

Until the publication of the forthcoming National Response Plan (see Chapter Three), most of the procedures established under the FRP will remain in effect.[17] The major change is that authority for the implementation of the Stafford Act is now vested in the Secretary of Homeland Security pursuant to the Homeland Security Act of 2002 (Public Law 107-296).

The Stafford Act specifically provides that the military may be used for disaster assistance and emergency assistance operations. For example, the president may direct the secretary of defense to use DoD resources "for the purpose of performing on public and private lands any emergency work which is made necessary by such incident and which is essential for the preservation of life and property."[18]

Congressional Authority: Counterterrorism and Weapons of Mass Destruction

In 1998, Congress expanded existing authority for use of the military to operate equipment in the conduct of counterdrug operations to apply as well to counterterrorism operations, both foreign and domestic, including transporting suspected terrorists to the United States for trial.[19] Most significant in the counterterrorism context, Congress also provided authority to use the military to assist in responding to biological and chemical weapon incidents. This use of the military may, under certain exceptional circumstances, include direct involvement

---

[14] 42 U.S.C. Section 5191(a).

[15] 42 U.S.C. Section 5192.

[16] 42 U.S.C. Section 5191(b).

[17] DHS, "Initial National Response Plan," Washington, D.C.: U.S. Department of Homeland Security, Office of the Secretary, September 30, 2003, p. 6, available at http://www.dhs.gov/interweb/assetlibrary/Initial_NRP_100903.pdf, accessed June 2004.

[18] 42 U.S.C. Section 5170(b)(1).

[19] 10 U.S.C. Section 374.

in arrests, searches, seizures, and the collection of specific intelligence.[20] Congress also provided authority to use the military for assistance in nuclear weapon terrorism cases, which may also include participation in arrest, search, and seizure activities.[21] Thus, Congress has provided explicit legal authority as exceptions to PCA—for the military to act in response to terrorist events involving chemical, biological, nuclear, or radiological weapons.

Congressional Authority: Quarantines, Evacuations, and Curfews

State and federal laws broadly authorize public health authorities to enact quarantines. At the federal level, the director of the U.S. Centers for Disease Control and Prevention (CDC) may take measures to prevent the spread of disease, as he deems reasonably necessary, whenever he determines that state measures are insufficient to prevent the spread of a communicable disease.[22] Moreover, the federal quarantine power also applies to (1) infectious diseases imported from foreign nations and (2) stopping the interstate transmission of infectious diseases.[23] Nevertheless, given the fact that such authority has (fortunately) not been used broadly, the precise scope and potential implementation of federal quarantine authority are uncertain.

In the event of a catastrophic terrorist event, particularly when a deadly biological agent (e.g., smallpox) is implicated, officials, including military personnel, may need to restrict the civil liberties of Americans, especially freedom of movement, to prevent mass chaos and to mitigate public health threats. The law recognizes that, to protect society, police power used to severely constrain personal liberties, such as preventing passage into or out of an infected area in order to limit contagion, may be justified.[24]

Yet, even in emergencies, restrictions on personal movement must be imposed in good faith and with an actual basis for the restrictions being necessary. The judiciary has been deferential to quarantines and related public health orders when conditions exist that may reasonably be said to put public health and safety in jeopardy. Although most of the case law related to government-ordered quarantines dates to before World War II, certain legal principles may be discerned from those decisions. A citizen's right to travel may be legitimately curtailed when a community has been ravaged by flood, fire, or disease and its safety and welfare are threatened.[25] To restrict the movement of a person because of a suspected infection, a credible, factual basis must exist to support the suspicion that the person has been exposed to contagion.

When a quarantine has been established over a particular area due to conditions within that area, the courts have upheld the quarantine order. A leading decision is *Miller v. Campbell County*.[26] After residents of a Campbell County subdivision became ill from leaking methane and hydrogen gases, county officials declared the subdivision uninhabitable and or-

---

[20] 10 U.S.C. Section 382.

[21] 18 U.S.C. Section 831.

[22] 42 CFR Section 70.2.

[23] 42 U.S.C. Section 264; 42 CFR Section 70.

[24] *Compagnie Francaise etc. v. Louisiana State Board of Health*, 186 U.S. 380, 1902.

[25] *Zemal v. Rusk*, 381 U.S. 1, 1965.

[26] *Miller v. Campbell Co.*, 945 F.2d 348, 10th Cir, 1991.

dered residents to evacuate the area. The plaintiff was arrested when he traveled through a roadblock in an attempt to return to his residence.

A *curfew* is a regulation that forbids people, or certain groups of people (e.g., minors), from being in specified public places during certain hours. In general, the courts perceive the enactment of a curfew as being legitimate, and they are also deferential to official discretion in this area. In cases in which the courts have struck down a curfew, they have done so because (1) the official who ordered the curfew was not authorized to do so, or (2) the curfew was vague and thereby encouraged discriminatory enforcement, or (3) the curfew was unreasonable for failing to permit legitimate exceptions.

Congressional Authority: New Authority for Use of the Reserve Components

Until 2002, Section 12304 of Title 10 contained an express restriction on the authority of the secretary of defense to call members or units of the federal reserve components to active duty to execute provisions of the Insurrection Statutes (discussed earlier in this chapter) or otherwise "to provide assistance to either the Federal Government or a State in time of a serious natural or man-made disaster, accident, or catastrophe." The rationale for that restriction was that the National Guard is the appropriate entity to call for this purpose and for activities following its call to federal service.

Section 514 of the National Defense Authorization Act for Fiscal Year 2003 expanded the authority for a reserve call-up under section 12304 to include "a terrorist attack or threatened terrorist attack in the United States that results, or could result, in catastrophic loss of life or property." The House-Senate conference on the National Defense Authorization Act for Fiscal Year 2004 substituted the word "significant"[27] for "catastrophic," with the result being an even-further expansion of authority to cover most terrorist incidents. Based on discussions with OSD officials, the department would like to see the restrictions removed entirely, so that the Title 10 reserves can be called to respond to "all hazards." Congress has, as yet, been unwilling to go that far.

Constraints on the Exercise of Explicit Authority

Despite the breadth and depth of authority to use the military in this context, there are, in addition to the PCA, a number of protections against abuse of that authority that are built directly into some statutes and contained in a number of federal regulations and policy documents. Several statutes specify conditional precedents, which must exist or occur, for the use of the military. Examples of those precedents include the following:

- A presidential Declaration of Disaster authorizing support under the Stafford Act[28]
- A proclamation, contained in the Insurrections Statutes,[29] to persons engaged in civil disorders to "disperse and retire"

---

[27] Congress did not define "significant" in that amendment but left an implication of its meaning in another amendment to Section 12304 in that bill, which appears immediately after the wording substitution: "(3) No unit or member of a reserve component may be ordered to active duty under this section to provide assistance referred to in subsection (b) unless the President determines that the requirements for responding to an emergency referred to in that subsection have exceeded, or will exceed, the response capabilities of local, State, and Federal civilian agencies."

[28] See 42 U.S.C., Sections 5170, 5170b, and 5191.

[29] 10 U.S.C., Section 374. There have been numerous such proclamations, primarily related to integration of schools in the South and riots in major U.S. cities, including more recently the Los Angeles riots of 1992.

- A specific order from the president calling for suppression of insurrections or other civil disobedience[30]
- Either a specific request from a state governor or legislature for assistance in suppressing an insurrection,[31] or a determination that other agencies have refused, failed, or are not capable of enforcing the laws to suppress insurrection or other civil disorder.[32]

In a number of cases, senior federal officials must request or approve, either individually or jointly with others, the use of military support:

- For several activities in the counterdrug/counterterrorism combined authority, a specific support request must come from the head of a federal law enforcement agency—e.g., the Drug Enforcement Administration, U.S. Coast Guard, U.S. Marshals, Federal Bureau of Investigation—even if the support is ultimately intended for a state or local government.[33]
- The secretary of defense and the attorney general (and for foreign operations, the secretary of state as well) must approve the transportation of law enforcement and military personnel, and the operation of bases of operation for counterdrug and counterterrorism activities.[34]
- For response to biological, chemical, and nuclear terrorist incidents, as well as for many of the other statutes for use of the military domestically, the secretary of defense and the attorney general must approve the specific activity.[35]

There are additional statutory, regulatory, and other policy limitations on military activities in support of civil authorities:

- There are provisions in several sections of the U.S. Code that require a determination that the activity will not have an adverse impact on military preparedness.[36]
- Several sections in the U.S. Code also require reimbursement from the supported agency under provisions of the Economy Act, although there is an exception when the activity is conducted in the course of training or when it provides equivalent training.[37]
- Although the legal counsel at the Department of Justice at one point opined that many of these statutes do not, unless stated explicitly, apply outside of the borders of the United States, the Department of Defense has consistently applied statutes outside the United States, and the key DoD Directive for such support states that excep-

---

[30] 10 U.S.C., Sections 331 and 334.

[31] 10 U.S.C., Section 331.

[32] 10 U.S.C., Section 334.

[33] 10 U.S.C., Section 374.

[34] 10 U.S.C., Section 374.

[35] 10 U.S.C., Section 382, and 18 U.S.C., Section 831.

[36] E.g., 10 U.S.C., Sections 376 and 382, and 18 U.S.C., Section 831.

[37] See 10 U.S.C., Sections 374 and 381.

tions to such extraterritorial application will be considered on a case-by-case basis, and then only in "compelling and extraordinary circumstances."[38]

- Although (as mentioned earlier) the specific provisions of the PCA do not apply to the U.S. Navy and the U.S. Marine Corps, they have been included in the provisions of the counterdrug statute that prevent their direct involvement in law enforcement; the Navy and Marines are also covered under PCA provisions by regulation.[39]
- The DoD Directive covering "military assistance to civil authorities" requires that each such request be evaluated against six criteria, most of which are regulatory expressions of statutory requirements, as are many other provisions in regulatory and policy guidance.[40]

Executive Authority: The President's Residual Authority

The president's authority, like all governmental authority, is delegated by the U.S. Constitution and therefore is limited.[41]

While the founding fathers might not have foreseen contemporary terrorist attacks and other catastrophic events, they did understand that "in a time of great crisis the government may exercise powers not ordinarily available, in order to preserve the nation itself."[42] For example, Alexander Hamilton said, "The circumstances that endanger the safety of nations are infinite and for this reason no constitutional shackles can wisely be imposed on the power to which the care of it is committed."[43] Accordingly, as one scholar has explained, "the President should have the inherent authority, in fact the responsibility, to preserve the nation, even if it means taking extreme actions not specified in the Constitution."[44] In the event the president faces an emergency situation requiring immediate action and when state and local officials cannot adequately respond, the president has a *residual authority* to use the military to prevent loss of life, to prevent wanton destruction of property, and to restore governmental functions and public order.

Support for the president's residual authority can be found in *Cunningham v. Neagle*, in which the U.S. Supreme Court stated that the president's powers are not simply "limited to the enforcement of Acts of Congress" but include "rights, duties, and obligations growing out of the Constitution itself, our international relations, and all the protection implied by the nature of the government under the Constitution."[45] The *Neagle* Court recognized the president's inherent authority to take measures to protect a Supreme Court justice who had been threatened with personal attack while discharging his duties.

---

[38] DoD Directive 5525.5.

[39] 10 U.S.C., Section 375; 32 CFR 213.2.

[40] The six criteria are legality (compliance with laws); lethality (potential use of lethal force by or against DoD forces); risk (safety of DoD forces); cost (who pays, impact on DoD budget); appropriateness (whether it is in the best interest of the DoD to conduct the requested mission); and readiness (impact on the DoD's ability to perform its primary mission). DoD Directive 3025.15, *Military Assistance to Civil Authorities (MACA)*, February 18, 1997.

[41] *See Youngstown Sheet and Tube Co. v. Sawyer,* 343 U.S. 579, 1952, which found unconstitutional President Harry Truman's executive order directing the secretary of commerce to take possession of the nation's steel mills.

[42] Dycus, S., et al., *National Security Law*, Jackson, Miss.: University of Mississippi School of Law, 1997, pp. 547–548.

[43] Hamilton, A., Federalist No. 23, quoted in Dycus et al., 1997, p. 548.

[44] Davies, K. L., "The Imposition of Martial Law in the United States," *Air Force Law Review*, Vol. 49, 2000, p. 88.

[45] 135 U.S. 1 at 64, 1890.

Executive Authority: Martial Law

The president can declare martial law, which allows the military broad authority to perform acts that are necessary for maintaining order and public safety. The legal basis for such a declaration is found in the U.S. Constitution. Article I, Section 9 states, "The privilege of the Writ of Habeas Corpus shall not be suspended, unless when in Cases of Rebellion or Invasion the public Safety may require it." *Habeas corpus* refers to a legal concept, whereby a person may not be held by the government without a legally acceptable reason for being held. A *writ of habeas corpus* can be issued by a court to a government agency (e.g., police force, military). Such a writ compels the agency to produce the person to the court and to establish to the court's satisfaction that the person is being reasonably held. Suspension of habeas corpus allows an agency to hold a person without a charge against that person; therefore, suspension of the right to a writ of habeas corpus is often equated with martial law.

In the United States, there is ample precedent for martial law. The best known examples occurred during the Civil War when President Abraham Lincoln declared martial law on a number of occasions in various geographic regions and in response to various events. Notably, at no time in U.S. history, including the Civil War, has a president ever declared nationwide martial law or taken such drastic steps as ordering the cessation of interstate commerce. The judicial decisions concerning the cases in which the president has declared martial law date to before 1900, and none of those decisions held that martial law is *per se* unconstitutional, nor did they impede the Executive power to address a serious crisis. In *Luther v. Borden,*[46] the U.S. Supreme Court upheld President John Tyler's mobilization of the Massachusetts and Connecticut militia. In the *Prize Cases,*[47] the Supreme Court deferred to President Lincoln's action, done without congressional authorization, during the Civil War in which he ordered a naval blockade of the seaports of the confederate states under his constitutional war power authority. Similarly, the U.S. Supreme Court in *In re Debs* upheld the authority of President Grover Cleveland to send federal troops to Chicago to enforce an injunction against union leader Eugene Debs and the American Railway Union, and concluded that, "If the emergency arises, the army of the nation, and all its militia, are at the service of the nation to compel obedience to its laws."[48]

The U.S. Supreme Court case *Ex parte Milligan*, decided in the aftermath of the Civil War, suggests that there are limits to presidential authority to declare martial law. In 1862, President Lincoln's secretary of war suspended the writ of habeas corpus for persons arrested for disloyal practices. A military commission convicted Lambdin P. Milligan, a confederate supporter and resident of Indiana, of treason and sentenced him to death.[49] Upon his conviction, Milligan petitioned the federal court for habeas corpus, arguing that his arrest, trial, and conviction were unconstitutional. Thus, the Court had to decide whether the military commission had the legal power and authority to try and to punish Milligan. The Court overturned Milligan's conviction by military commission despite the suspension of the writ of habeas corpus and the proclamation of martial law because the civil courts in Indiana were open and there was no need for a military commission. In overturning Milli-

---

[46] *Luther v. Borden*, 48 U.S. 1 (1849).

[47] *In re The Amy Warwick*, 67 U.S. 635 (1862) (also known as the *Prize Cases*).

[48] *In re Debs*, 158 U.S. 564 at 582, 1895.

[49] Indiana, like the rest of the United States, was part of a military district that was established to help conduct the union states' war effort.

gan's conviction, the Court explained that martial law is allowed only (1) during dire conditions of necessity or during war, (2) when the courts are closed, and (3) only in the actual war area. *Ex parte Milligan* suggests that it is the necessity of taking action to safeguard the public against insurrection, disorder, and similar events that creates the rule of martial law, and it also limits its duration. Martial law should end once the civil courts are reinstated and able to function.

Executive Authority: Executive Order

In the event of a national emergency, the president can use his own authority to issue executive orders that can have very serious consequences. One of the most notable cases concerns the internment of Japanese-Americans during World War II. Following the attack on Pearl Harbor in 1941, President Franklin Roosevelt issued Executive Order 9066, which authorized military personnel to detain and relocate persons of Japanese ancestry. An estimated 120,000 people, many of whom were U.S. citizens, were held without judicial review.[50] In a series of decisions, the U.S. Supreme Court deferred to the president's determination of the appropriateness of this action. In *Hirabayashi v. United States*, the Court emphasized the great discretion the president has in the area of war powers, noting that the Court's inquiry does not go beyond whether any of the decisionmakers had reasonable bases for their decision.[51] The Court's decision in *Korematsu v. United States* suggests that the principle of necessity proves that conditions can justify otherwise unacceptable actions.[52]

Executive Authority: DoD Policy on Military Assistance in Civilian Emergencies

The Department of Defense has promulgated policies directing the military to assist federal, state, and local authorities in the event of a "civil emergency." DoD personnel may have to act in nonmilitary settings without explicit statutory authority under DoD's "Immediate Response Authority," as set forth in two Department of Defense directives to support civil authorities during civil disturbances and disaster relief.[53] The types of immediate response support by DoD to civil bodies include:

- Rescue, evacuation, and emergency medical treatment of casualties, maintenance or restoration of emergency medical capabilities, and safeguarding the public health
- Emergency restoration of essential public services
- Emergency clearance of debris, rubble, and explosive ordnance from public facilities and other areas to permit rescue or movement of people and restoration of essential services
- Recovery, identification, registration, and disposal of the dead

---

[50] Dycus et al., 1997, p. 572.

[51] *Hirabayashi v. United States*, 320 U.S. 81, 1943.

[52] *Korematsu v. United States*, 323 U.S. 214, 1944. It should be noted that legal scholars have widely criticized the court's decisions in *Hirabayashi v. United States* and *Korematsu v. United States*.

[53] DoD Directive 3025.1, *Military Support to Civil Authorities (MSCA),* January 15, 1993; DoD Directive 3025.12, *Military Assistance for Civil Disturbances (MACDIS)*, February 4, 1994. DoD Directive 5525.5, *DoD Cooperation with Civilian Law Enforcement Officials*, January 15, 1986, addresses DoD cooperation with federal, state, and local (civilian) law enforcement.

- Decontaminating radiological, chemical, and biological effects; controlling contaminated areas; and reporting through national warning and hazard control systems
- Roadway movement control and planning
- Safeguarding, collecting, and distributing food, essential supplies, and materiel on the basis of critical priorities
- Damage assessment
- Interim emergency communications
- Facilitating the reestablishment of civil government functions.[54]

Legal Liabilities Implicated by the Use of Military Medical Assets to Support Civil Authorities

Federal and state laws generally provide immunity for officials whose responses to an emergency, such as a catastrophic terrorist event, are within the line and scope of their official positions. However, this immunity is not wholly absolute. The general rule is that grants of immunity are limited by a reasonableness standard that takes into account the policy objective for the grant of immunity. The judiciary decides what is meant by "reasonableness." Liability actions generally fall into three broad categories:

- Tort actions, claiming that an official or officials breached a duty
- Actions under 42 U.S.C. Section 1983 (if the action is state or local) and under *Bivens v. Six Unknown Named Agents of Federal Bureau of Narcotics* (if the action is federal), claiming that the official action violated a citizen's constitutional rights[55]
- Actions under various state statutes, claiming that official conduct violated rules or regulations.

Liability Under the Federal Tort Claims Act of 1946

The Federal Tort Claims Act (FTCA) of 1946 waives the federal government's sovereign immunity, subject to certain exceptions, from tort liability for acts or omissions of its employees "under circumstances where the United States, if a private person, would be liable to the claimant."[56] The FTCA grants exclusive jurisdiction to federal district courts to hear FTCA claims. It provides only for bench trials, not jury trials. A plaintiff must exhaust all administrative or statutory remedies before making an FTCA claim.

The FTCA's waiver of immunity is subject to 13 exceptions. The two most relevant exceptions in a public health context related to a terrorist event involve quarantines and discretionary functions. The FTCA excludes "any claim for damages caused by the imposition or establishment of a quarantine by the United States."[57] Although there is no relevant case law on the application of this provision, the text of the FTCA suggests that military person-

---

[54] DoD Directive 3025.1, 1993, 4.5.4.1-10.

[55] *Bivens v. Six Unknown Named Agents of Federal Bureau of Narcotics,* 403 U.S. 388, 1971, held that a violation of the Fourth Amendment's protection against unreasonable searches and seizures by a federal agent acting under color of federal authority gave rise to a federal cause of action for damages consequent on the agent's unconstitutional conduct.

[56] 28 U.S.C. Section 2674.

[57] 28 U.S.C. Section 2680(f).

nel participating in a quarantine action ordered by the federal government would enjoy immunity from tort liability.

The FTCA's discretionary function exception (DFE) and the Stafford Act immunize the United States against any claim based on "an act or omission of an employee of the Government based upon the exercise or performance or the failure to exercise or perform a discretionary function or duty on the part of a Federal agency or an employee of the Government, whether or not the discretion involved be abused."[58] The DFE's purpose is to protect government actions and decisions based on "social, economic, and political policy" in order to "prevent judicial 'second-guessing' of legislative and administrative decisions through the medium of an action in tort."[59]

A review of the applicable case law concerning federal tort liability is instructive. One might think that (1) cases holding the government liable for its actions in response to a crisis or threat would be rare and (2) courts would give broad deference to federal responders. To the contrary, the judiciary often rejects the discretionary function exception, and tends to hold federal responders to a high duty of care when their actions cause damage to private property. For example, in *Rayonier Inc. v. United States,* the Supreme Court held that U.S. Forest Service firefighters could be liable for negligent firefighting if state law would hold a private individual liable for similar conduct.[60] In *Miller v. United States,* however, the Court of Appeals for the Ninth Circuit dismissed the complaint against the fire service.[61] The Court determined that the damage resulted from a decision made by the firefighters while they were coping with multiple fires and considering how to minimize fire suppression cost, damage to resources, and environmental impact, and protect private property.

Case law concerning the liability of FEMA, the Army Corps of Engineers, and other agencies engaged in recovery actions after natural disasters closely parallels the Forest Service cases cited above. FEMA has been held immune from liability for deciding which damaged property should be cleared or whether federal agencies should undertake the property-clearing effort or make grants to state or local governments for that purpose.

But when a federal statute, regulation, or policy prescribes a specific course of action for a given situation, and the official violates that prescription, the DFE will not apply and immunity will not be found.[62] In other words, federal agents do not have unfettered discretion to violate mandatory federal regulations.[63] If their behavior does not comply with applicable regulations and when that noncompliance is the proximate cause of damage, the government is negligent *per se*.[64]

---

[58] 28 U.S.C. Section 2680(a).

[59] *United States v. A.A. Empresa de Viacao Aerea Rio Grandense (Varig Airlines),* 467 U.S. 797, 808, (1984).

[60] *Rayonier Inc. v. United States,* 352 U.S. 315, 321, 1957, on remand, *Arnhold v. United States*, 284 F.2d 326, 329–330 (9th Cir. 1960) held U.S. Forest Service firefighters liable under Washington state law for negligently failing to control a fire started on Federal land (*cert. denied*, 368 U.S. 876, 1961). See also *Anderson v. United States,* 55 F.3d 1379 (9th Cir. 1995; *Bennett v. United States,* 53 F.3d 1080 (9th Cir. 1995).

[61] *Miller v. United States,* 163 F.3d 591 (9th Cir. 1998).

[62] *Smalls v. U.S.E.P.A.*, 861 F.2d 60 (3d Cir. 1988).

[63] *Starrett v. United States*, 847 F.2d 539 (9th Cir. 1988).

[64] *Clark v. United States,* 660 F.Supp. 1164 (9th Cir. 1988).

Liability may be imposed if injury-causing negligence was unnecessary to execute policy choices. Thus, in *Ward v. United States*,[65] the plaintiff could recover damages resulting from a sonic boom induced by Air Force aircraft. Ordering military aircraft to undertake training flights was within the discretionary function exception, but the Court of Appeals for the Ninth Circuit held that the aircraft's negligent operation during maneuvers was not within the DFE. Similarly, in *Miller v. United States*, decisions by the U.S. government to keep lake levels within a specific range were discretionary and thus the government was immune from liability for those decisions; but the DFE did not apply, and thus immunity did not extend to government mistakes in judging how much water went through the lake's floodgates.

To summarize federal tort liability, no liability will follow from an official decision that involves policy considerations, even if the decision results in harming someone. However, if a policy action, once decided upon, can be carried out without causing harm, but an official proceeds in such a way that it causes unnecessary harm, then the DFE does not apply, immunity does not apply, and tort liability may follow. Applying these legal principles to a situation in which military medical assets are ordered in response to a terrorist event suggests that officials, including military personnel, could be held legally liable for mistakes they make in responding to a terrorist attack.

Interestingly, in the course of our conducting the exercises and interviews for this study, state and local officials indicated that there may be more willingness on their part to engage the military not only because of the protection from liability that may apply but potentially—especially for a catastrophic event requiring extreme measures—to shield state, local, and private-sector personnel (doctors and nurses) from personal liability.

Liability Under Section 1983 and *Bivens* for Violations of Constitutional Rights

Section 1983 of Title 42 of the United States Code provides that state and local officials or the governments for whom they work may be liable for actions that deprive persons of "any rights, privileges, or immunities secured by the Constitution and laws" of the United States.[66] Section 1983 thus provides a cause of action for persons desiring to bring a lawsuit because they believe state or local officials violated their rights. The Supreme Court, in *Bivens v. Six Unknown Named Agents of Federal Bureau of Narcotics,* extended this cause of action to persons wanting to bring a lawsuit because they believe federal officials violated their rights.

Four categories of Section 1983 and *Bivens* claims may arise in connection with catastrophic terrorism. First, liability may be imposed if responders create or increase a danger that harms a person. Second, liability may be imposed on government agencies for detaining persons, thereby preventing those persons from taking care of themselves, or for failing to attend to their needs, or for manifesting deliberate indifference to them. Third, liability may be imposed on government agencies for the use of excessive force in carrying out official functions. Fourth, liability may be imposed on government agencies for failing to protect persons from criminal violence.

---

[65] *Ward v. United States,* 471 F.2d 667 (3d Cir. 1973).

[66] 42 U.S.C. Section 1983.

Applying these legal principles to a situation in which military medical assets are ordered to respond to a terrorist event suggests that officials, including military personnel, could be held legally liable for *Bivens* claims.

Liability Related to the Management of Property, People, and Information

The federal government's overall response to a catastrophic terrorist event would likely include actions affecting the management of property, people, and information. Depending on the situation, military personnel might be intimately involved in these management matters. Such actions could impose serious infringements on an individual's civil rights.

Containment and mitigation of public health threats posed by a catastrophic terrorist event may require public health officials, including military personnel, to manage private property. This containment of public health threats may require seizing, closing, decontaminating, or destroying privately owned buildings, facilities, land, or other property—for example, in the case of property contaminated by chemical, biological, nuclear, or radiological agents. Officials may need to take control of private hospitals, health care facilities, hotels, and residences to provide space for the treatment of casualties. Officials may need to confiscate privately owned vehicles, pharmaceuticals, medical supplies, and equipment to help contain and mitigate the threat.

Such actions would pose legal issues, i.e., any federal, state, or local government seizure or confiscation of private property in response to a catastrophic terrorist event would be a taking under the Fifth Amendment to the U.S. Constitution as well as under state constitutions. As such, the government would have to pay appropriate compensation to the property owner.

The government's response to a catastrophic terrorist event (e.g., when there is a high-priority need for containment and mitigation of public health threats) may require officials, including military personnel, to manage people in extraordinary and unusual ways. For example, officials may need to force people exposed to chemical, biological, nuclear, or radiological agents to undergo medical examinations, treatment, decontamination, surveillance, or to be subjected to isolation by public health authorities. Officials may have to isolate or quarantine people in geographic areas affected by a communicable biological agent to prevent the spread of disease. Officials may also have to force evacuations of people who are in the vicinity of chemical, biological, nuclear, or radiological attacks.

Officials, including military personnel, may also need to conduct extensive management of personal and public information in response to a catastrophic terrorist event. For example, officials may need to access patient and health care information as part of their surveillance and monitoring duties. Because the law protects most medical information, such access could create liability if carried out unlawfully.

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) authorized the Standards for Privacy of Individually Identifiable Health Information, the most recent federal protection of individuals' health care information. These standards provide for certain exceptions in emergencies. Specifically, the HIPAA regulations address conditions that could be encountered during the government's response to a catastrophic terrorist event. For example, the HIPAA regulations provide that a "covered health care provider may, without prior consent, use or disclose protected health information . . . to carry out treatment, payment, or health care operations . . . [i]n emergency treatment situations, if the covered health care provider attempts to obtain such consent as soon as reasonably practicable after

the delivery of such treatment. . . ."[67] Officials, including military personnel and health care providers, should be aware of these exceptions because they may apply to a catastrophic terrorist event.

It was suggested during our interviews and exercises that, during a catastrophic terrorist event, officials, including military personnel, may want to restrict or regulate the information being released to the public through various media outlets in order to (1) prevent panic caused by such information or by rumors and (2) ensure dissemination of accurate public health information to promote compliance with government orders. But such interference with the news media could potentially conflict with First Amendment protection of free speech.

Barry Kellman, professor of law at DePaul University School of Law, summarized the requirements placed on governments in the event they need to restrict civil liberties because of a public health threat. According to Kellman, U.S. constitutional law and international human rights law recognize that public health authorities may need to restrict civil rights and civil liberties in emergency situations—situations that do not allow for due process of law prior to the application of the measure in question. But those laws impose five requirements on governments if they must take such measures:

- The measure to be applied must be prescribed by the law (i.e., public health officials have been authorized by law to take such action).
- The measure must be applied in a nondiscriminatory manner.
- The measure must relate to a compelling public health interest in the form of a significant risk to the public's health.
- The measure must be necessary to achieve protection of the public's health—i.e., the measure must be (1) based on scientific and public health information and principles, (2) proportional in its impact on individual rights to the public health threat posed, and (3) the least restrictive measure possible to achieve protection against a significant health risk.
- Individuals who have their civil rights affected [by public health measures] have the right to due process of law to challenge the measures before a court of law.[68]

U.S. federal and state courts have, generally speaking, upheld public health actions infringing on civil rights when such actions are administered fairly and are necessary to protect the public against a significant health risk. This is true even when the courts apply strict-scrutiny analysis to infringements of fundamental constitutional rights, such as the right to travel and the right to bodily integrity.

Distinguishing Between Homeland Defense and Civil Support

There is a significant question regarding domestic use of the military that will, over time, need much more attention and clarification: When is an action a purely military mission,

---

[67] 45 C.F.R. Section 164.506(a)(3)(1)(A).

[68] Kellman, B., *Managing Terrorism's Consequences: Legal Issues*, Oklahoma City, Okla.: National Memorial Institute for the Prevention of Terrorism, March 2002.

and when is it military support to civil authorities? Take the fourth hijacked airliner of September 11, 2001, for instance. If the Air Force had intercepted it before it reached its intended target, there is little doubt that direct action would have been taken, including perhaps shooting the aircraft down, with the likelihood of all aboard being killed. That situation was fairly straightforward. The military has the responsibility to protect the airways from foreign aggression.

But take a less clear-cut hypothetical example. Assume intelligence reveals that terrorists are plotting a ground attack against certain industrial facilities. The Federal Bureau of Investigation (FBI) has begun an investigation and is gathering statements from informants. The Department of Defense assists by providing civil support under one or more statutory authorities. Then, several of the terrorists are positively identified as foreign nationals. It is conceivable that a determination could be made that the terrorists are "enemy combatants" and the military could be ordered to take over the operation.

Nonlegal Constraints on the Use of the Military

In addition to the relatively straightforward legal and regulatory authorities for, and the restrictions on, the use of the military domestically, there are less clear-cut but nevertheless significant "nonlegal" barriers to effective civil support operations by the military.

Diffuse Nature of Authority

As we have shown, authority for the use of the military domestically is scattered among various statutes and regulations. Senior government leaders and military commanders often do not know what is and what is not authorized for providing military support or for conducting military operations. Our research shows that those entities seeking military support—i.e., states and localities—often have unclear, and sometimes erroneous, views of what the military can do.

Reluctance to Seek Federal Assistance

Our research suggests that states and localities are often reluctant, for political and other reasons, to seek federal assistance, other than financial support. For example, as we learned in our exercise-based study in California (see Chapter Six), states are protective of their prerogatives—public health is really a state and local, not federal, function. This is especially true of states that have a robust public health and medical infrastructure and comprehensive plans for disaster response. Additional discussion of this topic as it relates to the exercises conducted as part of this study can be found in Chapter Six.

Apprehension About Military Assistance

There is an historical aversion to the use of the U.S. military in the homeland, except in extraordinary circumstances. Americans have been loath to use the military as a "national police force," as many South American countries have done. Our research points to an ill-defined fear among state and local officials that the military is going to "come in and take charge." However, most jurisdictions have little reluctance to use the National Guard in a time of emergency, provided the Guard has not been "federalized." There is also the concern

that military capabilities may not be available when they are required, and that any deliberate planning for their use may, therefore, be fruitless.

Cultural Barriers

As our exercises, interviews, and case studies revealed, there are cultural differences between civilian and military entities that make advance planning and coordination difficult, particularly at the local level, and especially in communities that are not in proximity to military installations. The military has its own structure, culture, jargon, and operational capabilities that may seem foreign to civilians with no previous military experience or with no experience with the military in a mutual cooperation or support context. Likewise, military officials whose responsibilities do not include coordination with civilian agencies may not be well versed in the culture and operation of civilian health care and emergency response organizations.

Capabilities

In addition to uncertainty about the authorities governing the use of the military, there is a broad lack of understanding among civilian officials about specific capabilities of the military—even in the medical support context—and how those capabilities might be used to augment or fulfill civilian requirements. In addition, there are broader concerns about equipment interoperability, the appropriateness of military training for civil support, and potentially different professional techniques.

Requirements Identification

Many of the aforementioned challenges are further complicated by the absence of a robust process for states and localities to articulate, prior to an incident, the range of potential requirements for any type of federal support, including medical assistance. Requests from states and localities for federal assistance, including military support, historically have been reactive. Normally, such requests are made under the provisions of the Federal Response Plan after a natural disaster or other emergency has been declared. Provisions for generating potential requirements well in advance of actual incidents are part of the current efforts by DHS and other Executive Branch agencies to establish a National Response Plan and National Incident Management System pursuant to HSPD-5. The successful implementation of such plans could also improve DoD internal planning for civil support.

Conclusions

Ample authority exists for the use of the military domestically, including the provision of military medical support to states and localities in the event of a terrorist attack. Except for some minor clarifications to certain statutes and regulations, no new authority is necessary. Additionally, there are sufficient safeguards in place to prevent any abuse of discretion in the employment of military assets in providing support to civil entities.

Nevertheless, there is some cause for concern about potential liability on the part of DoD and individual service members as a result of negligence on the part of decisionmakers or military personnel in the conduct of civil support activities.

Nonlegal barriers also constrain effective military support; they include confusion within the military and in civilian jurisdictions about the authority, capabilities, and appropriate role of the military, and cultural barriers between the military and civilian entities.

Finally, the lack of a comprehensive process, pre-event, for identifying response requirements is a barrier to effective long-range military planning for civil support.

Recommendation

Given the apparent lack of knowledge both within the military and among civil entities about the authorities governing the use of the military domestically, and other barriers that could prevent the effective use of military assets when they are required, DoD officials should publish an official handbook that can be used by military and civil officials that clearly explains those authorities and their application.

CHAPTER FIVE

Military Medical Support to Civil Authorities: Historical Case Studies

Since Shay's Rebellion in 1787, the United States military has often been called on to provide support in domestic disaster response activities, especially when the magnitude of the disaster has overwhelmed local resources. In the event of a large-scale CBRNE attack on U.S. soil, the military would almost certainly be expected to provide medical and other support. But which military health care assets might be requested, and which should be deployed? Without a historical example of a major CBRNE attack in the United States to guide us, we sought to draw lessons from prior *natural* disasters.

In this chapter, we briefly describe DoD's recent role in medical response to domestic incidents. We then describe in more detail three instances in which DoD played a major role in the health care relief effort. We discuss lessons learned from these three disasters and propose a framework that may provide a basis for considering how to plan for military medical support to civil authorities.

DoD's Role in Medical Response

The Bush Administration's *National Strategy for Homeland Security*[1] reaffirms the Department of Defense's long-standing role in homeland security—the provision of military support to civil authorities. DoD defines *civil support* as mutual support activities it undertakes with any civil government agency for planning or responding to the "consequences of civil emergencies or attacks, including national security emergencies." *Civil emergencies* include "any natural or manmade disaster or emergency that causes or could cause substantial harm to the population or infrastructure."[2]

DoD frequently conducts military support operations, averaging 73 events annually between 1998 and 2000.[3] In its 2002 report to Congress and the president, the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction (also known as the Gilmore Commission) provided a summary description of the forces used in some military support operations:

---

[1] The White House, *National Strategy for Homeland Security*, Washington, D.C.: U.S. White House Office of Homeland Security, July 2002, available at http://www.whitehouse.gov/homeland/book/nat_strat_hls.pdf, accessed February 3, 2003.

[2] DoD Directive 3025.15, *Military Assistance to Civil Authorities*, Washington, D.C.: Department of Defense, Office of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict, February 18, 1997, Sections E2.1.3 and E2.1.9.

[3] Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *Fourth Annual Report to the President and the Congress,* Santa Monica, Calif.: RAND Corporation, December 15, 2002, p. 88.

> After the [1995] Oklahoma City bombing, the U.S. military deployed about 800 active and reserve personnel, while the Oklahoma National Guard provided 465. The military support provided included medical and rescue teams, structural experts, and air and ground transportation. After the September 11 [2001] attacks, DoD provided 657 active duty personnel to support response operations at the Pentagon and the World Trade Center. DoD support deployed to the Pentagon included a defense coordinating element, logistics support, and engineers. Most of the active duty military support at the World Trade Center came from the 387 personnel manning the hospital ship *Comfort,* but it also included a defense coordinating element, a medical mobilization center, logistics support (airlift), and subject matter experts on demolitions and remote sensing operations. The National Guard provided the lion's share of the military forces responding to the crisis in New York City. At their peak, a total of 5,070 New York and 1,006 New Jersey National Guardsmen were committed to the effort.[4]

Research Methods for Case Studies

In the following sections we discuss three natural disasters in which the military played a role in providing medical support: Hurricane Andrew, which struck south Florida in 1992; Hurricane Marilyn, which struck the Virgin Islands in 1995; and Tropical Storm Allison, which caused severe flooding in Houston and other parts of Texas and Louisiana in 2001. We selected these three examples due to the prominent role that military health care support played in the response efforts. We considered other recent events, including Hurricane Hugo (1989), the Los Angeles riots (1992), Hurricane Iniki (1992), the first bombing of the World Trade Center (1993), the Northridge earthquake in California (1994), the forest fires in the western United States (2000), and the terrorist attacks on the World Trade Center and the Pentagon (2001). We decided not to focus on these cases, however, because the military played a lesser health care support role.

Our analysis relied primarily on four data sources: (1) unclassified government and private-sector reports or studies, (2) peer-reviewed medical literature, (3) information provided by government and nongovernmental agencies and organizations, and (4) interviews with individuals who have experience and expertise related to the provision of health care during disasters.

We conducted a literature search using the MEDLINE database.[5] The search began with articles published in 1992, when Hurricane Andrew struck. The response to that hurricane was the first use of the Federal Response Plan, issued in April 1992. This search produced 46 citations. We checked the titles and (where available) the abstracts of each citation to determine their applicability for review. Based on this review, we retrieved a total of seven articles that were related to military medical support of disaster response:

---

[4] Advisory Panel to Assess Domestic Response Capabilities . . . , 2002, pp. 89–90.

[5] The literature search included English-language articles published between January 1, 1992, and July 31, 2002. Search keywords included "military," "health care," and "disaster."

- Two articles on planning for medical support for disasters[6]
- Two articles on DoD deployment following Hurricane Marilyn[7]
- One article describing medical preparedness for a terrorist incident involving chemical or biological agents during the 1996 Atlanta Olympic Games[8]
- One article describing illnesses and injuries reported at Disaster Application Centers following the 1994 Northridge earthquake[9]
- One article on dentistry's role in disaster preparedness.[10]

Hurricane Andrew Background

At approximately 5 a.m. on Monday, August 24, 1992, Hurricane Andrew hit Homestead, Florida, about 25 miles north of Miami, with sustained winds of 140 miles per hour and gusts of up to 175 miles per hour. Three hours later, Governor Lawton Chiles asked President George H. W. Bush for a disaster declaration. President Bush responded by declaring southern Florida a national disaster area, specifically designating Broward, Dade, Monroe, and Collier counties for assistance.

Weather forecasters had been tracking the hurricane since it began as a tropical disturbance off the coast of Africa one-and-a-half weeks earlier. Shortly before the hurricane arrived, Governor Chiles ordered a million residents in south Florida to evacuate. It was partly because of this evacuation (the largest in U.S. history) that the hurricane claimed only 24 lives. Yet, while the death rate was relatively low, the demand for health care support was significant, due to extensive damage to the physical infrastructure:

> [The hurricane] ripped up trees, destroyed public utilities, leveled thousands of structures, and left millions of cubic yards of debris. The hurricane's fierce winds tore down most of south Florida's power lines, leaving 1.4 million customers of Florida Power and Light's 3.3 million customers without power.[11]

Hundreds of private doctors' offices in Dade County, Florida, were shut down and at least three hospitals—Deering, Mercy, and the Homestead branch of South Miami Hospi-

---

[6] Haines, E. T., and B. Weidenbach, "Planning for Medical Support of Disasters," *Military Medicine*, Vol. 158, No. 10, 1993, pp. 680–683; Macintyre, A. G., et al., "Weapons of Mass Destruction Events with Contaminated Casualties: Effective Planning for Health Care Facilities," *Journal of the American Medical Association*, Vol. 283, 2000, pp. 242–249.

[7] Weddle, M., and H. Prado-Monje, "Utilization of Military Support in the Response to Hurricane Marilyn: Implications for Future Military-Civilian Cooperation," *Prehospital and Disaster Medicine*, Vol. 14, No. 2, 1999, pp. 81–86; Weddle, M., and H. Prado-Monje, "The Use of Deployable Military Hospitals After Hurricanes: Lessons from the Hurricane Marilyn Response," *Military Medicine,* Vol. 165, No. 5, 2000, pp. 411–417.

[8] Sharp, T. W., et al., "Medical Preparedness for a Terrorist Incident Involving Chemical or Biological Agents During the 1996 Atlanta Olympic Games," *Annals of Emergency Medicine*, Vol. 32, No. 2, 1998, pp. 214–223.

[9] Teeter, D. S., "Illnesses and Injuries Reported at Disaster Application Centers Following the 1994 Northridge Earthquake," *Military Medicine,* Vol. 161. No. 9, 1996, pp. 526–530.

[10] Morlang, W. M., "Dentistry's Vital Role in Disaster Preparedness," *Journal of the California Dental Association,* Vol. 24, No. 5, 1996, pp. 63–66.

[11] McDonnell, J., *Hurricane Andrew: Historical Report*, Fort Belvoir, Va.: U.S. Army Corps of Engineers, Office of History, January 1993.

tal—were evacuated,[12] creating a great need for medical infrastructure support. Most pharmacies were also destroyed or damaged, and many patients were unable to find their physician or refill prescriptions.[13]

Deering, a 260-bed private hospital in the South Miami-Dade area, was hit especially hard, suffering $10 million worth of damage. Although physical damage to the building—broken windows, a loss of electrical power, and destruction of emergency room and patient wing construction sites—could not have been avoided, the situation at Deering was made worse because patients were not evacuated prior to the event because the hospital was not perceived to be in the evacuation zone. To make matters worse, the hospital agreed to take an additional 50 patients from another hospital that was in the evacuation zone, so when Deering was unexpectedly hit hard by the hurricane, staffers scrambled at the last minute to move patients into hallways and used mattresses to seal windows and sheets to keep doors shut.[14] The disruption extended beyond the hospital, however, creating an environment in which physicians were unable to support their patients. "Most of our medical staff not only lost their housing, but lost their practices, their medical offices," Jamie E. Hopping, Deering chief executive officer, told the *New York Times*. "Most of our most sensitive equipment was damaged by water, including a CAT scan, radiological equipment, and laboratory, operating room, and monitoring equipment. They're all out."[15] All 153 of the hospital's patients were evacuated to other hospitals the night of the hurricane. The hospital did not reopen until January 1993.[16]

Mercy Hospital, a 512-bed private facility, was also severely damaged. Unlike Deering, however, Mercy hospital was in the evacuation zone and all 240 patients were successfully evacuated prior to the storm's arrival.[17] Although hospital staff returned to find Mercy with significant and costly wind, water, and infrastructure damage, the hospital also incurred a significant expense from having to evacuate and transport all 240 patients. "Hospital evacuation is a time-consuming, stressful and expensive undertaking," according to a Mercy hospital staff member, who was quoted on the Florida Bureau of Recovery Mitigation Web site.[18] With Hurricane Andrew, it was a process that "took nearly 24 hours to complete, at a cost of about $1 million per day in expenses and lost revenue," the staff member said. Mercy was able to reopen its emergency department on Wednesday, August 26, at noon, and then gradually added services until it was back in full operation by Friday, August 28.[19]

The Homestead branch of South Miami Hospital lost both electric power and running water when Andrew struck. Only one telephone—a pay phone in the lobby—was operational (cell phones stopped working when nearby cellular towers were knocked down). All

---

[12] Stolberg, S., "Battlefield Medicine Lifts Up a Weary South Florida; Storm: A Loose Group of Doctors, Nurses Is Trying to Cope with Sweeping Health Problems After Hurricane," *Los Angeles Times*, September 19, 1992, p. A1.

[13] Rohter, L., "Food and Shelter Crises Ease but Diseases Pose Dangers," *New York Times*, September 1, 1992, p. A13.

[14] "Hospitals Hit Hard by Hurricane Andrew," *Medical News Report,* October 1992, available at http://www.medicalnewsreport.com/med9210.htm, accessed April 15, 2003.

[15] Rohter, 1992.

[16] "Hospitals Hit Hard by Hurricane Andrew," 1992.

[17] "Hospitals Hit Hard by Hurricane Andrew," 1992.

[18] "Mitigation Success Stories," Bureau of Recovery and Mitigation, Florida Division of Emergency Management, 2003, available at http://www.dca.state.fl.us/brm/Mit_Success/ms_protecting_miami.htm, accessed April 4, 2003.

[19] "Hospitals Hit Hard by Hurricane Andrew," 1992.

70 patients were evacuated. The 120-bed private facility reopened one week later. However, upon reopening, staffing was a problem. Out of 500 employees, 30 picked up their paychecks and then resigned; 30 had not been heard from since the storm struck; and 300 were homeless or suffered severe damage to their own homes.[20]

Government and Military Response to Hurricane Andrew

When the hurricane struck, as reported in the *Annals of Emergency Medicine,* it quickly became obvious that "citizens would require medical care from outside because local hospitals, clinics, pharmacies, and physicians' offices were either destroyed or unable to function."[21]

Shortly after Hurricane Andrew touched land, DoD began flying Disaster Medical Assistance Teams (DMATs) into the disaster area to assist local doctors. The first two DMATs to arrive were NC-1 from Winston-Salem, North Carolina, and IN-1 from Fort Wayne, Indiana.[22] The military transported these two teams by C-5A aircraft to Opalaka Field near Homestead Hospital, arriving at 1:30 p.m. on August 25.[23] Additional DMATs later joined the effort (see Table 5.1).

According to Alson et al. (1993), the first two teams were "given the task of establishing free-standing emergency care centers to replace the [emergency departments] of the hospitals in the impact area that had been closed as a result of storm damage." This facility opened for operations at 6 p.m. on August 25, the day after the hurricane touched land, and just three-and-a-half hours after the DMATs landed in Dade County. Patient volume averaged 650 patients per day for the first three days; the majority of the injuries treated were received during clean-up activities.[24]

Many Floridians, however, felt that the federal response was too slow. On August 28, a Dade County official was quoted as follows in the *Miami Herald*:

> Where the hell is the cavalry on this one? We need food, we need water, we need people. If we do not get more food into the south end in a very short period of time, we are going to have more casualties.[25]

A FEMA spokesperson who was interviewed at the time said, "Something is wrong . . . [and] Nobody knows where it's breaking down." The military reported that they had tracked the

---

[20] Rohter, 1992.

[21] Alson, R. A., et al., "Analysis of Medical Treatment at a Field Hospital Following Hurricane Andrew," *Annals of Emergency Medicine,* Vol. 22, 1993, pp. 1721–1728.

[22] Alson et al., 1993.

[23] Alson et al., 1993; Center for Army Lessons Learned, *Operations Other than War, Volume II: Disaster Assistance,* Newsletter 93-6, Fort Leavenworth, Kan., October 1993, available at http://call.army.mil/products/newsltrs/93-6/chap2.htm, accessed August 25, 2003. The Web site indicates that it was last updated September 16, 1997.

[24] Only a small number of patients were treated during this time period for injuries caused directly by the hurricane (Alson et al., 1993).

[25] Slevin, P., and Filkins, D., "We Need Help: Bush Sends in 2,000 Troops Metro Blames Feds for Failure of Relief Efforts 'More Destruction than Any Disaster' Ever in America," *Miami Herald*, August 28, 1992, available at: http://www.miami.com/mld/miamiherald/news/special_packages/andrew/3848523.htm, accessed August 19, 2003.

Table 5.1
DMATs Providing Relief in the Aftermath of Hurricane Andrew

Team	Number of Personnel	Days on Site
Florida 1	46	9
Florida 2	30	6
Georgia 3	29	8
Hawaii 1	7	10
Indiana 2	34	7
Kentucky 1	36	9
Massachusetts 1	17	8
Massachusetts 2	37	8
Maryland 1	6	6
Maryland 2	3	10
North Carolina 1	43	8
New Mexico	69	12
Ohio 1	67	10
Oklahoma 1	12	6
U.S. Public Health	3	12

SOURCE: Alson et al., 1993

storm for two weeks and were prepared to deliver large amounts of relief supplies, but no one had requested them. President Bush was reported as saying that he needed a formal request from Governor Chiles before ordering a federal response. Chiles was reported as responding that the need for a formal request "seemed absurd" given the extent of the damage.[26]

One reason for the perceived delay in response was that DoD military aircraft and pilots were not immediately available due to commitments overseas. Some DMAT members, therefore, had to wait one or two days for military transport to the disaster site.[27]

About one week after the hurricane struck, the military was deployed to South Florida. Lou Stringer, a physician who was part of a special response team at the scene, believed the military's presence had a major positive effect on citizens' morale. "There were no street signs, no way to know where you were going except by looking at a map. Everything was a mess," he said. "The military coming in with uniforms and weaponry . . . showed the citizens in that community that things were back in control."[28]

Almost immediately, DoD medical personnel began to play a major role in the federal medical assistance effort. According to a U.S. Army after-action report,

> [They] accepted this role as an implied task based upon President Bush's August 27, 1992, announcement of increased DoD assistance. The Army Chief of Staff reinforced the medical role during his visit to Ft. Bragg, North Carolina, in the initial phases of the deployment. Direct tasking from FEMA included requests for support to the Disas-

---

[26] Kleinberg, E., "State Learns from Mistakes in Andrew," *Palm Beach Post*, June 1, 2001, available at: http://www.palmbeachpost.com/storm/content/weather/special/storm/getready/andrew.html, accessed August 25, 2003.

[27] U.S. Public Health Service, Office of Emergency Preparedness and the National Disaster Medical System, *Hurricane Andrew Health and Medical Response Demobilization Debriefing Conference*, January 1993, cited in: Weddle, M., "Health Sector Military-Civilian Cooperation in Disaster Response: A Case Study of the Response to Hurricane Marilyn in the U.S. Virgin Islands," unpublished report provided by the author, 1998.

[28] Stringer, L., M.D., commanding officer, Special Operations Response Team, telephone interview, March 27, 2003. The Special Operations Response Team is a private, nonprofit corporation that responds to disasters all over the United States. More information is available at http://www.sortteam.org.

> ter Medical Assistance Teams (DMATs), medical logistical support for civilians, specialty support care for large and small animals, and water sampling for wells. All other care and assistance was provided within the framework of Health and Human Services as the lead agency for Emergency Support Function (ESF) No. 8 (Health and Medical) and with a Public Health Service (USPHS) officer designated by the President as the director of the federal medical effort.[29]

During a period of five weeks, military medical personnel treated about 46,000 people in tents and in an Army hospital deployed to South Florida. Military personnel drove medical vehicles down city streets, gathering up people who needed help.[30] Military mental health teams assisted state mental health specialists.[31] A Navy medical group out of Camp LeJeune provided care to military personnel who removed debris.[32]

The military was also instrumental in monitoring and reducing threats that developed as a result of significant hurricane damage. One such threat was the potential increase in mosquito-transmitted diseases. According to the Centers for Disease Control, people residing in the disaster area or those who returned after the initial evacuation were exposed to high populations of mosquitoes as a result of the hurricane precipitation in combination with damage to doors and window screens and the lack of electricity to power air-conditioners.[33] According to the CDC report, "in addition to being a nuisance that hampered recovery efforts (e.g., repair and reconstruction crews were unable to work during early morning and late afternoon/early evening hours), this exposure increased the potential for mosquito-transmitted diseases among recovery workers and displaced residents, and secondary bacterial infections of mosquito bites among children were reported in both States" (i.e., in Florida and Louisiana, where the storm landed on August 26).[34]

To control the increased mosquito population, the U.S. Navy Disease Vector Ecology and Control Center placed carbon dioxide–baited vector[35] survey traps at eight locations and monitored the traps daily.[36] In addition, the 910th Airlift Wing, a U.S. Air Force Reserve unit, deployed a fleet of C-130H Hercules aircraft specially modified to deliver pesticides to spray more than 280,000 acres of South Florida. According to Ellery Gray—a senior emergency coordinator for the U.S. Department of Health and Human Services (DHHS) Public Health Service, who was appointed Florida's "public-health czar" in the wake of Hurricane Andrew's devastation—the military's assistance in mosquito surveillance and control following the hurricane was a "big, big" help.[37]

---

[29] Center for Army Lessons Learned, 1993.

[30] Stolberg, 1992.

[31] Center for Army Lessons Learned, 1993.

[32] Stringer, 2003.

[33] "Emergency Mosquito Control Associated with Hurricane Andrew—Florida and Louisiana," *MMWR—Morbidity and Mortality Weekly Report*, Centers for Disease Control and Prevention, Vol. 42, No. 13, 1993, pp. 240–242.

[34] "Emergency Mosquito Control . . . ," 1993.

[35] "Vectors" are animals (in this case, arthropods, specifically mosquitoes) that are capable of transmitting diseases to humans. Encephalitis was a particular concern in the aftermath of Hurricane Andrew.

[36] "Emergency Mosquito Control . . . ," 1993.

[37] Gray, Ellery, interview with authors, April 15, 2002. According to an Air Force magazine report, the 910th also treated 855,000 acres of South Carolina's seaboard after 1989's Hurricane Hugo, treated 500,000 acres of Minnesota to prevent a mosquito-borne equine encephalitis outbreak in 1983, and treated 718,000 acres of Idaho farmland in 1985 to control a

The Army Veterinary Corps played a significant role in relief efforts—both in emergency animal care and in addressing veterinary public health issues, such as communicable diseases. According to Lew Stringer, the DoD veterinarians were a crucial asset because, at the time, the DMATs did not include veterinarians.[38]

Although feedback on the military's performance in South Florida was generally positive, several concerns were raised:

- As noted above, many Floridians regretted that the federal government did not respond more quickly. Bush Administration officials blamed the delay on Governor Chiles, whom they say did not formally request assistance in a timely fashion. It should be kept in mind that, at the time, the Federal Response Plan was brand new. "We had been briefed on ESF 8, but that was the first time it had been used," Stringer recalls. "You don't expect something that hadn't even had a tabletop exercise to go into the most catastrophic disaster in years and perform perfectly."[39]
- Some civilian officials questioned the decision to deploy a military hospital to the disaster area. The hospital was deployed against the wishes of Ellery Gray, the Florida State official, who felt it was expensive, could not be set up in a timely manner, and was not needed because civilian hospitals had adequate capacity.[40]
- Neither the Army hospital nor military outpatient clinics stocked medications used by people with chronic conditions (for example, insulin for individuals with Type I diabetes), according to John Hoyle, an emergency coordinator for the Public Health Service.[41] Until local pharmaceutical and medical facilities became operational, some chronically ill patients went without needed medications.[42] Alson et al. (1993) observed that tetanus toxoid, antibiotics, insulin, cardiac medications, and antiseizure medications quickly ran out.
- Coordination among various groups involved in animal relief was limited.[43]

The last concern was validated by the U.S. Army, as stated in an after-action report:

> Requests from private organizations and Florida state authorities were delayed unnecessarily by the lack of knowledge of the proper methods to make request [sic] for military veterinary help. The local and state civilian authorities needed military veterinary assistance on very short notice. The requesting offices were unaware that all requests had to be directed through FEMA and eventually to the Florida State officials and HQ FORSCOM. Final approval took from three to five days.[44]

---

grasshopper plague. "Air Raid," *Airman,* Magazine of America's Air Force, February 1998, available at http://www.af.mil/news/airman/0298/spray2.htm, accessed May 1, 2002.

[38] Stringer, 2003.

[39] Stringer, 2003. Under the FRP in effect at that time, the medical section was known as Emergency Support Function (ESF) #8.

[40] Gray, 2002.

[41] Hoyle, J. D., Sr., U.S. Public Health Service Office of Emergency Preparedness, telephone interview, April 24, 2002.

[42] Center for Army Lessons Learned, 1993.

[43] Stamp, G. L., "Hurricane Andrew: The Importance of a Coordinated Response," *Journal of the American Veterinary Medical Association,* Vol. 203, No. 7, 1993, pp. 989–992.

[44] Center for Army Lessons Learned, 1993.

The Army concluded from the Hurricane Andrew experience that the exact line of authority and the sequence of events for civilian organizations to request military veterinary assistance needs to be clarified, defined, and published.[45]

Hurricane Marilyn Background

At approximately 11 p.m. on Friday, September 15, 1995, Hurricane Marilyn struck the U.S. Virgin Islands. Ninety-two percent of the homes on the island of St. Thomas were damaged or destroyed, and many other structures, including St. Thomas's only acute care hospital, were damaged.

The day before Hurricane Marilyn struck, the territorial governor of the U.S. Virgin Islands telephoned President Bill Clinton to request federal assistance and to declare the region a major disaster area. At 10 p.m. on September 15, an hour before the storm arrived, the Territorial National Guard was mobilized under the governor's command.[46] The next day, shortly before the hurricane landed, the DoD director of military support[47] received a mission tasking to arrange an airlift for a Field Assessment Team from Carswell Air Force Base, Texas, to the disaster site after passage of the storm. In response, the secretary of the Army released an executive order authorizing DoD support.[48]

Government and Military Response to Hurricane Marilyn

Boniface C. Abba, the St. Thomas Hospital medical staff director, was concerned that hurricane damage left operating rooms in a compromised state. He faxed a letter to the Department of Defense requesting a military field hospital.[49] According to Dr. Abba, patients could be evacuated to other islands if the hospital was forced to close, "but an hour's delay in emergency services could be the difference between life and death."[50] The territorial governor announced to the local newspaper that he also had requested a unit directly from the federal government, described as a "mobile hospital to handle emergency cases."[51]

Territorial Health Commissioner Nathalie McDowell also requested a military hospital.[52] She phoned in her request to Admiral (Dr.) Frank Young, director of the U.S. Public Health Service Office of Emergency Preparedness (and head of the Health and Medical

---

[45] Center for Army Lessons Learned, 1993.

[46] Weddle, 1998.

47 At the time of Hurricane Marilyn, DOMS served as the coordinating authority for military assistance to civil authorities. DOMS operated under the secretary of the Army, in his role as the secretary of defense's executive agent for civil support. This role has been assumed by the recently appointed assistant secretary of defense for homeland defense.

[48] Weddle, 1998.

[49] Weddle and Prado-Monje, 1999.

[50] Weddle, 1998.

[51] Weddle and Prado-Monje, 1999.

[52] Weddle and Prado-Monje, 1999.

Services Section of the federal response effort).[53] "[St. Thomas hospital] wasn't usable. We lost two operating rooms and the hospital generator was not supplying power to the [operating rooms]," Dr. McDowell said. "The radiology department lost all of its machines except one portable, and the portable machine blew out. The [emergency room] was not functioning. Pediatrics was blown out. . . . I felt that we needed to have a military hospital." Young acknowledged the request, but chose not to process it, because, as he understood it, a military hospital "was going through another channel."[54] According to Weddle and Prado-Monje (1999):

> On the first day following the storm, hours after the Territorial Governor made his request for a mobile hospital, FEMA processed a Statement of Work to "provide a military treatment facility to work jointly with the [US]PHS [U.S. Public Health Service] and DoD to assume function of the existing hospital that was rendered inoperable by Hurricane Marilyn. . . . The request (tasking) for the military field hospital went from FEMA to the DoD Director of Military Support [DOMS] at 03:00 h on the second day, Sunday, 17 September.

What happened next suggests that there was considerable confusion regarding the need for such a facility.

> The U.S. Army 28th CSH[55] was notified of a possible deployment on Monday, September 18 (response day 3). . . . This same day, the FCO [federal coordinating officer] gave his initial assessment, reporting that "the hospital was coming back up on St. Thomas and the [military] hospital would not be required. . . ." The next morning (day 4), the DCO reported that the "hospital on St. Thomas only had roof damage and is operational." The 28th CSH was notified of a partial stand-down, an indication that it might not be required. That afternoon, the DoD liaison to FEMA National reported to the Director of Military Support that "the hospital is on," and Colonel Virgil Deal, Commander of the CSH, recalls, "Things were on again later that day."[56]

Meanwhile, other federal health care resources were quickly being deployed to the island.[57] Medications requested before the storm by the St. Thomas health commissioner arrived on Sunday, September 17. The first DMAT, MA-1 team from Boston (including three physicians, 11 nurses, one pharmacist, eight EMTs, and eight paramedics) arrived on Monday, September 18, and began treating patients within hours. By Thursday, September 21, there were four DMATs operating on the island: Massachusetts (MA-1), which was providing general medical support; Ohio (OH-1), which was operating the emergency room at St. Thomas Hospital; Kentucky (KY-1), which was providing support at the airport; and Indiana (IN-2), which was providing support at the island's federal building and airport.[58]

---

[53] In February 2003, President Bush issued HSPD-5, which directs the development of a National Incident Management System and a National Response Plan that will replace the Federal Response Plan (see Chapter Two).

[54] Weddle and Prado-Monje, 1999.

[55] The 28th Combat Support Hospital is stationed at Fort Bragg, North Carolina, under the command of the 44th Medical Brigade. The hospital's 296-bed capacity includes 96 intensive care beds, 140 intermediate care beds, 20 neuropsychiatric beds, and 40 minimal care beds.

[56] Weddle and Prado-Monje, 2000.

[57] Weddle and Prado-Monje, 2000.

[58] Weddle, 1998.

The island's DVA healthcare facility restocked and operated the pharmacy at St. Thomas Hospital, which gave both the hospital and the nearby DMATs access to medicines. This pharmacy filled 1,000 prescriptions per day during the first week of relief efforts.[59] Later, a Department of Veterans Affairs (DVA) physician, a physician assistant, nurse, and emergency manager, together on a high-mobility multipurpose wheeled vehicle (HMMWV), drove door-to-door throughout rural St. Thomas to check on people who could not get out of their homes.[60]

The National Guard also played an important role in the medical relief efforts. The Health Department and Virgin Islands Territorial Emergency Management Agency utilized National Guard ambulance units that were kept at the island armory. Later during the response effort, National Guard emergency medical technicians (EMTs) replaced local Health Department EMTs, who needed personal time to deal with the damage to their own homes.[61]

During the early days of the relief effort, restoring power to St. Thomas Hospital was among the top priorities. Admiral Young requested generators, and with the agreement of the First U.S. Army and the Defense Coordinating Officer (DCO), a plan proceeded. Two 750-kilowatt generators intended for use at St. Thomas Hospital were airlifted to the island by military transport and arrived on Saturday, September 23 (about one week after the hurricane struck). The generators were installed the next day.[62]

By September 26, St. Thomas Hospital was back in service and was processing as many as 600 patients per day (the normal rate was about 80 patients per day). Also on September 26, the 28th CSH arrived by ship. It took two days to unload the hospital from the ship and another two days to erect it. On September 30, 15 days after the hurricane struck, the combat support hospital held an open house for St. Thomas Hospital staff. Several days later, the hospital was opened to the public.[63]

With St. Thomas Hospital now open, there no longer was a need for the Army CSH. Medical staffers would not be paid for their services if their patients were transferred to the CSH. Moreover, staffers believed they might be legally liable for patient care provided by federal officials—a concern that was borne out when St. Thomas Hospital was sued by the family of a patient who was transferred from the hospital to the federal system. The patient died in Puerto Rico, where, unknown to St. Thomas Hospital staff, the patient had been transferred by the federal team.[64] Many local health care providers elected not to transfer their patients to the CSH, and just one day after the CSH opened, the territorial governor asked the Army to shut it down. A complete timeline of the response to Hurricane Marilyn, leading up to the closing of the CHS, is presented in Table 5.2.

---

[59] Weddle, 1998.

[60] Weddle and Prado-Monje, 2000.

[61] Weddle, 1998.

[62] Weddle, 1998.

[63] Weddle 1998; Weddle and Prado-Monje, 2000.

[64] Weddle and Prado-Monje, 2000.

Table 5.2
Timeline of the Response to Hurricane Marilyn

Date	Developments
September 14, 1995	Emergency plan activated; federal aid requested, 10 p.m. U.S. Virgin Island National Guard mobilized by Territorial Governor Roy Schneider
September 15, 1995, 11 p.m.	Hurricane Marilyn landfall
September 16, 1995	Military hospital requested; request validated by FEMA
September 17, 1995	Tasking received by DOMS
September 18, 1995	First DMAT operational on St., Thomas; 28th CSH notified of possible deployment
September 19, 1995	28th CSH "stand-down," then re-notified of activation
September 21, 1995	Advance party surveys CSH site on St. Thomas
September 23, 1995	Generators arrive for St. Thomas Hospital; installed the following day
September 25, 1995	28th CSH personnel arrive on St. Thomas
September 26, 1995	28th CSH arrives on St. Thomas by ship
September 28, 1995	Unloading of CSH from ship completed
September 30, 1995	28th CSH erected; CSH open house for St. Thomas hospital staff
October 2, 1995	CSH operating room operational; three surgeries performed
October 3, 1995	Order given to disengage 28th CSH

SOURCE: Weddle, 1998.

Tropical Storm Allison Background

Tropical Storm Allison pounded Houston and its surrounding communities from June 7 to June 15, 2001, causing severe flooding, power outages, and other flood-related problems. Water damaged parts of the city's electric grid and burned out the electrical systems of several major medical centers.[65] Eight local hospitals declared internal disasters. At the height of the devastation, emergency rooms that typically treated 30 patients per day were handling up to 180 cases on some days.[66] Memorial Hermann Hospital closed for the first time in its 76-year history. Medical personnel successfully transferred some 540 patients, including 150 children, from the hospital to outlying hospitals. Some of them hand-carried critically ill patients in wheelchairs or gurneys down 12 flights of stairs lit by flashlights. Others kept patients on respirators alive by using hand-pumped respirators that they operated for hours nonstop until those patients could be transferred to another hospital. Texas Army National Guard aviators, activated by Governor Rick Perry, assisted with the evacuation, air-transporting numerous patients to other hospitals in a UH-60 "Black Hawk" helicopter that had been configured for troops but was hastily converted to carry civilian patients.[67]

---

[65] Waller, S. G., *Memorandum for HQ USAF SG: Medical After-Action Report for Visit of Senior Medical Leaders to 591st Expeditionary Medical Squadron (deployed), Houston, Texas, 20 Jun 01*, Washington, D.C.: Headquarters United States Air Force Surgeon General (HQ USAF/SGX2), August 3, 2001.

[66] Waller, 2001.

[67] Bradley, R. N., personal interview, August 12, 2002. Dr. Bradley held two civilian positions in Houston—assistant medical director for the Houston Fire Department and medical director of the emergency center at Memorial Herman Hospital. Bradley was also a major in the Texas Air National Guard at the time. Bradley recalled, "H-60's were configured for troops. On arrival they removed the seats. Patients were transported on the floor of the aircraft. The flight crews secured the backboards to [the] floor tie-downs with webbing."

Government and Military Response to Tropical Storm Allison

On June 9, at the request of the governor of Texas, George W. Bush declared 28 East Texas counties a disaster area, making them eligible for federal assistance. By this time, many of Houston's emergency vehicles were stranded in floodwaters, while private ambulances were busy assisting with hospital evacuations. As a result, hundreds of calls to the city's 911 call center were not being responded to in a timely manner; in some cases, the calls may have received no response.[68]

In an attempt to handle the queue of 911 calls, Richard Bradley, in his capacity as medical director of the emergency center at Memorial Herman Hospital, asked the Texas Army National Guard (ANG) for ambulance support. The Texas ANG responded to this request by sending 13 HMMWV field ambulances with drivers and medics, but *without* being fully stocked with medical supplies. The medical director assumed that the ambulances would be fully stocked, as he intended to use them to respond to 911 calls. The Texas ANG, however, assumed that Bradley wanted to use the all-terrain ambulances only for high-water evacuations, which would not require a broad set of medical supplies. As a result of the miscommunication, the Texas ANG ambulances were not used.[69]

Tropical Storm Allison reduced hospital capacity in Houston by 1,700 beds. Those emergency rooms that were still operational were overflowing with patients waiting 24 to 48 hours to be seen.[70] On June 9, FEMA issued a request to the USPHS for four DMATs to deploy to East Texas. USPHS requested DoD assistance in transporting the DMATs. The DOMS approved the request and directed the Air Force to provide airlift to the teams.[71] The Air Force responded with C-5 and C-17 missions to deliver the DMAT support. However, the teams did not provide sufficient additional health care capacity; therefore, emergency departments in the Texas Medical Center area continued to operate at three to six times their normal capacity.[72]

On June 10, DOMS (with authority of the defense secretary) directed JFCOM to support FEMA in providing federal disaster relief to Texas. The order from DOMS also directed the establishment of a Defense Coordinating Element and the deployment of a DCO to East Texas to support FEMA operations. The JFCOM commander tasked Air Combat Command to be prepared to provide at FEMA's request units, personnel, equipment, and support as required. JFCOM's execute order also stated explicitly that the "DCO will validate/coordinate all requests from FEMA and that all mission assignments will be supported by a request for assistance."[73]

Facing a continuing shortfall in healthcare capacity, the City of Houston asked the Texas Disaster District to request a 25-bed EMEDS unit from the Air Force. This request

---

[68] Bradley, 2002.

[69] Bradley, 2002.

[70] Not all of these patients were true emergencies, and, on average, the criticality of the patients was no lower or no higher than usual. Bradley, personal communication, March 20, 2003; Ascher, D. P., telephone interview, March 25, 2003. Col. (Dr.) Ascher, a pediatrician, deployed to Houston with the U.S. Air Force 59th Medical Wing.

[71] As mentioned in Chapter Three, the responsibilities of the Secretary of the Army as Executive Agent and DOMS as the Action Agent have been split between the new ASD(HD) and the Joint Staff.

[72] Waller, 2001.

[73] Waller, 2001.

for a specific capability was apparently based on guidance provided by Richard Bradley.[74] The Texas Disaster District relayed the request to the Texas Division of Emergency Management, where it was identified as an ESF #8 task requiring FEMA coordination.

On June 12, FEMA sent to USPHS a request for "a 25-bed hospital facility, with basic lab and X-ray capability, and . . . additional personnel to staff it."[75] USPHS was unable to fulfill this request using its own resources, and it forwarded the request to DOMS. In the meantime, an advance team from the 59th Medical Wing from Lackland Air Force Base, Texas, traveled to Houston to prepare for the arrival of the EMEDS. The advance team coordinated its activities with planners on the Air Force surgeon general's staff (Bolling Air Force Base, Washington, D.C.) and at the Department of Defense.[76]

On June 13, DOMS rejected the USPHS request for the 25-bed hospital and associated medical capabilities. An Air Force after-action report suggests that DOMS rejected the request because it was not validated by the DCO. The matter was resolved the same day, however, after a teleconference including officials at DOMS, JFCOM, U.S. Army Forces Command (FORSCOM), and the Fifth U.S. Army. Officials at the Fifth Army worked with the DCO in Texas to validate the requirement for the EMEDS.[77] Thereafter, DOMS issued the following tasking:

> Chief of Staff of the Air Force [will] provide 25-bed modular hospital equipment and personnel packages capable of emergency surgery and medical services, critical care stabilization, primary care, public health, lab, and radiology support services to augment the Public Health Service (PHS) Ambulatory Care Center at the Astrodome.[78]

On June 14, the 59th Medical Wing deployed its full EMEDS package to Houston and set up in a convention center attached to the Astrodome.[79] Two EMEDS staffers—David Ascher, a pediatrician (as noted above), and a nurse practitioner—began seeing patients at approximately 2 p.m. that day. By 9 p.m., the EMEDS unit had emergency room capabilities. About 50 percent of the patients seen that day were walk-in pediatric cases, most of whom did not require emergency care.[80]

The EMEDS reached full operating capacity in less than 12 hours after it arrived and less than 24 hours after it was ordered to deploy. Additional staff were added to enhance the unit in subsequent days. At a total cost of $286,000 for the relief mission, the complete personnel package included the personnel listed in Table 5.3.

---

[74] According to Col. (Dr.) Randall M. Falk, chief of medical services for the Texas Air National Guard, hospital officials got the idea for the EMEDS package from Bradley. "The city truly benefited during the disaster by having a guardsman and citizen-soldier in their midst," Falk said. "Without Dr. Bradley, this capability would have remained unknown to the city of Houston." Quoted in Elliot, L., *AF Hospital Leaves Houstonians Grateful, Points to Guard Medical Future*, Houston: Texas National Guard Public Affairs Office, July 5, 2001, available at http://www.ngb.army.mil/news/2001/07/05/afhospital.shtml, accessed August 20, 2003.

[75] Waller, 2001.

[76] Waller, 2001.

[77] Waller, 2001.

[78] Waller, 2001.

[79] The EMEDS unit has the capability to set up tents but did not do so in this case because the convention center provided shelter.

[80] Ascher, 2003.

By 9 a.m. on June 15, new personnel were added to the EMEDS staff that enabled it to accept patients arriving via ambulance calls. At this point, the case mix of the patients changed dramatically. Virtually all of the patients were transported to the unit via ambulance. Many patients had been in car wrecks; some were diabetics who had lost control of their blood sugar levels because they had been unable to obtain insulin in the wake of the storm.[81] The unit treated more than 100 patients a day, according to Maj. (Dr.) Andy C. Chiou, a staff surgeon with the 59th Medical Wing. Services provided included surgical operations (nine orthopedic and seven general surgeries), laboratory tests, psychiatric care, and X-rays.[82] The EMEDS provided care to a total of 1,036 patients.[83]

Table 5.3
Number and Types of U.S. Air Force EMEDS (59th Medical Wing) Personnel Deployed in Response to Tropical Storm Allison

Specialty	Number
Officers	
Anesthesiologist	1
Bioenvironmental engineer	1
Dentist	1
Healthcare administrator	3
Laboratory officer	1
Nurse	14
Pharmacist	1
Physician, emergency room	2
Physician, family practice	2
Physician, flight medicine	2
Physician, internist	1
Physician, pediatrician	2
Psychiatrist	1
Psychologist	1
Public health	1
Surgeon, general	2
Surgeon, orthopedic	2
Surgeon, plastic	1
Surgeon, veterinary	1
Total Officers	40
Enlisted Technicians	
Administration	6
Bioenvironmental	2
Biomedical equipment	2
Cardiopulmonary	1
Dental	2
Diet	1
Flight medicine	4
Laboratory	3
Logistics	3
Medical	19
Mental health	1
Pharmacy	1
Public health	2
Radiology	4
Surgical	3
Total Enlisted	54
Total	94

[81] Ascher, 2003.

[82] Waller, 2001; Bradley, 2003; Ascher, 2003.

[83] Waller, 2001.

Although the number of patients treated was small relative to the population of Houston, all of the experts we spoke with agreed that the EMEDS unit made a significant contribution to reducing bottlenecks at emergency rooms in the affected area.[84] At the request of city officials, the 59th Medical Wing also provided bioenvironmental and public health specialists to help with hospital operations and local water and air-quality testing. The Air Force's after-action report did note that the relief mission was complicated by a few shortfalls: pharmacy and general supplies that were not appropriate to the civilian environment and some confusion in the DoD tasking process. However, the report gave high marks to the EMEDS operation overall. During the disaster, the *Houston Chronicle* had the following to say about the EMEDS' first-ever civil support mission:

> In the aftermath of *Allison*, humanitarian aid poured into the Houston area, but one of the most valuable efforts was the Air Force mobile combat hospital sent to Houston last week after several Texas Medical Center hospitals closed their emergency rooms because of flood damage.[85]

What Lessons Can Be Learned from These Case Studies?

Our goal in researching these case studies of natural disasters was to discover lessons or insights that may be useful in the event that DoD is requested to provide medical support to civil authorities following a CBRNE attack. Certainly, there are important differences between natural disasters and CBRNE attacks. Most significant, perhaps, is the fact that each of the natural disasters detailed above was predicted days in advance. Such advance warning is not likely with a CBRNE attack. As we discuss in this section, it is notable that, even with advance warning, the coordination between military and civil authorities showed room for improvement. In short, if likely shortfalls in the civilian community cannot be identified and translated into requirements for which DoD can plan its assistance when an advance warning is given, then the processes that are paramount to planning a coordinated and effective response likely need to be improved for unannounced CBRNE threats. Other significant differences between natural disasters and attacks also exist. For example, the public's perception of the level of danger with a natural disaster is likely to differ from that with a CBRNE attack, which also presents differing mental health and communication challenges. Further, different activities, such as quarantine, mass immunization, or decontamination, may be required in an attack scenario. With these important differences in mind, the following discussion offers lessons from the case studies to inform future medical military support to civil authorities.

The case studies suggest that DoD can anticipate requests for support to civil authorities, especially support for general-purpose tasks. Transportation of civilian DMATs, for instance, may not be considered a purely "medical" activity but is a frequent requirement in disasters and is critical to ensuring that civilian medical operations can be executed. In addition, DoD can expect to provide critical facilities and equipment when the civilian infra-

---

[84] Tucker, E., director, DVA Medical Center, personal interview, April 16, 2002; Ascher, 2003; Bradley, 2003.

[85] Lezon, D., "Air Force Mobile Combat Hospital Relieves Flooded Facilities," *Houston Chronicle*, June 21, 2001, p. A25.

structure is damaged, as well as personnel to replace civilian medical staff who are exhausted or otherwise unable to work following a disaster that affects their community. Historical cases also reveal demand for military public health medical capabilities, such as veterinary and mosquito-control services.

The three case studies led to three general conclusions:

DoD medical personnel can expect to be requested to support civil authorities in responding to crises, potentially including CBRNE incidents. A hurricane is different from a terrorist attack, but in either case the local medical infrastructure may be seriously damaged, and there will be sick and injured people who will be seeking help from a nonexistent or seriously degraded civilian medical system. While medical assistance is often thought of as the direct treatment of patients, specific DoD capabilities have been invaluable in responding to natural disasters, especially in public health: DoD veterinarians and mosquito-control operations provided valuable assistance after Hurricane Andrew, for example. If history is any guide, DoD should anticipate civilian requests for a range of assistance, from general-purpose support to specialized services that must be carried out by low-density/high-demand[86] military assets.

In short, DoD assets that are of value to civil authorities have fallen into two general categories: *more support* and *different kinds of support.* In the former case, DoD can provide assets—especially personnel—to augment the existing civilian medical system. In the latter case, DoD can provide assets that are scarce or nonexistent in the civilian sector but which, due to the MHS warfighting mission, reside in greater abundance in DoD than in civilian health care, e.g., deployable public and environmental health support, including vector control. Should the civilian infrastructure be significantly degraded, then a combination of the two types of assets—supplementary and different—may be deployed. For instance, a deployable hospital provides *different* support in that there is no civilian analog to the equipment or deployment capability, but its personnel essentially provide *more* support, in that they augment civilian medical personnel.

One of DoD's major contributions to medical response efforts is the transportation of civilian medical assets. In the immediate aftermath of an attack (i.e., within the first 24 hours or so), DoD's most important contribution to medical relief efforts will likely be the transportation of DMATs to the incident area(s). However, it is apparent that DoD's ability to perform this vital support function will be significantly affected by the department's commitment to provide airlift for other missions that may occur simultaneously. In fact, the global environment during or following a CBRNE attack, versus a natural disaster, is more likely to require DoD commitments other than commitments to the civil support mission, because an attack may call for a heightened security posture or may be in response to military operations outside of the United States. This likelihood may suggest that the mode of transporting civilian assets be revisited to determine if some assets should be planned for ground transport, which may in fact be quicker than airlifting if military aircraft or pilots are unavailable.

A pattern of rapid deployment of DoD medical assets to assist civil authorities did not emerge. In each of the natural disasters we examined, military support was limited to providing airlift to DMATs for at least five to six days after each storm touched down. In two of the three cases, civil authorities did not follow established procedures for requesting

[86] Low-density assets are those that are relatively few in number as compared with other assets.

military support, and this failure to follow the rules delayed the military's response. In the third case, with Hurricane Marilyn, the military's response was delayed when the military assets that were requested were determined not to be needed due to confusion and miscommunication about specific requirements.

Processes to identify requirements based on civilian shortfalls were lacking or ineffective. The case studies suggested that the processes for determining requirements based on known or predicted civilian shortfalls, and the processes used to articulate these requirements and identify appropriate federal assets to meet them, are ineffective. As a result, requests for federal (including military) assistance were either unclear to the federal authorities or delayed, or both. Of the three case studies, the coordination between civil and military authorities was perhaps best accomplished during Tropical Storm Allison in Houston. In that case, a civil authority and a military authority were the same—Richard Bradley, civilian emergency medical manager and officer in the Texas Air National Guard. It may be argued that, in that case, informal relationships saved the day, instead of formalized processes for identifying and articulating requirements and identifying the appropriate resources to meet them. As discussed in the following chapter, because of the lack of a national system to identify and satisfy response requirements, there exists an incomplete understanding of what is available at the federal level and what is likely to be needed locally.

A Conceptual Framework for Response

The conclusions presented above point to a larger conceptual problem: Of all the assets that are available for response nationally, which should be maintained centrally (e.g., federally) and which should be maintained (or improved) locally (i.e., decentralized)? Further, are there compelling reasons to employ military assets rather than civilian assets? The establishment of a national response plan, as directed by the president,[87] and of a supporting national system to identify likely requirements and appropriate responses (see Chapter Seven) requires that these questions be considered carefully. The case studies we reviewed point to general principles that can help response planners to answer these questions.

Decentralized Versus Centralized Response

The following criteria can inform decisions about whether a particular asset should be provided on a centralized or decentralized basis:

- **The speed with which the asset needs to be deployed.** Some medical assets are most effective if they are deployed as quickly as possible after a victim is exposed. For example, the antidote to cyanide poisoning is not effective unless it is administered within minutes of the victim's exposure. Similarly, antibiotic treatment for anthrax is most effective if it is administered as soon as possible after the patient is exposed. However, other treatments, such as smallpox vaccine, may allow for somewhat longer lag times before administration. Assets that need to be administered quickly would be

[87] The White House, *Homeland Security Presidential Directive/HSPD-5: Management of Domestic Incidents*, Washington, D.C.: The White House, 28 February 2003, available at http://www.whitehouse.gov/news/releases/2003/02/20030228-9.html, accessed March 15, 2003.

of little value if they are maintained by centralized responders who are not located near the attack site—especially if rapid deployment relies on non-dedicated transportation assets and, therefore, cannot be guaranteed. This leads us to the following conclusion: *All other things equal, if an asset is needed within roughly 12 to 24 hours of an event, the asset should be maintained and provided by local or regional, but not centralized, responders.*[88]

- **The cost of the asset.** For any given small- or medium-sized locality, the cost of buying expensive equipment such as large, medically equipped aircraft or sophisticated biological and chemical weapons detection equipment is likely to exceed the benefits. *The lower the cost of the medical asset, the stronger the rationale for providing the asset on a decentralized basis, all other things equal.*
- **The mobility of the asset.** Some medical assets are more difficult to move to the site of an emergency than others. Two of the case studies described above—Hurricane Andrew and Hurricane Marilyn—demonstrate that mobile military hospitals may be deployed too late to add much value. The reason for the delayed deployment—be it a delayed request due to miscommunication, or an inadequate assessment of requirements, or the duration of the deployment sequence—is immaterial (although all of these reasons point to a need for improvement). However, if an incident results in a reduction of civilian infrastructure (i.e., as occurred with hospital capacity in Houston after Tropical Storm Allison), and this degradation is expected to continue for some time, then mobility is less of an issue because the asset will be needed for longer than the immediate response time, although rapid response is of course most desirable. *The less mobile the resource, the greater the rationale for providing the asset on a decentralized basis, all other things equal.*
- **The probability that the asset will be used at the local level in noncrisis situations.** Although the risk of a disaster in the United States in any given year is high simply due to the extent of U.S. geography, the risk to any one particular location is low. Therefore, if a particular medical asset is not used to treat patients outside of a disaster or emergency setting, then the probability that a specific local government or facility will use a particular asset (e.g., smallpox vaccine) is low. Conversely, if the item (such as an antibiotic) is used for disaster and non-disaster applications (e.g., to treat anthrax poisoning as well as other kinds of bacterial infection), then localities will stock it. *The greater the probability that an asset will be used for non-emergency purposes, the greater the rationale for providing the asset at a decentralized level.*

Obviously, these principles are not mutually exclusive, nor is any one of them a panacea for ineffective response planning. Rather, they should be considered in toto. Nor do we

---

[88] This does not necessarily mean that the asset should be provided by local rather than federal officials. The federal government's CDC, for example, stocks smallpox vaccine at warehouses throughout the country. The location of the responders is what is crucial, not which level of government employs them. It is also worth noting here a more general finding on response times for *federal* consequence management assets. According to a 2002 study conducted by the Institute of Medicine for the Department of Health and Human Services, "The federal government is prepared to provide a substantial amount and diverse forms of assistance to communities stricken by a disaster. With a few exceptions, however, none of this assistance will be available to the affected community until at least 12 to 24 hours after it is requested (and the request itself may not come for hours or even days after the initiating event, be it an earthquake, a flood, or the release of a [chemical, biological, or radiological] agent)." This finding is reported in Manning, F. J., and L. Goldfrank, eds., *Preparing for Terrorism: Tools for Evaluating the Metropolitan Medical Response System*, Washington, D.C.: National Academy Press, 2002, p. 7.

intend that these principles are all that are needed to develop a comprehensive national response plan. They do, however, suggest that a requirements-based approach is necessary. If the likely requirements for responding to even general categories of attacks could be articulated, then the allocation of assets necessary to meet those requirements could be weighed against these principles.

Civilian Versus Military Response

Increased investments in homeland security by state and local governments and the reorganization of the federal government's structure for homeland security (including the establishment of DHS) following the terrorist attacks of 2001 suggest that national civil capabilities for medical consequence management will be enhanced over time. If this is indeed the trend, then it may be possible to narrow the scope of anticipated military medical support to civil authorities in the event of a future CBRNE attack. Nevertheless, historical experience does suggest that DoD should anticipate being called upon for certain support activities—in particular general-purpose support—to *enable* civilian medical response operations.

In this regard, the historical demand for military support for evacuation and patient transportation is relevant. In addition, capacity shortfalls have been evident when civilian infrastructure has been damaged in natural disasters. DoD has provided equipment and temporary/transportable infrastructure to compensate for civilian capacity losses on a number of occasions. Medical manpower shortages have also been apparent during natural disasters, and once again, DoD healthcare personnel have helped alleviate critical civilian shortfalls. A 2003 investigation by the U.S. General Accounting Office suggests that these infrastructure and personnel shortfalls will continue to exist in the United States and may be difficult to rectify in the near term.[89] Therefore, DoD will likely play a role in providing medical assistance in the future as it has in the past.

Future CBRNE environments may increase the demand for DoD forces to assist with civil medical operations. Trained military personnel could provide direct medical care as well as support services when civilian health care personnel are deterred from working in certain situations—e.g., in a contaminated environment. Civil authorities may have additional incentive to request military support if military health care personnel have been vaccinated against a detected agent or identified threat. In the disorder that could follow a terrorist attack, or in circumstances in which attacks are expected, military forces may provide access and traffic control for medical facilities and medical personnel as well as related general services.

In addition to facilitating the delivery of civilian medical care, DoD has directly provided highly specialized public health capabilities following past natural disasters; because of these specialized capabilities, public health is an arena in which one might look for ways to delineate the allocation of certain civilian and military assets. The country may indeed look to DoD in the future for reliable medical assistance, if only intermittently, especially with large-scale events—natural or man made. As discussed elsewhere in this report, DoD has yet to codify a policy of routinely making medical assets available, equipped, and manned with trained personnel for such missions, and Congress has not appropriated or authorized any funds for these potential missions. However, because DoD medical assets may be available

[89] GAO, *Bioterrorism: Preparedness Varied Across State and Local Jurisdictions*, Washington, D.C.: U.S. General Accounting Office, GAO-03-373, 2003c, pp. 17–22.

for civil support (i.e., not used for their primary missions), the following guidelines can help in determining which assets are most appropriate to apportion in planning for civil support:[90]

- **Dual use.** The assets should be applicable to civil support operations at home as well as medical operations in warfighting theaters.
- **Low probability of use.** The assets should be considered by the civilian emergency preparedness community to be those that will be used infrequently (and thus are not a priority for acquisition) but considered by military planners to be essential assets for warfighting.
- **Not required for immediate use.** Military forces are stationed throughout the U.S. territory, but only a fraction of the total forces (active and reserve components) could provide medical assistance following a disaster or attack. The specialized capabilities of these forces most likely will not be delivered to an incident scene sooner than 24 hours after a request has been made. Military health care providers might, therefore, focus their resources on preventing or minimizing health effects that are likely to occur in the days after a CBRNE attack.

For any military assets that meet these guidelines, response planners must also consider the likelihood that such assets may be engaged in other missions as well as other limitations discussed in Chapter Two (e.g., level of fill, training and readiness status).

---

[90] These guidelines are based on the observation that no military unit (except for WMD-CSTs and JTF-CS—the planning headquarters) currently has civil support as a primary mission. In that vein, these guidelines suggest which types of military assets would be used most effectively for civil support.

CHAPTER SIX

Exercise-Based Studies of Potential Military Medical Support to Civil Authorities

In support of our overall research objectives, we designed and conducted two exercise-based studies of potential military medical support to civil authorities in the event of a large-scale terrorist attack. Although these two exercises focused on very specific types of attack, a smallpox attack in Georgia and a multifaceted radioactive "dirty bomb" attack in California, both provided insights on the likely consequences of large-scale attacks, in those two states and elsewhere in the country, using other types of weapons.

Objective

The overall objective in both cases was to design and conduct an exercise that would bring together key local, state, and federal government emergency response officials, policy advisors, and practitioners in an environment in which they could accomplish the following:

- Assess the feasibility and capability of U.S. DoD medical resources for supporting response to civil emergency contingencies emerging from large-scale terrorist attacks on civilian targets
- Address the need for specific operational guidelines and processes that could be used by military and civilian response entities in planning for, and responding to, such contingencies
- Identify potential actions at the federal and state levels that could, if taken in advance of such contingencies, result in more effective coordination among the federal government (DoD in particular), state and local governments, and other entities involved in emergency response planning and operations
- Identify and address other local, state, or regional issues growing out of such terrorism-based civil contingencies.

As described in more detail in this chapter, the final component in both exercises—which involved senior officials, policy advisors, and practitioners—was preceded by a lengthy design process and a series of test exercises to refine the exercise materials. These steps were taken to (1) heighten the realism of each exercise, (2) refine the issues presented in the future-scenario portion of the exercise (a major component of the exercise methodology), and (3) develop a realistic set of proposed issues to be resolved in possible state and federal *near-term* action plans derived from the exercise objectives.

Exercise Methods

This section describes how the exercises were designed and conducted. An extensive and collaborative design and testing process offered some perspective on the challenges surrounding national terrorism preparedness and the difficulty in anticipating the kinds of shortfalls that may occur at the state and local level that could be remedied by the federal government. Much of what was included in the final component of each exercise—both the scenario specifics and the notional decisionmaking issues—was a product of interviews with key state and local officials, deliberations within the design teams, and early tests of each exercise (particularly the post-test "hot wash" sessions—immediate after-action reviews in which test participants were invited to critique all aspects of the exercise).

Exercises Were Based on an Established Methodology

The exercises were based on an established and tested RAND exercise methodology known as "The Day After . . . ," which has been applied to a variety of strategic planning issues and to policy issues regarding high technology and areas of scientific research. Noteworthy application of the method includes path-breaking work in framing the strategic threat posed to U.S. security by regional adversaries with small nuclear arsenals,[1] the potential future role and impact of strategic information warfare,[2] and the impact of the information technology revolution on money laundering.[3]

As depicted in Figure 6.1, "The Day After . . ." methodology is divided into two parts, the Future and the Present. Days in advance of the exercise, participants are given a packet that includes Future History and Step One (see Figure 6.1) materials, background information on state and federal emergency response services, technical information (e.g., on exemplary bioterrorism agents and "dirty bombs"), information on the relevant command systems in use in the state, and information on selected legal issues. (Sample materials used in the Georgia exercise can be found in Appendix D.)

The methodology's process begins with the presentation of a "Future History" that places participants at a point sometime in the future. Through a sequence of exercise steps, participants grapple with various decisionmaking issues in order to resolve problems presented by a hypothetical situation. In this case, the situation involves a terrorist attack in the near future.

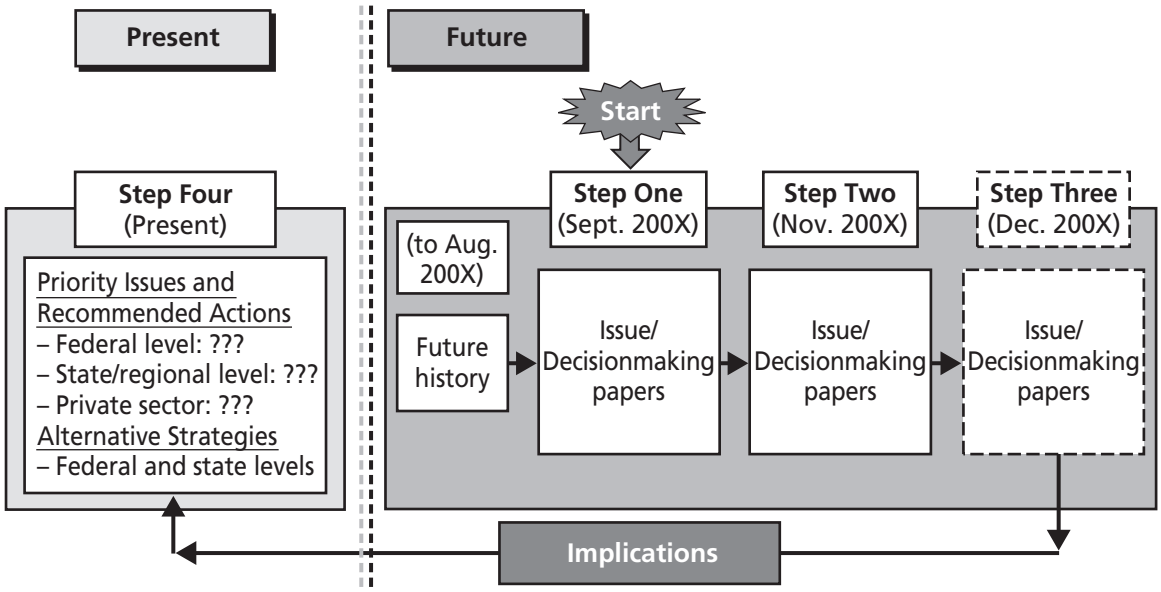
---

[1] Millot, M. D., R. C. Molander, and P. Wilson, *The Day After . . . Study: Nuclear Proliferation in the Post-Cold War World, Volume I, Summary Report*, Santa Monica, Calif.: RAND Corporation, MR-266-AF, 1993a; Millot, M. D., R. C. Molander, and P. Wilson, *The Day After . . . Study: Nuclear Proliferation in the Post-Cold War World, Volume II, Main Report*, Santa Monica, Calif.: RAND Corporation, MR-253-AF, 1993b; Millot, M. D., R. C. Molander, and P. Wilson, *The Day After . . . Study: Nuclear Proliferation in the Post-Cold War World, Volume III, Exercise Materials*, Santa Monica, Calif.: RAND Corporation, MR-267-AF, 1993c.

[2]Molander, R. C., A. S. Riddile, and P. Wilson, *Strategic Information Warfare: A New Face of War*, Santa Monica, Calif.: RAND Corporation, MR-661-OSD, 1996; Molander, R. C., P. Wilson, D. Mussington, and R. Mesic, *Strategic Information Warfare Rising*, Santa Monica, Calif.: RAND Corporation, MR-964-OSD, 1998.

[3]Molander, R.C., D. Mussington, and P. Wilson, *Cyberpayments and Money Laundering: Problems and Promise*, Santa Monica, Calif.: RAND Corporation, MR-965-CTI, 1998; Mussington, D., P. Wilson, and R. C. Molander, *Exploring Money Laundering Vulnerabilities Through Emerging Cyberspace Technologies*, Santa Monica, Calif.: RAND Corporation, MR-1005-OSTP/FinCEN, 1999.

Figure 6.1
"The Day After . . . " Exercise Methodology



RAND *MG217-6.1*

The methodology can accommodate either two or three exercise steps set in the future depending on the nature and development of the postulated attack. (The Georgia exercise required three future steps; the California exercise required two.) The future steps (described further below) are followed by a final step (Step Four in Figure 6.1) in which participants return to the present and address the implications of their experience with the future scenario. In this final step, particular emphasis is placed on the possible components of a prospective near-term action plan at both the state and federal level. The exercises culminate in a guided plenary session to highlight any issues that were uncovered during the exercise and to propose near-term actions to address them.

A fundamental element of the exercise methodology is that two or three (or more) groups go through the same steps in the exercise at the same time and report and compare their results along the way, usually at the end of each step. For example, for each of the steps in a four-step exercise, the groups are tasked with the same activities.

Steps One, Two, and Three. In each of these steps, the individual groups—which include executive representation from emergency-management, medical services, health, and law enforcement agencies, plus their federal counterparts—convene to address the emergence and development of the terrorism problem at hand. During each meeting, which lasts about one to one-and-a-half hours, the group

- finalizes a draft of a policy-level document that is to be the basis for decisionmaking by the governor and federal officials to address the situation at hand
- makes recommendations regarding the issues presented in the draft document, where consensus on a course of action can be achieved
- develops a recommended overall strategy.

In the two or three steps set in the future, the individual groups' recommended actions are made part of the exercise results, and no attempt is made to shape the events in succeeding steps in the light of those recommendations. Rather, over the design and testing period, which involves several exercises prior to the final exercise involving high-level officials, the design team is able to gain a good appreciation of the kinds of decisions that would likely be made at the local, state, and federal levels in such circumstances and can design successive steps with this decisionmaking in mind. On this basis, actions that decisionmakers are likely to make in response to the situation seem plausible to the participants.

Step Four. Lessons Learned/Implications. Returning to the present-day setting, participants reflect on their experiences with the crisis scenario, identify and prioritize issues that warrant current action and/or further examination in appropriate jurisdictions, and seek consensus on a course of action at both the state and federal levels to address the highest-priority issues.

The Analytic Framework for the Exercise

When considering the possibility of a large-scale terrorist attack, the timeline along which an attack could develop should also be contemplated—i.e., a framework for analyzing potential issues related to various stages of an attack is essential. For example, such a framework needs to present issues that could arise during the following stages:

- Peacetime: The typical day-to-day environment
- Pre-crisis: When credible information is obtained that indicates a terrorist attack is a distinct possibility in the near future
- Crisis: When the situation escalates to create a much more threatening environment; the possibility of a terrorist attack is acute, but as yet no terrorism event has occurred
- Post-event: The emergency response and recovery period in the wake of an actual attack.

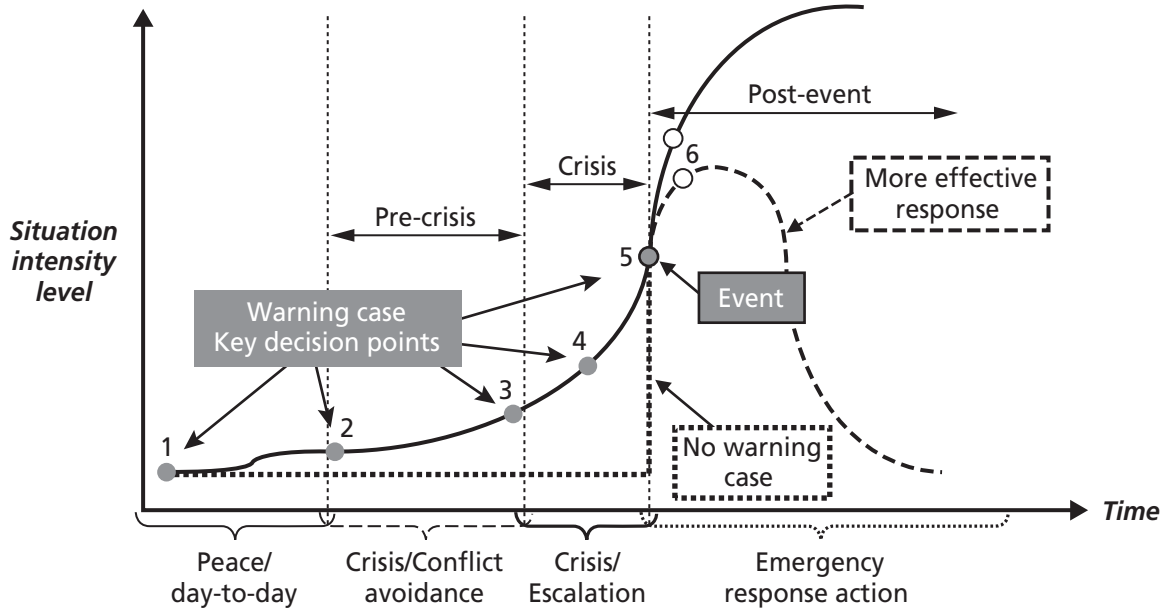
Figure 6.2 depicts these attack stages for two representative contexts (or temporal histories) within which terrorist events might take place:

- In the context of an escalating political-military crisis (represented by the solid line in Figure 6.2)
- When there is essentially no warning prior to the attack (represented by the dashed line in Figure 6.2).

In the first context, the perceived crisis level from a homeland security perspective (labelled "Situation Intensity Level" in Figure 6.2) would presumably escalate along with an escalating political-military crisis. Local and state medical emergency response communities will obviously need different approaches to planning for these two distinct types of contingencies.

It is clear from this framework that decisions that are made on the basis of early warning could be very important to ensure the most effective defense posture and prepare for

Figure 6.2
Temporal Histories for Various Types of Terrorist Attacks



RAND *MG217-6.2*

potential response activities. Similarly, crucial decisions will be made during the period immediately after an event has occurred (point 5, labelled "Event," in Figure 6.2) and immediately post-event (e.g., point 6 in the figure) when the magnitude of the attack is presumably (or hopefully) becoming clearer.

The broad objectives of medical emergency response efforts in such a conceptual context could be characterized as follows:

- To contribute, to the greatest degree possible, to reducing the likelihood that a major terrorism-related crisis or attack would take place
- If a major terrorism-related crisis or attack does take place, to mitigate the effect of the resulting medical emergency (see the line labelled "More Effective Response" in Figure 6.2).

The Design and Testing Process Included Consideration of a Menu of Potential Issues

It was recognized at the outset of this study that the challenges in anticipating and responding to any large-scale terrorist attack reflect a very broad set of issues that potentially could be explored through scenario-based exercises. However, it was imperative that the exercises be confined to a single day to garner full senior-level participation. This time constraint dictated narrowing the menu of potential issues.

The spectrum of emerging CBRNE medical response issues calls for consideration of the following broad issue areas as being potentially appropriate for an exercise having the objectives described earlier:

Information-Sharing Issues

- Intelligence sharing—federal policy on the sharing of intelligence-community information; sensitive federal law enforcement information; analyses of threat indicators and warnings; and related matters at the state and local level
- Information-sharing arrangements between the government and the private sector.

Specific Operational Issues

- Alert and warning—the relationship among various national, regional, and local plans for alert and warning of a possible or ongoing attack
- Attack assessment/damage assessment—(1) assessment of the character and magnitude of an attack and the possibility of subsequent attacks, (2) assessment of damage to the population and other civilian targets, and (3) recognition of uncertainties about the type and magnitude of potential damage
- Command and control—"Who's in charge?" issues in those contingencies in which engagement of the federal government, possibly including the military health system, is likely
- Rules of engagement (ROE)—ROE regarding triage, crowd control, quarantine, evacuation, and other medical and law enforcement matters
- Public affairs/education—timely preparation, vetting, and presentation of public affairs and other crisis-related information, and responsibility for those activities.

Specific DoD Issues

- Overall DoD strategy—the overall DoD approach to employment of active duty and reserve component medical assets
- DoD medical capabilities—assessing which specific DoD medical capabilities may aid in meeting specific civilian shortfalls resulting from a large-scale CBRNE attack
- Legal issues—the application of (and possible conflict between) state and federal (and possibly local) laws in various terrorism contexts.

It is clear that there is substantial overlap in several of these broad issue areas, and that some areas are relevant to both federal and state/local jurisdictions and that some involve the private sector to some degree. It is also clear that not every issue could be treated in depth in the Georgia and California exercises. Issue prioritization, therefore, was of special concern in the iterative exercise design process. The choice of issues for illumination and potential decisionmaking is discussed for each exercise later in this chapter.

Terrorist Attack Scenarios

While only two in number, the exercises sought to illuminate to the greatest degree possible the requirements that could result from the full spectrum of potential large-scale terrorist attacks. This goal raises the question of how broad that spectrum might be in terms of the type of terrorists involved, their objectives, and the weapons they might employ.

We made no effort in this study to develop a terrorist threat estimate or to critique the threat assessments that do exist. Rather, we assumed that either a global terrorist organization such as al Qaeda or a nation-state adversary of the United States could attempt to undertake large-scale terrorist attacks in the United States with the objective of deterring or

compelling U.S. action or as a means of punishing the United States for some perceived wrongdoing.

The nature of the weapons available to such adversaries and the sophistication of those adversaries' weapons delivery capability are at this time highly debatable, a situation that is likely to continue for the foreseeable future. For the purposes of this study, we assumed that large-scale terrorist attacks could in principle involve the full spectrum of CBRNE weapons. In considering large-scale attacks with such weapons, the exercises sought to ascertain the approximate level of attack that would lead to shortfalls in the ability of state and local authorities to deliver needed medical services.

With this perspective in mind, attacks with conventional explosives (including, for example, such attacks on petroleum or chemical storage facilities) were given a lower priority on the grounds that even large-scale attacks of this sort may not necessarily lead to state and local medical services shortfalls. On the other end of the damage spectrum (but of very low probability), almost any conceivable nuclear weapon attack would likely lead to significant state/local medical services shortfalls. Therefore, the exercises initially focused on biological, chemical, and radiological attack scenarios.

The attack vectors chosen in each of the exercises—smallpox in Georgia and radiological dispersion devices (RDDs, also known as "dirty bombs") in California—were a product of discussions with each state's representatives on what would best meet their interests and those of the Defense Threat Reduction Agency in this general research area. Both exercises also provided insights into the problems that could emerge in the states in the event of other large-scale terrorist attacks.

The Georgia Exercise: Smallpox Attack

Background

After close and repeated consultation with Georgia public health and emergency management officials, the decision was made to employ a bioterrorism scenario—a significant smallpox attack in the Atlanta metropolitan area—for the Georgia exercise. The scenario was consciously designed over the course of the testing period to be sufficiently serious to create demands that would exceed expected local and state medical response capabilities. With this objective in mind, a close look at the Atlanta and Georgia emergency response capabilities (summarized below) provided the basis for designing a credible terrorist threat and an associated scenario. A design process over several months preceded the first test of the exercise in late August 2002 and a second test in mid-September. The capstone exercise took place in late October 2002.

The design team for this exercise consisted of RAND research team members and a wide spectrum of Georgia state and local representatives from organizations including the Georgia Division of Public Health, the Georgia Department of Defense, Georgia Emergency Management Agency, Georgia Police Academy, Georgia State Police, Georgia Department of Transportation, Atlanta metropolitan area fire chiefs, Metropolitan Atlanta Rapid Transit Authority (MARTA), and the Atlanta Police Department. The exercise participants included representatives from these organizations and federal representatives from DoD, DHHS, FEMA, and FBI.

Georgia Emergency Response Services

At the time of the exercise, several broad-based entities characterized the emergency response systems at the local and state levels in Georgia:

- Two overlapping response systems in the metro-Atlanta area (which encompasses 20 counties): (1) the original Metropolitan Medical Response System (MMRS), established just prior to the 1996 Atlanta Olympics and (2) the more-recently formed (and state- and DHHS-backed) Atlanta Regional Health Response System, which has the objective of developing and coordinating local, state, and federal medical responses in the metro-Atlanta area
- A statewide response system that encompasses the 139 counties not in the 20-county metro-Atlanta region and a portion of the Atlanta metropolitan region
- A mutual-aid agreement between Augusta and Savannah, Georgia, and Aiken, South Carolina, under which they would share resources in the event of a large regional disaster
- An MMRS coordinating the resources of Columbus, Georgia, and Phenix City, Alabama.

In addition to these broad public health systems, Georgia also developed its own emergency response plan, called the Emergency Support Function (ESF) 13: Terrorism,[4] which covers terrorism-related crises and response issues (e.g., responsibilities, concepts of operation) not covered in the National Incident Response Plan.

In addition, Georgia developed a five-stage threat-level system that establishes minimum precautionary measures to be taken by Georgia agencies in response to an actual or threatened terrorist attack.[5] The authority to set or alter these threat levels rests with the State Coordinator for Homeland Defense.

The Threat and the Scenario

With any terrorism-oriented CBRNE exercise, the development of the specifics of the threat is inherently a matter of substantial speculation. In this case study, Atlanta and the State of Georgia present substantial medical response capability, implying that for the purposes of this study the threat (the perpetrator and the perpetrator's capabilities) had to be substantial to overwhelm the medical response capability and potentially lead to a request for federal assistance. With this in mind, the threat was presumed to be al Qaeda, aided by a nation-state, which was the source of a clandestine smallpox attack.

Because the study effort was focused on the response to a situation in which the attack is sufficiently large that shortfalls occur in the state and local medical services capabilities, the size and character of the attack was iterated during the testing period to the point that there was a clear consensus in the design group that the postulated attack would produce such shortfalls *and* would still be credible. The smallpox attack that emerged from this design

---

[4] "Preparedness Emergency Support Function (ESF) 13: Terrorism," Georgia Citizen Corp, n.d., available at http:// rome.gema.state.ga.us/WebGema/prepare.nsf/0/96457dc72e84831885256cbd0074ed71?OpenDocument, accessed September 5, 2003.

[5] State of Georgia, Office of Homeland Security Web site, available at http://www.gahomelandsecurity.com/, accessed September 21, 2003.

process was an attack on the Atlanta MARTA mass transit system achieved via distribution in one of the principal MARTA subway stations (presumed, but not stated, to be achieved via the use of an innocuous-looking nebulizer, such as the kind used to dispense medication to asthma sufferers, from which the dispensed particles are the optimal size for inhalation).

While the severity of the attack scenario was designed to be extreme, the model for the smallpox outbreak was based in reality. The smallpox model was a stochastic, event-driven model of the evolution of a smallpox outbreak under various assumptions about the number and nature of cases initially exposed, the epidemiologic characteristics of smallpox, and the effectiveness and timing of control measures. The values used in the model were based in part on historical accounts of outbreaks in Europe and North America after 1945. A slightly refined version of the model was published in the *New England Journal of Medicine* on January 30, 2003, by Bozzette et al.[6] The model allowed exercise participants to observe the numbers and types of smallpox casualties throughout the postulated outbreak (see "Tab E: Step Three Situation Report" in Appendix D). A more complete description of the model appears in Appendix E.

The Exercise

Step One. Step One of the exercise was set in September 2003. Three working groups, each of which constituted an ad hoc State-Federal Task Force on Medical Services, confronted a situation in which recently obtained intelligence information raised the prospect that an al Qaeda terrorist cell—possibly operating in league with or under the direct guidance of Iraqi intelligence—may plan to launch biological attacks against selected U.S. cities, including possibly Atlanta. This situation raised the question of whether defensive or preparatory measures or issues should be addressed immediately at the state and federal level to protect against such an attack or to mitigate its effects if such an attack is not prevented.

The working groups' tasking was threefold: (1) to select a set of medical/health issues to be sent forward for decisionmaking at the state and federal levels; (2) to make recommendations regarding the issues sent forward; and (3) to make recommendations on an overall strategy for responding to the situation. The presumption was that, immediately in advance of the working group meetings, a staff-level draft memorandum was prepared to assist the group in addressing a set of federal and state issues.

On the basis of the staff-prepared draft memorandum, the three groups addressed the following federal issues:

- Whether the federal government should provide certain Georgia officials with access to more of the available classified information on the emerging bioterrorism threat
- Whether the federal or state government should convene a federal-state planning-process committee to address the potential threat
- Whether DHS should survey the Strategic National Stockpile (formerly called the National Pharmaceutical Stockpile) and other regional medical assets with an eye to the availability of particular medical assets.

In addition, the three groups addressed the following state-level issues:

---

[6] Bozzette, S. A., et al., "A Model for a Smallpox-Vaccination Policy," *New England Journal of Medicine,* Vol. 348, 2003, pp. 416–425.

- Whether Georgia state officials should initiate a planning process with local law enforcement and the National Guard in light of possible quarantine/isolation requirements
- Whether Georgia should independently assess area medical assets in the light of a possible bioterrorism attack
- The effectiveness of medical/health-related information-sharing systems
- The adequacy of state-level processes for requesting federal assistance to respond to a bioterrorism attack
- Media and other public information issues.

Each of the groups adopted a generally cautious approach to this situation. They saw no need for expanding the list of state officials holding security clearances, but some group members were concerned that some officials who were cleared may not get the information they need. The groups saw no pressing need for launching a coordinated federal-state planning process, although they recognized that the situation was such that it warranted the immediate involvement of the recently created Georgia Homeland Security Task Force (and the continuation of ongoing federal and state planning processes). The groups also recognized the possible need for greater clarity on who would lead any bioterrorism-related planning process or crisis response at the state level.

Considerable attention was devoted to the challenge of monitoring the situation and the need for planning and assessments (e.g., of statewide diagnostic capability, hospital resources, and isolation and quarantine capability) to be prepared for a possible attack. While there was some confidence in the Health Alert Network, there was concern about the need for significant cooperation from private hospitals. Deliberations over a process for requesting federal assistance in this step of the exercise marked the first of many exchanges across the state-federal divide regarding the state's ability to articulate health and medical requirements in such a way that the federal government, and DoD in particular, could effectively act in response to those requirements.

Step Two. In Step Two, set in November 2003, the exercise groups confronted three unusual medical cases (with ambiguous patient symptoms that defied easy diagnosis) at three different Atlanta-area hospitals. Over several days, the condition of the three patients deteriorated to the point that early presumptive but incorrect diagnoses of adult chicken pox, malaria, viral syndromes, and meningitis gave way to the suspicion that one or more of the patients may have contracted smallpox. While awaiting the results of an infectious disease consultation on a patient that appeared to be too ill to have chicken pox (raising the strong suspicion that he may in fact have smallpox) and the results of an emergency epidemiological survey for additional patients with illnesses accompanied by a rash and unexplained fever, the ad hoc State-Federal Task Force on Medical Services was again asked to address a set of issues.

The groups addressed a set of federal and state issues, some of which involved tradeoffs between (1) increased preparedness for responding to a likely smallpox attack of uncertain magnitude and (2) the need to avoid to the greatest degree possible public panic and other such consequences.

Federal-level issues addressed by the three groups included the following:

- Whether the federal government should lead a planning process to deal with the possibility of a bioterrorism attack on Atlanta (and determine who would take a leadership role in this process)
- Whether the federal government should begin deploying federal medical assets to Georgia
- Whether the federal government should activate the NDMS.

The groups also addressed the following state-level issues:

- Whether the state or federal government should immediately request smallpox vaccine from the SNS
- Whether the state or federal government should alert neighboring states to the situation developing in Georgia
- The possible need for greater security at regional hospitals
- The ROE for quarantine and isolation
- A possible mandatory vaccination policy for public health and emergency management officials
- A strategy for dealing with the news media.

In this step, the groups continued with their generally cautious approach to the situation while hedging against the prospect that Atlanta may have suffered a major terrorist smallpox attack. Involvement by the federal government (e.g., a possible Stafford Act declaration [see Chapter Four]) was debated but generally viewed as being premature pending further assessment of the evolving situation. Distribution of the SNS and activation of the NDMS were considered but set aside in favor of active interaction with DHHS and a plan to swing into action only after a smallpox attack is confirmed. Isolation, quarantine, and security at the hospitals that currently harbored probable smallpox patients and that could harbor more in the future were all major concerns, as was the problem of fire, police, emergency management, and other key personnel lacking smallpox vaccinations. It was not clear that all such personnel would report to work in the event of a confirmed smallpox attack. The perceived need for a media strategy was acute; concern was great that the situation could get out of hand quickly without an effective approach to dealing with the media. The situation also raised the possibility that travel to and from Georgia could be severely restricted, and there may be a need to involve surrounding state governors in this and other issues related to the crisis.

Step Three. Step Three was also set a few days later in November 2003. Cases of smallpox had been confirmed, and the groups confronted a situation in which there clearly had been a smallpox attack on Atlanta, apparently via dissemination in a downtown MARTA station two weeks earlier. More than 1,200 people had already died, and several thousand more were showing signs of infection. It was estimated that as many as 10,000 to 15,000 people might have been infected based on an incidence curve that related the appearance of infections with the likely initial level of infection.

The issues addressed in Step Three included the following:

- Shortfalls in various medical areas (e.g., staff, facilities, supplies) where federal assistance would likely be needed
- Operational rules for public health officials (e.g., decontamination, triage)
- ROE for quarantine and isolation
- Rules of liability for vaccine-related injury.

All of the groups had a clear recognition of the unique demands (and the attendant issues) posed by the Step Three events. In the absence of existing plans for such a contingency, the groups focused on crafting ad hoc processes appropriate to the situation and a response that employed state (versus federal) assets—capitalizing on interstate and other nonfederal relationships, such as they might be, developed in other contexts—to speed the emergency response process. A general strategy of vaccination and hospitalization in public venues (e.g., sports arenas) was developed. While some local and state participants opined that federal, and possibly DoD, assistance may be needed in the form of medical personnel, none offered a specific request for such assistance. The participants also recognized that other requirements might also call for outside help. For example, it was clear that the demand for transportation and delivery of basic goods and services (food, water, sanitation) would be great because interstate shipping was expected to be nearly halted, and many residents would be encouraged to remain at home. Again, no specific requests for such goods and services were made.

The groups' response to this situation was dominated by their recognition of the need to care for a burgeoning caseload of ill patients and a massive logistics problem in ensuring that the basic needs of the population were met in a crisis situation in which the delivery of human services was on the verge of breaking down. Communicating health and medical requirements, based on predicted shortfalls in Georgia's medical capabilities, to the federal government (and potentially to neighboring states) was already seen as being problematic. When the prospect of requesting assistance (over some presumed uncertain timeline) was considered, state-level participants focused on shortfalls in *personnel* (e.g., doctors and nurses) that did not lend themselves to ready translation to the kinds of civil support services or packages (i.e., units) that DoD was prepared to provide. Legal issues concerning patient decontamination, triage management, and isolation and quarantine clearly presented extremely difficult problems.

Step Four. In Step Four, the groups returned to the present time and addressed a candidate set of issues for possible inclusion in near-term action planning. The results of those deliberations—including their illumination in the future scenario portion of the exercise and earlier exercise tests—are described in the next subsection.

Exercise Results: Issues and Observations

Over the course of the exercise design and testing process, the potential consequences of a smallpox attack on the Georgia medical response system were carefully noted in an attempt to identify both specific local or state issues and the shortfalls in local or state capabilities that could lead to requests for assistance from the federal government.

The most significant issues that emerged from this process, highlighted in Step Four of the final exercise, and the observations made during the exercise regarding their potential

future implications, are summarized below. These issues and observations were gleaned from the exercise proceedings and from interviews with exercise participants; they reflect the authors' discernment of the participants' consensus views on these issues.

Requirements Determination. Substantial time and effort were devoted, in both the design and testing process and final exercise, to the challenge of the state adequately articulating its requirements in a crisis environment in which shortfalls are emerging and federal assistance is likely to be needed.

The current process that governs such requests involves several steps between the state entity that is making the request and the federal component that would attempt to meet the shortfall, an inherently challenging communications process (although this process may change with the introduction of the nascent National Response Plan). While this system has been used on a number of occasions to deal with natural disasters, the kinds of problems that emerge in a bioterrorism attack are unprecedented. The absence of experience in and prior planning for such events will pose additional significant communications challenges. It was clear during the exercise that a crucial enabling capability for such communications, and for requests for assistance, is the ability of the state to articulate its shortfalls and associated requirements.

Legal/Liability Issues. The exercise exposed a host of legal issues and provided an opportunity for debating those issues, most of which were in the area of legal liability. For example, the question of who assumes the liability for illnesses resulting from smallpox vaccinations was a matter of some debate, tempered by the expectation that the federal government would somehow assume such responsibility (which it subsequently has done).

While there were initial concerns that legal authorities might not be in place to protect DoD medical personnel from legal liability in states in which they were not licensed to practice, this issue is not a legal concern in Georgia and is not likely to be a concern in other states. A related issue was the licensure and liability status of volunteer civilian medical personnel who were either already in the area of legal liability or who had arrived to assist with the medical effort. Interestingly, some debate ensued concerning the use of military medical professionals in order to avoid legal liability issues, as the participants assumed that these professionals in their federal status enjoyed some legal protections. An additional issue was the legal status of unique military medical personnel, such as medics, who are not civilian accredited and often have no direct civilian counterpart.

A related legal issue was the standard of medical care[7] that might be provided to victims of the attack. While many participants assumed that a governor would exercise emergency powers to waive liability for altered standards of care, the concern was that the sheer number of victims versus the number of available medical personnel would result in a standard of care that is less than the peacetime standard of care. Additionally, the participants presumed that the practice of medical triage, in which medical resources are allocated to where they have the best chance of success, may result in morbidity and mortality that would be more severe than expected under other circumstances.

The legal issues surrounding isolation and quarantine were determined to be complex, especially issues regarding the use of force. Therefore, medical and law enforcement communities should have a clear appreciation of each other's roles in any context in which

[7] That standard includes the number of patients per attending physician or nurse, the adequacy of facilities, and other factors.

isolation and quarantine are major issues. This issue argues for a training process in which the two communities interact more closely than they have in practice. Additional related legal issues are discussed further in Chapter Four.

Threat Assessment. One of the most difficult tasks at the state and local levels in responding to the threat of terrorism is assessing the threat: Who might launch a terrorist attack of what nature (what weapons? agents of what size?) against what targets in a community or state? Threat assessment is a particular challenge for three reasons: (1) The range of potential threats, in both type and size, is very large; (2) the perception during the exercise was that the federal government itself is not able to conduct a very satisfying threat assessment; and (3) what little the federal government does know is almost invariably highly classified. The difficulty in doing vulnerability assessments further complicates the risk calculus. With this range of inherent uncertainty, terrorist preparedness becomes a challenging process for states and localities.

The exercise participants clearly understood that states will have to undertake terrorism preparedness without the benefit of a threat assessment that defines the threat to the degree desired for planning purposes. Most participants agreed that when more specific or detailed information on a threat does emerge, the federal government will need to have processes in place that ensure that appropriate individuals at the state level with a need to know can be informed on threat assessments.

Command and Control. The nature of a smallpox attack—with local, state, and federal authorities all likely to be involved—is such that challenging, if not serious, command and control problems could conceivably emerge from the attack. One complicating factor in particular is that the FBI will judge any terrorist attack to be inherently a crime and may insist on its right to control a crime scene. On the other hand, at the local level, first responders will be responsible for many critical early decisions, with the command responsibility migrating to higher-level local and state officials as the magnitude of a large-scale attack becomes clear.

At the state level, the emergency medical and law enforcement response to any large-scale terrorist incident will quickly come under the aegis of the currently emerging state directors of homeland security and the governor of the state.

The formidable security and law enforcement problems that may arise after any large-scale terrorist attack could profoundly affect the delivery of medical services, which argues for substantial pre-event coordination efforts between the medical and law enforcement communities regarding related command and control issues.

Exercise participants believed that the military's traditional preference to remain in charge of its units might have to give way to an arrangement by which there is a central collective coordinating authority through which resource allocation issues are resolved. This kind of change in traditional military operations practices may not be readily accepted. That change may in the end be an outcome of the "Who's in charge?" debate that eventually will have to take place between DoD and DHS, either in peaceful times through the interagency process or (far less preferably) during crises when such decisions will have to be made expeditiously. In the latter case, there is the inescapable danger that such processes will be inadequate for the situation at hand and/or set undesirable precedents.

Communications. The history of major domestic contingencies indicates that emergency communications among the diverse parties that would be involved in responding to a large-scale terrorist attack are likely to be very challenging. The participants recognized this

likelihood, and they generally agreed that increased use of tests and exercises should help to identify and remedy particular communications problems. In this context, it was agreed that the federal government's efforts to establish a common 800 MHz communication system for emergency responders and law enforcement officials is an important initiative that should be brought to full operational capability as soon as it is practical to do so.

Planning and Preparedness. The vast uncertainty in the character and magnitude of a possible terrorist attack places a particular burden on the counterterrorism planning process and raises associated issues of preparedness. While the federal government must prepare for responding to the full spectrum of adversaries and attack modes, it is incumbent on state and local governments to take a more nuanced view of the threat spectrum, focusing on those threats that would appear to be of greater concern to their particular states and communities. Judging a state or city's level of preparedness for a large-scale terrorist attack thus becomes a difficult task. Another concern in this area is the character and content of the SNS. State and local participants were concerned over whether the SNS can be reconfigured to more appropriately reflect the kinds of requests that would follow from a large-scale terrorist attack.

Finally, for the foreseeable future, there will be a question as to whether DoD medical assets will be available to support civil emergencies. In fact, in the event of another terrorist attack, a major portion of the U.S. military could already be committed to more traditional military missions or could soon be committed to those missions. This fact did not escape the exercise participants and may have contributed to their unwillingness to rely on military support.

There exists a set of fairly standard measures or processes that can guide an evaluation of a state's level of preparedness against the most likely terrorist threats: (1) an integrated medical response plan; (2) an adequate available inventory of current medical assets; (3) a unified command, control, and communications plan for the state; and (4) a means of efficiently and coherently disseminating tactical threat information. A number of other measures or processes are also relevant—e.g., a system for early detection of an attack, published ROE for law enforcement and emergency medical personnel, and measures for sufficient mortuary capacity.

Incorporating the private sector in terrorism-related planning processes presents a special set of challenges. Approaches to ensure more fulsome involvement by the private sector that were suggested by exercise participants include direct outreach to hospitals and establishment of a regulatory regime that makes state licensing (and possibly government aid) dependent on participation in terrorism-related planning processes.

Most states are in the early stage of developing a state-level strategy for dealing with the prospect of terrorist attack. A general consensus among the participants was that a substantial period of time (i.e., six months to a year at least) should pass before it would be fair to evaluate state-level preparedness.

The California Exercise: Radiological Dispersion Device Attack

Background

After close consultation with California public health and emergency management officials, the research team and exercise design participants decided to employ a scenario for the California exercise based on a major RDD attack on one or more California urban areas, con-

sciously designed (over the course of the testing period) to create demands that would be sufficient to exceed expected local and state medical response capabilities. In contrast to the four steps in the Georgia exercise, the decision was made that this exercise could be done in just three steps (two future-scenario steps and a third back-to-the-present step).

A design process covering several months preceded the first test of the exercise in mid-November 2002 and a second test in mid-December 2002. The capstone exercise took place in early April 2003.

The design team for this exercise consisted of RAND research team members, a wide spectrum of California state representatives from organizations including the Office of Emergency Services, Emergency Medical Systems Authority, California National Guard, the Department of Health Services, and regional federal representatives from FEMA and the U.S. Coast Guard. Other federal-level exercise participants included representatives from DoD, U.S. Department of Energy (DOE), DHHS, U.S. Department of Justice, FBI, and U.S. Environmental Protection Agency (EPA).

Current and projected State of California emergency services (summarized next) provided important background for designing a credible terrorist threat and associated scenario.

California Emergency Response Services

California has a highly developed emergency services system, a direct consequence of the wide variety of emergencies that the state has faced in the past—earthquakes, wildfires, major Pacific storms, and potential nuclear accidents. The governor heads an emergency council that contains state and local officials and representatives from the American Red Cross, and has a wide range of powers formalized in the state's Emergency Services Act.

California employs a Standardized Emergency Management System (SEMS) that provides a uniform method for managing emergencies based on the Incident Command System. SEMS standardizes the organizational structure and terminology used by every response agency in California and expedites the flow of resources and communication within all organizational levels.

Under SEMS, the governor's Office of Emergency Services (OES) coordinates the state's disaster preparedness and response activities, assisted by representatives of key state agencies. OES is divided into three administrative regions—Coastal, Inland, and Southern—which encompass six Mutual Aid Regions that coordinate mutual aid and other emergency related activities. The regions provide the link between Operational Areas (OAs)—the counties and all political subdivisions within county boundaries—and the state. The responsibilities of the Mutual Aid Regions under SEMS include the management and coordination of information and resources among OAs. The OAs manage information, resources, and priorities among their local governments and serve as the coordination and communication links between the local government and regional level.

California's mutual aid system represents an integral part of SEMS. Whenever a jurisdiction's own resources may be inadequate to cope with a given situation, local governments and the state provide mutual aid. Mutual aid can include fire, police, medical/health, and engineering and public works services. California is also a signatory to an interstate compact whereby California can provide or receive assistance to or from other signatory states when requested via direct state-to-state contacts or interstate agreements and compacts, or through coordination by federal agencies.

California is also currently developing a multi-stage threat-level system to parallel that of the federal government and establishing measures to be taken by California agencies in response to an actual or threatened terrorist attack.

The Threat and the Scenario

As discussed above, the development of the threat specifics in a terrorism-oriented CBRNE exercise is inherently a matter of speculation. Because the State of California possesses a substantial medical and health emergency response capability at both the local and state level, it was clear from the outset of the design process that the RDD threat had to be substantial in order to overwhelm this capability and produce medical/health shortfalls that would necessitate requests for federal assistance.

With this perspective in mind, the threat perpetrator was presumed to be al Qaeda, aided by sympathetic and compatible individuals and organizations located in Southeast Asia who could aid in the delivery of the RDD weapons. The size and character of the RDD attack was iterated during the testing period to the point that there was a clear consensus in the design group that the resultant attack would produce the required shortfalls *and* would still be credible. A scenario result that the design team deliberately intended was the potential need to treat and/or evacuate patients already in health care facilities in the affected areas.

The RDD attack that emerged from this design process was an attack on the San Francisco Bay Area, with four separate RDDs located in such a fashion (on key bridges and highway exchanges) that the City of San Francisco was essentially cut off in terms of ground transportation, and the population of much of the San Francisco Bay Area was in a panic state because of the resultant (perceived) radiation exposure. Each of the RDDs was assumed to contain Cesium 137 (a source of high-energy gamma rays) and Americium 241 (a source of high-energy alpha particles). While the four RDD explosions were assumed to kill or injure only a small number of individuals in the immediate vicinity of each explosion, the attack was assumed to be successful in meeting the perpetrator's objectives of creating panic and the spontaneous evacuation that the explosions and radioactive clouds produced. (RDD explosions of this type would also produce a long-term contamination problem, but because the exercise was oriented toward emergency medical/health response it did not directly address this aspect of the attack.)

The future scenario component of the exercise was set in September 2003, when al Qaeda was thought to be steadily reconstituting and mounting intelligence indicated that the group was planning to carry out RDD attacks on American cities. Some of the intelligence information pointed to the possibility of the RDDs being shipped to the United States from Indonesia through West Coast ports, leading to a DHS directive to inspect shipping containers at West Coast facilities.

The Exercise

Step One. In Step One of the exercise, three groups of participants in the final exercise each convened as a meeting of representatives of the California State Cabinet, including executive representation from California emergency management, medical, health, environmental, and law enforcement related agencies, plus counterpart federal representatives. The groups confronted a situation in which the inspection of shipping containers in Oakland and Long Beach had revealed evidence of Cesium-137 contamination, leading to concerns that RDD devices had entered the United States via these ports. The tasking for the groups in this step

was threefold: (1) to frame a set of medical/health issues that should be forwarded to Sacramento and Washington, D.C., for decisionmaking; (2) to make recommendations on those issues to be sent forward; and (3) to make recommendations on an overall strategy for dealing with the situation.

Immediately in advance of the meeting between California cabinet and federal representatives, a "lower-level" state/federal planning meeting had convened to (1) review state/federal plans for responding to a dirty bomb attack, (2) identify resources to be alerted or mobilized, and (3) suggest medical/health services and detection/assessment policy issues to be taken up in the cabinet-level meeting. The deliberation and results of this planning meeting were developed iteratively during the design process and provided to the exercise groups.

On the basis of the input from the planning meeting, the cabinet-level groups addressed a number of state-level issues:

- Whether a government entity (e.g., California or U.S. DHS) should raise the terrorism alert level for the State of California
- Whether the federal or state government should notify the local public safety and medical/health communities of the likely increased risk of an RDD terrorist attack
- Who should be given the primary authority for public service and other emergency announcements in the event of a radiological weapon attack
- Whether the governor should make a statement on the potential RDD threat that had been discovered.

The groups also addressed a set of federal issues:

- Whether the federal government should provide certain California officials with access to more available classified information on the emerging CBRNE threat
- Whether the federal government, including DoD, should preposition medical assets that the federal government could make available in the event of an RDD attack
- Whether the federal government should raise the national terrorism alert level.

The groups adopted a range of approaches to this situation. Regarding state issues, the recommendations on the California state alert level ranged from a very cautious approach—remaining at the prevailing federal Yellow alert level (while calling on the federal government to selectively take actions appropriate to the Orange level), to calling on the federal government to immediately raise the overall national alert level to Orange with California preparing to respond in kind. There was general agreement that state and local public safety and medical/health officials and private-sector health care providers should be notified of the possibility of an RDD attack, with some preference for a cautious targeted approach to such notification. There was broad agreement on the appropriate assignment of primary authority for development and presentation of public service and other emergency announcements, with an emphasis on the role of DHS and ultimate responsibility for coordination of announcements in such circumstances with the California Joint Information Center. There was also agreement that a statement by the governor on the situation, coordinated with DHS, was warranted, but there was no need at this point for proclaiming a state of emergency in California.

The groups suggested a number of other preparations given the circumstances of the exercise, including assessing available diagnostic, decontamination, and other technical assets and equipment in government and private possession, pre-staging some of these assets, and identifying possible evacuation centers.

In terms of the federal issues, there was a strong consensus that the federal government needed to provide as much information as possible to California officials on a need-to-know basis so that California could respond more effectively if an RDD attack did materialize. There was also broad agreement on the need to alert officials responsible for federal assets that could be made available to California in the event of an attack, including the preparation of medical-grade Prussian Blue (potassium permanganate)[8] at Oak Ridge National Laboratory for possible emergency distribution in California. It was noted that while commercial-grade Prussian Blue might be made available, in most cases it was likely to be too contaminated with other compounds to permit its use for medical purposes, even in an emergency.

Step Two. In Step Two of the exercise, the groups confronted a situation in which a 12-day effort to find the suspected radioactive material had been unsuccessful. Then, on the same day, RDDs exploded at key ground transportation nodes in the San Francisco Bay Area. Fire and law enforcement personnel immediately began evacuating people in the vicinity of the explosions.

Within a short time, local news programs featured "nuclear terrorism experts" and other ostensible radiation health experts whose advice was widely varied. In contrast, more credentialed government experts argued that the radiation from the presumed Cesium-137 RDDs should not present a serious health problem other than in the immediate area of the explosion, where individuals were encouraged to stay inside and "shelter in place" (i.e., not evacuate). However, it became clear that the public was not confident of the safety assurances in government statements provided to the media, and there was widespread spontaneous evacuation throughout the Bay Area.

Analysis of the plumes from the explosions confirmed the presence of significant quantities of Americium-241 as well as Cesium-137. The discovery of possible Americium-241 contamination led to immediate concerns about the acute inhalation health threat to on-site fire and emergency response personnel and any individuals who were within a few hundred feet of the blast. Further analysis of radiation at various sites in the area led to a rough estimate of the upper bound on the amount of radioactivity released in the explosions and the generation of plume contours that estimate the degree of the health hazard from the explosions. Hospitals within and outside the areas covered by smoke from the four explosions reported that thousands of people were seeking decontamination and medical care for perceived radiation sickness. In addition, hospitals reported that some ambulatory patients were exiting the hospitals, with many checking themselves out despite medical advice to the contrary. Family members were also demanding the release of other patients, fearing that the risk of remaining hospitalized in a potentially contaminated area outweighed the risk of leaving the hospital.

---

[8] Prussian Blue (also called "iron blue") is an artificial pigment that is also used as a treatment to speed up the excretion of radioactive cesium or non-radioactive thallium from the body. The name comes from its historical use as a dye in German army uniforms.

Based on the available information on radiation dose rates, the California director of Health Services declared a public health emergency, followed by a declaration of a state of emergency for California by the governor. Responding to a request from the governor, the president issued a Major Disaster Declaration for all of California under the authority of the Stafford Act.

Further problems emerged when some emergency response and law enforcement personnel refused to enter the presumed contaminated areas and their union representatives demanded an urgent dialogue with the government about personal protection and liability issues. In addition, hospitals and emergency response organizations reported severe staff shortages because many replacements had not reported for work. A teleconference involving the affected county health officers and most of the hospital administrators in the isolated region of the San Francisco peninsula revealed substantial medical and related shortfalls and acute concerns about liability issues related to an inability to meet standards of care requirements. Further, a preliminary estimate provided to the governor indicated that decontamination in the immediate vicinity of the explosions would be a major near-term problem, with the state needing to secure decontamination assets to reopen the highways, which at a minimum would far exceed the assets currently available in the state.

The crisis situation again prompted a meeting of the governor's cabinet and management representatives of key federal agencies to prepare a list of recommended medical/health issues to be forwarded for decisionmaking at meetings scheduled in Washington, D.C., and Sacramento. The meeting participants were to decide on not only the medical/health issues that would go forward but also (as in Step One) to make recommendations on actions to be taken to address the issues and on an overall strategy for dealing with the situation. This was the context in which the Step Two deliberations were conducted.

The groups addressed the following state-level issues:

- Whether a government entity should evacuate hospitals due to their inability to meet an acute "Single Standard of Care" for all patients (or whether private hospitals will request such evacuation)
- What advice should be given to local health officers regarding individuals still residing in (or recently evacuated from) potentially contaminated regions
- Whether the state or federal government should order and distribute limited stocks of medical-grade Prussian Blue to treat Cesium-137 contamination and Diethylene Triamine Penta-acetic acid (DTPA) to treat Americium-241 contamination.

The groups also addressed the following federal-level issues:

- Possible assistance by the federal government to California for evacuation of patients from hospitals, nursing homes, and other such facilities
- Possible assistance from the federal government in detection, assessment, and decontamination capabilities
- Other possible federal actions with respect to federal assets such as NDMS
- Possible cost-sharing/reimbursement issues beyond those covered by the president declaring California a major disaster area under the Stafford Act.

Within each group, there was the general attitude that even though specific plans for this type of contingency were lacking, California's past experience with disasters and a clear delineation of responsibilities would enable the state to respond effectively to the RDD attack. In terms of the state-level issues, there was a strong consensus against patient evacuation and for bringing in DMATs and other assets and, if necessary, temporarily relaxing patient-care standards. There was also strong agreement that a carefully coordinated message should be delivered throughout the Bay Area instructing individuals still residing in regions potentially contaminated by fallout to shelter in place pending further notification, while recognizing that there was a distinct possibility that further spontaneous evacuation might take place. All of the groups agreed that Prussian Blue and DTPA should be requested, with a careful distribution plan focused on those individuals actually exposed to radiation and recognizing that further attacks might take place.

The legal issues that surfaced were generally treated with caution (with one group forwarding all of them to "the legal office") and generated concern that any actions taken (e.g., perimeter/crowd control, curfews) have a strong legal basis, while ensuring that law and order were maintained. Legal issues were not a major focus of debate in one group; nevertheless, that group noted that the authority vested in the Public Health Emergency Declaration made it possible to compel hospitals to accept patients and that the State Emergency Services Act made it possible to redirect nonessential state employees to emergency duties. All groups agreed that decontamination efforts to render highways, key equipment (e.g., emergency medical service equipment), and key sites (e.g., the San Francisco airport) usable should be commenced as soon as possible, while recognizing that there would be some impediments to these efforts because each explosion site would be regarded as a crime scene with its attendant complexities concerning securing evidence.

There was broad agreement on the need for assessment and decontamination centers, with multiple suggestions for possible sites locally in the Bay Area and evacuation centers in outlying areas. Each group noted that assessment and decontamination assets within the state were wholly inadequate to the task of decontamination and that an effort by OES to coordinate outside assistance to meet this need was critically important. With this in mind, each group acknowledged, although not all to the same degree, that federal medical assistance needed to be requested. In addition to assessment and decontamination assets, the perceived needs included possible field hospital facilities at evacuation sites and specialized personnel (e.g., pharmacists and mental health professionals). However, no clear articulation of the shortfalls and requirements was developed.

Media and public information issues were a source of concern for all of the groups, who were particularly concerned about the potential for and effect of unwarranted panic. The groups developed a number of specific cautions and suggested do's and don'ts for communicating with the public:

- Emphasize that government at all levels is taking action on the situation.
- Provide clear scientific explanations of what has happened and what is happening technically and geographically.
- Provide appropriate sources for relevant information.
- Clarify possible actions to be taken at the personal level, especially actions involving children, older dependents, and pets.
- Provide the location of evacuation and decontamination centers.

Federal issues were not a major focus of discussion in any of the three groups, which is not surprising in view of the overall strategy of responding to the crisis using state assets and the lack of a comprehensive determination of shortfalls and requirements. However, the exercise groups clearly recognized that California was going to need assistance, and that while some help *might* come from regional multistate compacts, California would definitely need assistance from the federal government, in the near term at a minimum. The participants who explicitly addressed how the California situation might look from the federal vantage point thought that it would be abundantly clear to Washington (and thus clear to DHS, DHHS, DoE, DoD, EPA, and their relevant teams, largely because the incident had many of the earmarks of a large nuclear accident) that California was going to need help—at a minimum of the sort described above in the list of state-level issues. Less clear were the specific types and amount of assistance that would be required.

Step Three. In Step Three, the groups returned to the present time and addressed a candidate set of issues for possible inclusion in near-term action planning. The results of those deliberations, including their illumination in the future scenario portion of the exercise and in earlier exercise tests, are described next.

Exercise Results: Issues and Observations

Over the course of the exercise design and testing process, the potential consequences of an RDD attack on the California medical response system were carefully noted in an attempt to identify both specific local and state issues and the shortfalls in local and state capabilities that could lead to requests for assistance from the federal government.

The most significant issues that emerged from this process, highlighted in Step Three of the final exercise, and the observations that were made regarding the potential implications of those issues, are summarized later in the chapter. The issues and observations were gleaned from interviews with exercise participants as well as from the exercise proceedings themselves; they reflect the authors' discernment of the participants' consensus views.

Warning, Attack Assessment, and Monitoring. The exercise highlighted the challenges surrounding warning, attack assessment, and monitoring of RDD attacks. The highest priorities to emerge from the discussions of this subject follow.

There was some concern that sharing of intelligence on the RDD threat, which could assist states in activating their (however modest) capabilities, especially for detection, would be inadequate.

Participants expressed a need for more and better (and standardized) technical systems at the state level for radiation detection and perimeter monitoring. Such systems include pre-event detection or location of threats, trans-event attack assessment, and post-event monitoring. While sophisticated federal systems do exist for post-event monitoring, participants thought that it is unlikely those systems would be deployable to an affected region in sufficient time to enable early assessments and decisionmaking to address the problem of panic and spontaneous evacuation. More widespread meteorological monitoring also could assist in prompt assessments of attack magnitude and plume dispersion.

Statewide strategies for dealing with all the dimensions of RDD attacks need to be developed based on plausible assessments of likely attack scenarios. Just what level of shield against RDD attack does a state need to develop? What specific actions should the public health and medical communities take at various levels under various circumstances? In response to these questions, exercise participants made the following observations:

- Ideally, some kind of public warning system that has public credibility and conveys credible attack assessment capability could be deployed in major urban areas (discussed further below).
- Improved monitoring of ground transportation portals and major shipping ports could assist in addressing pre-event detection.
- Most states are likely to have radiation detection and monitoring assets in their universities and industrial facilities that could be used in response to a dirty bomb attack.
- Assessment and monitoring strategies for supporting evacuated populations can benefit from existing contingency planning for nuclear accidents.
- Exercises involving the medical/health community, law enforcement community, and news media could help to build greater understanding of how to respond most effectively to an RDD event.

Response to Warning of an Attack. The exercise highlighted the need to address the warning response challenges that the state government, the public, and medical services face in the context of the emerging California terrorism alert and warning system (which incorporates the same five-level system established by the federal government).

Participants identified the need to distinguish between the state alert level and the state response to warning and the alert level and response at the federal level. This distinction will require special processes for coordination of the California and DHS alert and warning levels during crises in which California is seen as a high-priority target.

Participants regarded public response to threat warnings as a high-priority topic. To this end, participants identified the need for radionuclide-related information that can be disseminated to the media and the public in emergency situations, with statements on various threat levels by spokespersons who have the public's trust. Participants suggested that Existing information on what to do in the event of an earthquake could provide a guide to the kind of information the public would need for an RDD or other CBRNE terrorist attack.

The groups also identified a need for standardized medical service response to warnings of possible *radiological weapon* attacks at various state-specific threat levels. This standardized response would require training programs for medical and hospital workers, caregivers, and emergency response personnel to include standardized medical response procedures in the event of such attacks.

Legal Issues. A number of legal issues emerged during the exercise design and testing period that were addressed in the final exercise. Priority legal issues requiring further examination and the groups' perspectives on this topic are discussed next.

In a large-scale terrorist event (or other public health disaster), it can be anticipated that some victims will receive levels of care that are relatively austere as compared with established standards of care. While this situation is often unavoidable, it can create circumstances in which the shortfall in care becomes a legal issue down the road, which argues for addressing this possibility in advance via new legislation or clarification of existing legislation. This exercise also included significant deliberation on the authorized level of force for crowd control, quarantine, and isolation. (Similar issues were also addressed in the Georgia exercise discussed above.)

Decontamination standards (the acceptable level of contamination remaining after decontamination versus background radiation levels) would be a particular challenge in the event mass decontamination is required for specific radioisotopes.

Determining "safe" contamination levels required for the return of affected populations will be an important legal issue, as will guidelines for emergency medical service personnel and other critical personnel who enter or remain in contaminated areas. In the latter case, it may be deemed necessary for some personnel to employ equipment (e.g., transportation equipment) that has not been decontaminated sufficiently to meet established standards. In particular, it seems unlikely that existing EPA Protective Action Guidelines would be imposed because their highly conservative nature (i.e., they require decontamination to a very low radiation level) was a point of contention during the exercise.

Rules for mandatory evacuation of portions of the general population and patients in hospitals or other care facilities, as a function of the size and character of a terrorist attack, were seen as important legal issues to be addressed, if possible, in advance of a crisis situation in an actual terrorist attack. Similarly, rules for the mandatory treatment of potentially contaminated individuals in a public health emergency, such as a terrorist attack, will be subject to change according to the prevailing circumstances. In general, participants opined that contaminated individuals would have to receive treatment unless such treatment creates an imminent danger to others.

General and Medical Evacuation. Almost any RDD attack can be expected to result in mass evacuation, whether spontaneous or as a result of a government decision, from, at a minimum, areas in the general vicinity of an explosion and downwind from the projected region of the radioactive plume. An evacuation may even take place absent any identified health hazards. Because of the lack of experience with this kind of threat, a number of issues were characterized as being high priority, requiring attention from authorities in advance of such an event:

- Pre-designation of possible mass-evaluation/decontamination centers
- Pre-designation of possible mass-evacuation locations
- Identification of the roles and responsibilities for support of evaluation and/or evacuation centers
- Planning for transportation and other logistics infrastructure to support mass evacuation
- Planning for long-term support of the general infrastructure (e.g., supplying water, food, shelter, equipment, health/medical services including psychiatric services) in evacuation/evaluation center locations was also seen as an important issue, in particular when the public refuses to reoccupy an area despite government assurances that the area is safe.

In the event of a CBRNE attack, and an RDD attack in particular, hospital patients and similar populations (e.g., those in hospice care) present a special challenge for evacuation support. However, there was an expressed preference among participants in this exercise for sheltering in place, even though patients and their families were concerned for patient safety, prompting demands for discharge from those facilities perceived to be affected. Further, the scenario included a situation in which medical facilities in affected areas were becoming significantly understaffed because medical personnel either would not or could not report to

work. The participants considered requesting medical personnel from other California cities, other states, or the federal government to alleviate the personnel shortage, but did not seriously consider wholesale medical evacuations, as had been hypothesized by the design team.

Risk Communication. Participants saw risk communication as a significant challenge requiring further analysis and assessment. Pre-event development of authorized public-information messages, informational brochures, and delivery mechanisms (e.g., Web sites) to be used in the event of a CBRNE attack was identified as a need, as was pre-event provision of specific information geared to first responders that conveys levels of risk for potential events.

Participants also discussed the need for post-event development of public information messages and were particularly concerned about identifying spokespersons for dissemination of those messages. Participants particularly noted the need to develop strategies to ensure that appropriate information is disseminated as early as possible after a threat or attack to counter any disinformation that is almost certain to accompany a large-scale terrorist CBRNE (and especially RDD) attack.

Some participants felt that the development of an information system that ties together hospitals so that they may share relevant post-attack information on victims, treatment strategies, and public health is also important. Such a system would also be useful in determining shortfalls and requirements.

Processes to Communicate Requirements in Requests for Assistance. Each group considered whether standardized processes are in place, or are needed, to adequately determine and communicate requirements for federal assistance to cover possible local and/or state medical services shortfalls. Several steps toward such processes were considered. To ensure that the state's capabilities for medical/health assistance are effectively coordinated with federal assets in the context of a large-scale terrorist attack, participants recommended that the emerging National Response Plan and National Incident Management System should carefully account for state-level emergency management system processes (in the case of California, the SEMS system). The groups discussed at length the ability of the states to assess medical capacity and shortfalls, which could be translated into requirements. While some participants suggested that some states, including California, possess this capability, several participants suggested that such a capability was unattainable given the size and diversity of medical resources in a state.

The consensus of the groups was that functionally oriented state-federal exercises are needed to facilitate a constructive exchange of views on the federal assistance issue, while recognizing that every disaster to date has been unique, and terrorism events with heavy medical demands are no exception. In this context, providing a single point of contact in the federal government would improve the efficiency of state-federal exchanges on federal assistance and in particular would assist the states in keeping up with federal developments in this area.

Participants also made further recommendations regarding the federal response system. First, participants considered it critically important that the federal government realize that a "one size fits all" approach in preparations to assist states during CBRNE crises will not achieve the kind of state-federal relationship that the states are seeking. States have differing needs, and each terrorist attack is potentially very different from another attack. Given this perspective, the federal government should, for example, evaluate state medical readiness levels for various kinds of CBRNE attacks in order to better appreciate each state's capabilities and potential shortfalls. The federal government should also develop regional versions of

national plans that mesh with state emergency management systems, such as SEMS or other procedures that states or localities may have adopted.

Participants suggested that the federal government should clarify what it does internally with medical assistance requests and in particular the role and mode of operation of DoD (e.g., NORTHCOM) when it receives such a request. Participants further suggested that it would be very helpful if the federal government developed communication and coordination protocols that employ common terminology for medical and health-related issues.

Costs. As with some other issues related to this study, time constraints did not permit an in-depth discussion of costs in the final exercise, although costs were identified in the course of the design and testing process as an important issue for consideration. The issue of costs centered around the question of which kind of federal assistance procedures should be established for emergencies and disasters covered under the Stafford Act and the Public Health Service Act.[9] This issue was addressed to explore how costs for local and state responses *prior to* an anticipated terrorist attack (i.e., following a warning) and responses *following* such an attack may be reimbursed by the federal government to ensure the most effective prevention and mitigation of the consequences of an attack. For example, if states know they will be reimbursed, they may be more likely to respond promptly before the formal declaration of a disaster, which may come too late to take effective response actions.

Because cost considerations are paramount among the states' concerns about developing an effective response to a terrorist threat, the cost issue clearly requires further study. The consensus among the groups participating in both the Georgia and California exercises was that some type of pre-event cost-sharing/reimbursement system, focused more on prevention than mitigation, would result in more effective (and perhaps less expensive) response measures.

Conclusions

As described in Chapter One, this study evolved after the attacks of September 11, 2001, from a primarily top-down assessment of military medical assets that could be used for civil support to one in which exercises such as those described in this chapter would provide a bottom-up view of how states and localities might respond to attacks. These exercises were designed to gain some insight into the process of identifying potential shortfalls that may be ameliorated by federal support. These exercises involved federal as well as state representatives, and their views are included in this report.

The exercises were designed to capture two types of qualitative data. First, the participants' consensus and dissenting opinions were reported directly by the participants during the exercises' plenary sessions. Second, the research team also noted the deliberations of the exercise groups, which led to the inclusion of viewpoints and issues that may not have been reported by the groups directly. This section presents a synthesis of these data.

The "Exercise Results: Issues and Observations" sections above, describing the results of the Georgia and California exercises, provide a more thorough discussion of the exercise outcomes. In this section, we consider the exercise results and offer observations that are germane to the use of military medical assets in support of civil authorities.

---

[9] Title 42, U.S. Code, Chapter 6A.

Despite engaging in exercises that were developed in close coordination with local and state representatives and that were designed to result in an overwhelming requirement for medical assistance, the exercise groups generally avoided requests for federal support, including support from DoD. Because these studies were notional exercises, the ability of participants to offer solutions without having to prove the effectiveness of the outcomes of those solutions is an unavoidable artifact. That is, the strategies that were explored in the exercises were not evaluated against the actual ability of the states and localities to execute them. However, the purpose of the exercises was not to evaluate specific strategies but to gain insight into the process for responding to an attack and potentially requesting assistance and to identify issues for near-term consideration and action planning. The intriguing question that resulted from the exercises is, why didn't the states request substantial federal (including DoD) medical assistance, as had been predicted?

The clearest (and most likely) explanation is that the status of the local and state medical systems prior to the attacks, and the demand for medical services created by the attacks, were not well known. It was assumed during the design process that systems were in place that could determine medical requirements with some useful degree of precision. This appears not to be the case. As such, a request for assistance that clearly articulated medical requirements was not readily possible. But such a request is the basis for DoD's planning process for matching capabilities to requirements.

In short, the federal government's question, what do you need? was answered during the exercises with, what do you have? This situation is similar to that in the historical case studies discussed in Chapter Five, in which coordination of military medical support during disasters resulted in the delivery of inappropriate or excessive assets due to an inability to articulate specific requirements or was conducted through nontraditional processes. This finding is not to suggest that Georgia and California do not possess robust emergency response systems. To the contrary, these states were selected in part because of the robustness of their systems, the thinking being that the coordination between these states and the federal government and the states' requests for assistance could be investigated as models for other states and federal authorities to follow. The results of these exercises highlight the lack of a national process to determine likely requirements in the event of a CBRNE attack and the lack of a deliberate planning process on a national level to coordinate support.

Other explanations for the lack of requests from the states for federal support are probably also valid. They include a limited understanding on the part of the states about what is federally available and a similarly limited understanding on the part of federal agencies about the capabilities of the states. Further, an inherent reluctance to ask for federal assistance cannot be ruled out. On the one hand, a governor may suffer politically for immediately requesting substantial federal assistance because such a request could indicate a lack of preparedness by the state. On the other hand, the consequences of not requesting assistance, including significant loss of lives or property, are obviously also politically risky. In an exercise with little, if any, of the consequences that would be associated with "real" outcomes, it is less risky to take the latter course of action and not request assistance. Nevertheless, the results of the exercises contributed significantly to near-term planning for the states and agencies who participated.

These explanations point to some cultural and institutional barriers that may be difficult to overcome, but they also suggest that there is significant room for improvement in

pre-event coordination and planning among states, localities, and the federal government, including DoD.

CHAPTER SEVEN

Conclusions and Recommendations

As of this writing, the subjects covered in this report continue to evolve rapidly. The states continue to develop and refine their emergency plans, and the federal government continues one of its most significant reorganizations ever, including the creation of the U.S. Department of Homeland Security, as the country responds to recent events, in particular the attacks of September 11, 2001. The Department of Defense is part of this evolution. Notably, the Office of the Assistant Secretary of Defense for Homeland Defense and NORTHCOM continue with their efforts to address developing homeland security issues and missions. In this chapter, we summarize the results of this research and present our conclusions and recommendations regarding the use of military medical assets to support civil authorities in the aftermath of a CBRNE attack.

Conclusions

A number of questions guided this research. Our conclusions with respect to those questions are presented next.

Under what circumstances could military medical assets be requested?

The exercises presented in Chapter Six best informed this research question, given that the exercises were characterized by reluctance on the part of civil authorities to request federal assistance despite scenarios designed to prompt such requests. We explored the potential reasons for this reluctance in Chapter Six.

The following situations are general circumstances under which requests may be made for federal medical assistance, possibly including requests to DoD. Federal medical assistance is likely to be requested by civil authorities during a crisis when the civilian medical system is characterized by:

- Destruction or significant degradation of infrastructure
- Depletion of critical civilian medical personnel
- Anticipation of prolonged effects on personnel and infrastructure due to destruction, contamination, or morbidity (e.g., in the case of smallpox)
- Shortage of critical capabilities that are unique to emergency and/or CBRNE response activities (e.g., decontamination, evacuation, certain medical specialty capabilities).

It is important to note that these conditions are not likely to be mutually exclusive. When considered in toto, they can be useful in examining particular crisis scenarios and predicting whether DoD or other federal medical assistance may be requested or perhaps even what type of assistance may be requested.

What sort of military assets or capabilities are likely to be requested?

In addition to providing criteria for predicting *when* military assets may be requested, it is important to provide criteria that enable planners to predict *what* may be requested. The historical case studies presented in Chapter Five indicate that DoD has provided valuable assistance to civil authorities in the past and can expect requests for such assistance in the future.

As discussed in this report, the ideal situation for DoD is to receive requests for assistance based on requirements, rather than requests for specific assets. The simplest explanation for this preference is that DoD best knows its assets and capabilities and can therefore best match them to requirements. This research suggests that, until the processes for determining and communicating requirements is improved, this ideal situation is unlikely. For this reason, and due to the DoD's limited experience in military support to civil authorities in general and examples of such support presented in this report in particular, it is difficult to predict with any precision what types of medical capabilities may be requested, let alone what types of medical responses DoD should plan for. Nevertheless, two observations are evident from this study. First, military "units" may not always be the most effective or efficient means of response. The case studies and exercises presented in Chapters Five and Six, respectively, indicate that an early and likely common need following an event will be the need for medical personnel, not necessarily unit-level response. Second, medical response often involves more than direct care of casualties. In some cases, other medical functions such as preventive medicine and veterinary care will be just as important. The need for other capabilities may be less immediately obvious, but those capabilities are also important components of medical response—for example, transportation of civilian medical assets, general and medical evacuation, and basic services such as food and water delivery (especially for populations in isolation) and sanitation.

It is also widely recognized that DoD possesses unique capabilities due to its combat preparedness that may be useful in responding to domestic terrorist attacks or other crises. For example, these capabilities may include detection and decontamination of agents, treatment and evacuation of contaminated casualties, and robust preventive medicine capabilities. In short, DoD assets that are of value to civil authorities have fallen into two general categories: *more support* and *different kinds of support.* The former category refers to those assets that are present in both the civilian and medical health systems, such as medical professionals; the latter category refers to the unique capabilities of DoD. These distinct types of assistance may require different planning strategies.

Criteria for guiding future civil support planning fall into two groups. These criteria can aid in planning on two levels, as discussed in more detail in Chapter Five.

The first group of criteria, for determining which assets or capabilities should be centrally controlled or locally controlled, is as follows:

- The speed with which the asset needs to be deployed
- The cost of the asset

- The mobility of the asset
- The probability that the asset will be used at the local level in non-crisis situations.

The second set of criteria, for determining whether it is prudent to plan for a particular capability to be provided by the military (given the limitations to consider when planning for military support, as discussed in Chapter Two), is as follows:

- Whether or not the asset is "dual use" between military and civilian settings
- Whether or not the asset has a low probability of use in civilian settings
- Whether or not the asset would be required immediately in a crisis.

Are there appropriate military medical assets and related planning processes for civil support?

As discussed above and as borne out by recent events, it is clear that certain military medical assets could be of significant utility in providing support to civil authorities. Planning such support, however, is currently problematic.

DoD's joint planning process is optimally designed for deliberate planning of combat campaigns. This is not to suggest that this process has no value in planning for military support for civil authorities. The difficulty for DoD lies in determining the responsibility for such planning: DoD is wholly responsible for planning wartime missions and does so by developing appropriate requirements, based on guidance from the president and secretary of defense. But DoD does not control the planning for a national response to a domestic incident, and therefore cannot promulgate the guidance to determine response requirements.

Planning for military support for civil authorities is hindered mostly by the absence of a robust process by which the states and localities can articulate beforehand their range of potential requirements for federal support, even broadly, including medical assistance, in the event an incident occurs. States and localities' requests for assistance historically have been reactive—such requests normally are made under the provisions of the Federal Response Plan after a natural disaster has occurred or some other emergency has been declared.

Until such requirements can be determined with greater certainty *before* an incident, MSCA planning in DoD will be conducted primarily on a reactionary basis. Because a set of requirements that would be suitable for deliberate, longer-range planning does not exist, DoD's abilities to identify appropriate capabilities and to prepare for conducting effective and efficient MSCA missions is limited. Consequently, DoD has not been able to identify to any useful degree the units or other assets needed to meet potential support requirements. No units have been assigned a mission responsibility for MSCA (other than National Guard WMD-CSTs); therefore, the equipment and personnel in units that may be called on to respond to a domestic incident may not be entirely appropriate, and requests for assistance likely will continue to be met on an ad hoc basis. Further, the difficulty in deliberate planning is compounded by the lack of a comprehensive civil-support training program that could be imbedded in individual and unit training systems because no units have been provided with budgetary authority to expend resources related to civil-support missions.

What are the legal (and other) barriers to military assistance to civil authorities, and how can those barriers be overcome, if necessary?

This study included a legal review to assess the current status of all relevant statutory and regulatory authorities and restrictions and case law interpretation of those statues and regulations. The historical case studies and exercises discussed in Chapter Five and Chapter Six, respectively, also provided evidence on nonlegal barriers.

There is ample authority for the use of the military domestically, including provision of military medical support to states and localities in the event of a terrorist attack. Except for some minor clarifications to statutes and regulations, no major new authority is necessary. Additionally, sufficient safeguards are in place to prevent any abuse of discretion in the employment of military assets for providing such support to civil entities. Nevertheless, there is some cause for concern about potential liability on the part of DoD and individual service members for negligence on the part of decisionmakers or military personnel in the conduct of civil support activities.

Nonlegal barriers also constrain effective military support—confusion inside the military and in civilian jurisdictions regarding the authority, capabilities, and appropriate role of the military domestically and cultural barriers between the military and civilian entities. It appears that the greatest nonlegal barrier to deliberate, effective, long-range planning for military support is the lack of a comprehensive pre-event requirements identification process in support of the national strategy.

Recommendations

In this section, we provide policy recommendations, with the intent to inform the nation's and DoD's homeland security efforts and to improve the ability of the states, DoD, and other federal entities to plan and coordinate potential medical civil support in the future.

A process for accurately determining requirements for military support to civil authorities must be established if DoD is to plan and participate in response activities more effectively.

This recommendation is predicated on the assumption that DoD will be requested to provide medical support to civil authorities in the future. A 2003 investigation by the GAO suggests that, at least for the threat of bioterrorism, shortfalls in the civilian medical infrastructure and in medical personnel will continue to exist in the United States and may be difficult to rectify in the near term.[1] Therefore, DoD likely will be requested, as part of an overall federal response, to provide medical assistance in the future as it has done in the past.

A comprehensive requirements identification process for MSCA missions is for the most part nonexistent. Creating a process for identifying the potential response requirements of government entities at various levels logically will be a task for DHS, not DoD. Nevertheless, DoD certainly will need to be involved in developing such a process so that requirements potentially can be translated into military civil support missions, when appropriate and when approved, and so that the units or other assets required to conduct those missions can be identified. The ASD(HD) should be the focal point for coordination within DoD

[1] GAO, *Bioterrorism: Preparedness Varied Across State and Local Jurisdictions*, Washington, D.C.: U.S. General Accounting Office, GAO-03-373, 2003c, pp. 17–22.

(particularly with the ASD for Health Affairs for medical matters) and between DoD and DHS in the effort to develop a national requirements identification process.

The NRP and National Incident Management System, currently being established by the DHS and other Executive Branch agencies pursuant to HSPD-5, include provisions for the generation of potential requirements well in advance of actual incidents. The successful implementation of such plans could improve DoD internal planning for civil support.

As stated above, this research provides principles for determining preconditions that may prompt requests for federal assistance and also provides some planning guidelines for determining the source of response capabilities. While these principles and guidelines are not a panacea for the difficulties in MSCA planning, they are intended to be useful in a scenario-based process to determine requirements and to plan, however generally at first, national response strategies.

It is essential that the planning process that is implemented to identify requirements and the potential capabilities to meet those requirements be done collaboratively (e.g., within DoD, between the DoD and state, local, and other federal authorities). A collaborative process is the method that is most likely to promote a common understanding, common terminology, and clear process for determining potential shortfalls, requirements, and available capabilities.

Military medical force structure should not be reduced further pending a comprehensive assessment of domestic military mission requirements.

A recent GAO report recommended that "DoD assess domestic military mission requirements and determine what steps should be taken to structure U.S. forces to better accomplish domestic military Missions."[2] DoD responded that it does not believe an independent review is necessary, and that any such changes will be determined through the ongoing force management processes that will culminate with the 2005 QDR.

Given the lack of a robust process to determine requirements, it would be difficult, at best, for DoD to independently assess requirements for military support to civil authorities. Nevertheless, DoD should play a significant role in the development of such a process so that it may conduct an internal assessment of its domestic role in the future. Until that time, it may be prudent to avoid a reduction in medical force structure, given the uncertain magnitude of any future MSCA requirement, which may be significant. As a corollary to this recommendation, the role of the reserve components in providing support to civil authorities should continue to be examined, as the secretary of defense recently directed.[3]

It is possible that an internal DoD assessment of its domestic role following the identification of MSCA requirements could result in greater efficiency than the DoD's current method of contingency planning for and execution of MSCA missions. This possibility assumes a future level of MSCA activity that is comparable to the current level of activity. This is an area that requires further detailed study.

The skills and materials required to provide health care in military settings are similar to those required in civilian settings. For example, physicians in civilian hospitals and mili-

---

[2] GAO, *Homeland Defense: DoD Needs to Assess the Structure of U.S. Forces for Domestic Military Missions*, Washington, D.C.: U.S. General Accounting Office, GAO-03-670, 2003d, p. 4.

[3] DoD, "Rebalancing Forces," memorandum from the secretary of defense, Washington, D.C.: U.S. Department of Defense, July 9, 2003.

tary physicians in MTFs practice medicine similarly and are held to the same certification standards. Certainly, some medical requirements are more specific to the military, such as the treatment of contaminated casualties, but these requirements are in addition to the MHS mission of providing quality care to beneficiaries. Additionally, the MHS organizes, equips, and trains diligently for the treatment of combat casualties, which is essentially a medical crisis response that is also practiced in the civilian trauma medicine sector but not as consistently among civilian facilities and medical professionals.

Therefore, it is possible that a deliberate planning process built upon MSCA requirements will result in the identification of MSCA-related medical capabilities that are already present in the MHS. If this happens, then DoD's current planning for combat and related contingency operations may already cover much of the spectrum of medical MSCA requirements, and perhaps only a modest change or addition to structure or training requirements will be needed.

In short, it is possible that in conducting its two primary missions—the readiness mission and the benefits mission—the MHS can also satisfy many MSCA preparedness requirements. To put it another way, explicitly including MSCA requirements in deliberate planning processes may actually result in little change for the MHS, but may in fact result in more efficient support to civil authorities than the support from ad hoc response. It is also possible that training for MSCA may benefit military operations in which DoD medical assets serve foreign civilian populations, whether in a hostile or humanitarian setting. These observations assume little change in the extent of military support to civil authorities in the future. However, allocation of units among combat and related contingency missions and MSCA missions requires a policy decision about the appropriate role of the military.

More comprehensive DoD guidance, doctrine, and training will be needed to include support missions as the missions are identified.

Little definitive guidance has been given to DoD or promulgated within DoD for military support to civil authorities. The most recent QDR notes the importance of homeland security (and related homeland defense and civil support missions of DoD) but provides little in the way of definitive guidance on MSCA (see Appendix F of this report).[4] Such guidance provides the impetus for the planning and development of structure, doctrine, and training. As MSCA requirements are determined, and DoD subsequently assesses its domestic role and identifies various missions, more definitive guidance will be required to support such planning and development.

Additionally, several current DoD directives contain provisions for providing support to civil authorities.[5] Unfortunately, the definitions used in these various directives have created a confusing jumble of terminology—military assistance to civil authorities, military support to civil authorities, military support to law enforcement agencies, and others—some of which are often used synonymously. Discussions with senior DoD officials indicated that the family of related directives may be combined and republished following the issuance of definitive guidance. We encourage this course of action and further recommend that the resulting document be made widely available to civilian authorities.

---

[4] DoD, *Quadrennial Defense Review Report,* Washington, D.C.: U.S. Department of Defense, September 30, 2001, available at http://www.defenselink.mil/pubs/qdr2001.pdf, accessed September 25, 2003.

[5] A summary of each directive is contained in Appendix C.

APPENDIX A

Interview Protocol

This study included interviews with officials at many levels of government and within the private sector. The interviews were conducted from summer 2001 through fall 2002. To foster more open discussion, the following interview protocol was used.

- Describe the primary mission of your organization.
- Describe the role of your organization in responding to CBRNE attacks in the United States.
- Is this a documented mission? Is there documented guidance or doctrine?
- What are the capabilities of your organization for responding to crises such as CBRNE terrorist attacks?
- How has this role/mission changed in recent years?
- Is your organization resourced for and capable of executing this mission? What are the medical-related capabilities your organization can offer to support response activities?
- Do you think this role/mission is appropriate?
- Are there other organizations with this mission or a similar mission?
- What does your organization do to prepare for this mission?
- How does your organization interface with other local/state/federal/nongovernmental organizations for this mission (e.g., in preparation, execution)?
- Can you give examples of how your organization has been involved in similar missions or exercises in the past?
- What are the greatest obstacles for your organization in responding to crises such as disasters or CBRNE terrorist attacks?
- Is there anything you would like to add?
- Is there anyone else we should talk to?

APPENDIX B

Organizations Interviewed and Exercise Participants

For this study, we interviewed numerous experts inside and outside of government. In addition, the exercises described in Chapter Five involved many participants, including local, state, and federal emergency response officials, policy advisors, and medical practitioners.

The following list specifies the offices and titles of our interview subjects and exercise participants. Some of these individuals served in both capacities. The inclusion of a particular office, including its principal members, generally indicates the involvement of a number of professional staff members in that office.

U.S. Department of Defense

Office of the Secretary of Defense

Office of the Assistant Secretary of Defense (Health Affairs)
- Deputy Assistant Secretary of Defense for Force Health Protection and Readiness, and Director, Deployment Health Support
- Director, Homeland Security
- Director, Contingency Planning Policy
- Health Policy Operations Staff

Office of the Assistant Secretary of Defense (Reserve Affairs)
- Deputy Assistant Secretary of Defense (Military Assistance to Civil Authorities) and Staff

Office of the Assistant Secretary of Defense (Special Operations/Low Intensity Conflict)
- Chief of Staff, Research and Development (Medical)

Defense Research & Engineering, Deputy Assistant to the Secretary of Defense/Chemical & Biological Defense
- Director and Operations Staff

Office of General Counsel
- Associate Deputy General Counsel (Health Affairs)

TRICARE Management Activity
- Acting Chief of Staff

The Joint Staff

Directorate for Logistics, (J-4), The Joint Staff
- Director and Staff
- Chief, Medical Readiness Division, and Staff

Joint Program Office—Biological Defense

Program Manager and Operations Staff
Joint Vaccine Acquisition Program (JVAP)
Director

Unified and Specified Commands

U.S. Joint Forces Command
Deputy Command Surgeon
Joint Regional Medical Planners
Joint Task Force—Civil Support
Chief of Staff
J-5 and Staff
Command Surgeon, Deputy Command Surgeon, and Staff
U.S. Northern Command
Chief, Medical Operations
U.S. Transportation Command
U.S. Joint Forces Command Medical Liaison Officer

Department of the Air Force

The Surgeon General and Staff
Assistant Surgeon General, Medical Readiness, Science and Technology
Wilford Hall Medical Center
Defense Coordinating Officer(s), Travis Air Force Base

Department of the Army

The Surgeon General and Staff
Anthrax Vaccine Immunization Program, Director and Staff
U.S. Army Medical Research & Materiel Command
Commander
Program Manager, Medical Materiel Development Activity
Medical Research Institute of Infectious Diseases
Chief, Product Development and Regulatory Affairs
Chief, Regulatory Affairs, Office of Regulatory Compliance and Quality
Southeast Regional Medical Command
Chief, Plans, Operations, Training and Security
Office of the Chief, U.S. Army Reserve
Deputy Chief, War Plans Division
U.S. Army Forces Command
Deputy Command Surgeon, and Command Surgeon Staff
Headquarters, U.S. First Army
Medical Planning
Soldier and Biological Chemical Command
Commander, Chemical Biological Incident Response Team
Domestic Preparedness Office
Director of Military Support
Plans Branch Staff

Department of the Navy

The Surgeon General and Staff
Navy Staff
    Deputy Director, Medical Resources, Plans and Policy
National Naval Medical Center, Bethesda
    Director, Office of Healthcare Operations and Planning
    Associate Director for Administration for Homeland Security

U.S. Department of Defense—Other

Armed Forces Medical Intelligence Center
National Guard Bureau
Uniformed Services University of the Health Sciences

U.S. Department of Energy

Radiological Assistance Program, Region 7
Livermore National Laboratory
    Radiological Assistance Program

U.S. Food and Drug Administration

Center for Biologics Evaluation Research
    Director and Operations Staff

U.S. Department of Health and Human Services and U.S. Public Health Service

Acting Assistant Secretary for Public Health Emergency Preparedness
Centers for Disease Control and Prevention
Regional Health Administrator (Southeast)
Office of Emergency Preparedness

U.S. Department of Homeland Security

Border and Transportation Security
    Bureau of Immigration and Customs Enforcement
U.S. Coast Guard
    Regional Emergency Transportation Representative
    Pacific Area Exercises
Federal Emergency Management Agency

U.S. Department of Justice

Federal Bureau of Investigation
- Special Agent in Charge (Sacramento)

U.S. Department of Transportation

Regional Emergency Coordinator

U.S. Department of Veterans Affairs

Medical Center Director
Emergency Management Strategic Healthcare Group
- Clinical Training Manager

The State of California

Office of the Governor
- Deputy Chief of Staff
- Legal Affairs Secretary
- Press Secretary

Office of Emergency Services
- Director, Deputy Director, and Staff
- California Specialized Training Institute
  - Director and Staff
- Coast Region Administrator
- Fire and Rescue
  - Deputy Chief(s)
- Law Enforcement
  - Director
- Legal Counsel
- Plans Unit
- Planning and Technical Assistance Branch
  - Chief
- Public Affairs
  - Chief
- Senior Radiation Coordinator

Emergency Medical Services Authority
- Director and Chief Deputy Director
- Chief, Disaster Medical Services

Environmental Protection Agency
- Assistant Secretary

Department of Health Services
- Director and Associate Directors

- Emergency Preparedness
  - Assistant Deputy Director
- Food, Drug, and Radiation Safety
  - Division Chief
- Health and Bioterrorism Policy
  - Deputy Director
- Homeland Security—Drinking Water Field Operations
- Prevention Services
  - Deputy Director
- Radiologic Health Branch

California Highway Patrol
- Chief and Assistant Chief(s)
- Emergency Operations
  - Commander

Office of Homeland Security
- Director

Department of Justice
- California Anti-Terrorism Information Center and Staff
  - Assistant Chief
  - Situation Unit

California Army National Guard
- Plans, Operations, and Security
  - Director and Staff

CALTRANS
- Director and Deputy Director

The State of Florida

Department of Health
- Office of Emergency Operations
  - Chief

The State of Georgia

Office of the Governor
- Executive Counsel
- Deputy Policy Director

Georgia Bureau of Investigations
- Assistant Director
- Director, Legal Services

Georgia Department of Defense
- The Adjutant General and Staff
- Commander, Georgia Army National Guard
- Director, Joint Operations

Georgia Emergency Management Agency
- Director
- Director of Operations

Georgia Homeland Security Task Force (principal members)

Department of Human Resources
- Director

Division of Public Health
- Medical Director, Bioterrorism
- Director, Atlanta Regional Health Response System
- State Epidemiologist
- Chief, Notifiable Disease Unit

Department of Natural Resources
- Commissioner

Department of Public Safety/Georgia State Patrol
- Commissioner and Deputy Commissioner
- Director of Legal Services
- Program Coordinator, Public Affairs

Georgia Technology Authority

Department of Transportation
- Deputy Commissioner
- Director of Operations
- Emergency Response Management

Cobb County
- Fire and Emergency Services
  - Fire Chief (also Georgia Homeland Security Task Force Representative)
  - Sheriff

Fayette County Fire and Emergency Services
- Fire Chief

City of Morrow
- Fire Chief

The State of Hawaii

Department of Health, State Emergency Medical Services and Injury Prevention
- Program Manager

Nongovernmental, Academia, and Private Sector Organizations

Georgia Sheriff's Association
- Director

Memorial Hermann Hospital Emergency Center, Houston, Texas
- Medical Director

Sam Nunn School of International Affairs, Georgia Institute of Technology
Coca-Cola Foundation Eminent Practitioner in Residence (Professor)
University of California, Davis, Health System School of Medicine
Director, Health Physics Programs

APPENDIX C

DoD Directives Related to Civil Support

Title: DoD Directive 3025.1, *Military Support to Civil Authorities (MSCA)*, January 15, 1993.

Summary: This directive consolidates all policy and responsibilities previously known as *Military Assistance to Civil Authorities*—which are applicable to disaster-related civil emergencies within the United States, its territories, and possessions—with policies and responsibilities related to attacks on the United States, which previously were known as *Military Support to Civil Defense.*

Available at: http://www.dtic.mil/whs/directives/corres/html/30251.htm[1]

Title: DoD Directive 3025.12, *Military Assistance for Civil Disturbances (MACDIS),* February 4, 1994.

Summary: This directive updates policy and responsibilities for planning and response by DoD for military assistance to federal, state, and local governments (including the governments of U.S. territories) and their law enforcement agencies for civil disturbances and civil disturbance operations, including response to terrorist incidents. Those activities are referred to cumulatively as *Military Assistance for Civil Disturbances.*

Available at: http://www.dtic.mil/whs/directives/corres/html/302512.htm

Title: DoD Directive 3025.13, *Employment of Department of Defense Resources in Support of the United States Secret Service,* September 13, 1985.

Summary: This directive updates responsibilities regarding the production, issuance, use, and disposition of Explosive Ordnance Disposal technician credentials. It establishes DoD policy governing the use of DoD resources to support the U.S. Secret Service, in performing its protective duties.

Available at: http://www.dtic.mil/whs/directives/corres/html/302513.htm

Title: DoD Directive 3025.15, *Military Assistance to Civil Authorities (MACA)*, February 18, 1997.

Summary: This directive establishes DoD policy and assigns responsibility for providing military assistance to civil authorities. It supersedes the Secretary of Defense memorandum "Military Assistance to Civil Authorities" dated December 12, 1995. It also cancels the Deputy Secretary of Defense memorandum "Support of Civil Authorities in Airplane Hijacking Emergencies" dated July 29, 1972, and cancels Army Regulation 385-70/Air

[1] All Web site references in this appendix are as of September 3, 2003.

Force Regulation 55-13/Navy Instruction 3710.18B, *Unmanned Free Balloons and Kites, and Unmanned Rockets*, dated December 13, 1965.

Available at: http://www.dtic.mil/whs/directives/corres/html/302515.htm

Title: DoD Directive 3025.16, *Military Emergency Preparedness Liaison Officer (EPLO) Program,* December 18, 2000.

Summary: This directive was issued to (1) establish military Emergency Preparedness Liaison Officer program policy and program guidance governing the use of reserve component members in providing military support and assistance to civil authorities and (2) establish DoD policy for the management of EPLO programs in each of the military departments.

Available at: http://www.dtic.mil/whs/directives/corres/html/302516.htm

Title: DoD Directive 5525.5, *DoD Cooperation with Civilian Law Enforcement Officials,* January 15, 1986.

Summary: This directive reissues DoD Directive 5525.5, March 22, 1982, to update uniform DoD policies and procedures to be followed with respect to support provided to federal, state, and local civilian law enforcement efforts, and it assigns responsibilities within the DoD for that support.

Available at: http://www.dtic.mil/whs/directives/corres/html/55255.htm

Title: DoD Directive 6010.22, *National Disaster Medical System (NDMS)*, January 21, 2003.

Summary: This directive defines the role of the MHS by establishing DoD policy for participation in the National Disaster Medical System, a joint federal, state, and local mutual-aid organization for coordinated medical response, patient movement, and definitive inpatient care in time of war or in the event of a U.S. national emergency or major domestic disaster.

Available at: http://www.dtic.mil/whs/directives/corres/html/601022.htm

APPENDIX D

Materials Used in Georgia Exercise

This appendix contains a copy of materials used by participants in the Georgia smallpox-attack exercise. We provided this material to illustrate the general exercise design and methodology used in both the Georgia and California exercises described in Chapter Six.

EXERCISE

"The Day After... in Georgia"

A Bioterrorism Medical Emergency Response Contingency Planning Exercise

Specific organizations, systems, or system components appearing in this material are presented as examples and their appearance implies no unique capability or vulnerability. Attribution to any organization or entity shall not be made as a result of the text contained herein.

22 October 2002

RAND

Georgia Emergency Management Agency – State Operations Center
Atlanta, GA

"The Day After…in Georgia"

Agenda

Georgia Emergency Management Agency - State Operations Center
22 October 2002

0800 – 0830	• **Registration** • **Continental Breakfast**	Outside Plenary Room
0830 – 0835	• **Welcome** • **Exercise Objectives**	Plenary Room
0835 – 0905	• **Summary Briefings** – **Federal Emergency Response Services** – **Georgia Emergency Response Services** – **Exercise Methodology** – **Future History & Step One Situation Report**	Plenary Room
0905 – 0910	• **Transition time**	-
0910 – 1010	• **Step One Deliberations (60 min.)**	Breakout Rooms
1010 – 1030	• **Step One Plenary Reporting and Discussion**	Plenary Room
1030 – 1045	• **Coffee**	-
1045 – ~1135	• **Step Two Deliberations (~ 50 min.)**	Breakout Rooms
~1135 – ~1200	• **Working Lunch**	-
~1200 – 1300	• **Step Three Deliberations (~ 60 min.)**	Breakout Rooms
1300 – 1345	• **Step Two and Step Three Plenary Reporting and Discussion**	Plenary Room
1345 – 1355	• **Coffee**	-
1355 – 1510	• **Step Four Deliberations (75 min.)**	Breakout Rooms
1510 – 1520	• **Coffee**	-
1520 – 1630	• **Step Four Plenary Reporting and Discussion** • **Prospective Federal and State Action Plans**	Plenary Room

Contents

"The Day After... in Georgia"

Georgia Emergency Management Agency State Operations Center (GEMA-SOC)

Atlanta, GA

22 October 2002

Tab A	***Exercise Methodology***
Tab B	***Future History***
Tab C	***Exercise Step One***
Tab D	***Exercise Step Two****
Tab E	***Exercise Step Three****
Tab F	***Exercise Step Four***
Tab G	*Glossary and Abbreviations*
Tab H	*Georgia Emergency Response Services Summary*
Tab I	*Federal Emergency Response Services Summary*
Tab J	*Exemplary Bioterrorism Agents*
Tab K	*Incident Command System*
Tab L	*Selected Legal Issues*

(*Tabs D and E to be provided on site)

Note: Grayed-out tabs were included in Exercise but not in this document

Exercise Methodology (cont.)

EXERCISE OBJECTIVES

The goal of the "The Day After…in Georgia" medical emergency response contingency planning exercise – and the associated U.S. Department of Defense (DoD)-sponsored research effort – is to bring together key local, state, and federal government emergency response officials, policy advisors, and practitioners to:

- Assess the capability of U.S. DoD medical resources for supporting response to civil emergency contingencies emerging from terrorist attacks on civilian targets, with a particular emphasis on large-scale terrorist attacks – and issues related thereto;

- Provide an opportunity for identifying and addressing *other* local, state, or regional issues or shortcomings growing out of potential terrorism-based civil contingencies;

- Recommend specific operational templates that can be used by military and civilian response entities to plan for and respond to those terrorism-related contingencies that could overwhelm local or state resources; and

- Identify organizational relationships and structures – and related potential issues for decision at both the federal and state level – that could, in the event of such contingencies, result in more effective and efficient coordination between: (1) the U.S. DoD and other federal organizations and (2) state and local civilian organizations.

The key objectives for this final senior-level exercise are:

(1) To confirm emerging key issues related to the above objectives (as developed over the exercise design and testing period) and

(2) To gain senior-level consensus on a near-term plan of action to address these issues in relevant government jurisdictions (and within the private sector).

BACKGROUND

Recent events and assessments of future threats suggest that the United States should prepare to respond to possible chemical, biological, radiological, nuclear, conventional explosive (CBRNE) and cyber attacks inside its borders.
The *National Strategy for Homeland Security*[1] released in July 2002 provides an overall national strategy for defense against such CBRNE attacks on the U.S. homeland. It significantly expands previous Federal guidance and policy for combating terrorism including that contained in Presidential Decision Directive 62, which gave certain responsibilities to the FBI and FEMA. Importantly, it eliminates the use of "crisis management" and "consequence management" calling them "an artificial and unnecessary distinction."[2]

The new *National Strategy for Homeland Security*, along with the pending legislation to create a Department of Homeland Security (DHS), further define basic roles and

---

[1] Available at http://www.whitehouse.gov/homeland/book/index.html.

[2] *National Strategy*, p. 42.

Exercise Methodology (cont.)

responsibilities for federal government organizations, with increased emphasis on well-coordinated and integrated civilian preparedness at all levels – Federal, State, local, and private.

In this context, the extreme demands on local, state, and national medical resources that could result from any large-scale CBRNE attack need to be addressed. Chemical or biological terrorist attacks pose particular near-term high-priority problems in the light of current threat assessments. It has been well documented that few public health entities and metropolitan or even regional civilian medical organizations and facilities are prepared to deal with a crisis situation involving large numbers of casualties caused by such agents.

The problems likely to be encountered in CBRNE attacks of concern include:

- Reporting. Civilian medical personnel are in general not well trained to recognize most symptoms related to chemical or biological agent exposure. The national system for reporting infectious diseases is slow and potentially inadequate to contain possible pandemic (??) consequences resulting from a biological attack.

- Command and Control. Existing command structures at the local and state level have little experience in meeting the challenging law enforcement, public health, and medical services coordination problems that would occur in any large-scale attack.

- Medical Infrastructure. Many medical facilities do not have adequate infrastructure or pharmaceuticals to immediately deal with any infectious (especially contagious) biological agent or a contaminating chemical substance (e.g. lack of isolation rooms, decontamination equipment, chemical antidotes, or protective clothing and equipment).

- Security/Legal. Many civilian medical facilities could be overwhelmed in a large CBRNE attack by patients seeking medical care and diagnosis. Medical facilities often lack security plans to restrict access in such circumstances, to isolate infected individuals, or to quarantine those possibly infected. Civilian authority and control techniques, and the legal basis for such actions, are not yet well developed.

The U.S. DoD's medical and medical services logistical assets could in principle play a crucial role in augmenting civilian resources in the response to a domestic CBRNE attack that produced problems such as those cited above. In its mission to prepare for modern warfare, the U.S. DoD has planned and exercised medical techniques and strategies for management of chemical warfare (CW) and biological warfare (BW) casualties on the battlefield, as well as dealing with various kinds of nuclear contingencies. For example, U.S. DoD assets include chemical and biological agent detection capabilities; deployable and fixed medical facilities; and methods and resources to effect rapid vaccination of large numbers of individuals or treat large numbers of contaminated patients.

Exercise Methodology (cont.)

U.S. DoD medical resources have also historically been deployed to assist civilian authorities in natural disaster relief. U.S. DoD has also provided medical support for non-traditional military deployments such as those to Haiti, Kosovo, and Somalia – missions that share many characteristics likely to be encountered following a CBRNE attack inside the United States.

But will U.S. DoD medical resources be available to assist in civilian emergencies? Might the prevailing international political-military environment so profoundly affect military planning and actions that only certain U.S. DoD medical assets would be available for homeland contingencies, and then only on restricted timelines? This dimension is clearly an important element in the kind of contingency planning process that is addressed in this exercise.

To date, no systematic review has been undertaken within the federal government of the full spectrum of federal medical assets – and in particular the substantial assets of the military services – that might be marshalled to help manage the consequences of a large CBRNE attack on the U.S. homeland. In addition, communications on this subject within and between the individual military services; between the services and other federal agencies; between the federal government and non-federal civilian government authorities; and between the government entities and the private sector have not been robust. This exercise and the underlying research effort that it supports are intended to address those issues.

From a local and state perspective, there is an additional interest in seeing how currently emerging and/or evolving emergency response plans – in most cases currently tailored to terrorist CBRNE attacks at the lower and mid-range of contemplated possibilities – fare when placed in the context of an attack that is clearly too large (or may become too large) to be handled by available local or regional civilian emergency response and public health assets. Examining the process of accessing federal medical resources, and understanding the capacity of federal response to a medical system facing overwhelming numbers of ill and worried well, should prove extremely useful to state and local officials. In the case of this exercise, the experience of homeland security officials at all levels working through an exercise simulating a challenging bioterrorism attack, thinking through the complex issues of local, state, and federal response to this event, and using the information to develop and revise state and local response plans will clearly benefit the citizens of Georgia.

In this context, achievable U.S. DoD adjustments in communication, planning, organization, training, staffing, and related matters could result in significant enhancements in:

- Relevant military thinking and the development of useful operational concepts and
- The fostering of far greater flexibility and adaptability at all levels in applying military medical resources to aid and enhance civilian consequence management of prospective large-scale terrorist threats and attacks.

DEFINITIONS

There are a number of terms that are employed in dealing with the matters addressed in this exercise that are known to have significant histories – and resulting associated issues of *definition*. The unavoidable use of these terms in both the written material and in the exercise deliberations runs the risk of (unknowingly) introducing unrecognized ambiguities or nuances in usage that could interfere with the course of the deliberations. With this in mind, the material below addresses terms or terminology issues that fall in this category.

Exercise Methodology (cont.)

"Terrorism"

> One of the many challenges in dealing with the terrorism threat is the historical ambiguity in the definition of the term. Many different definitions of a *terrorist*, a *terrorist act*, and *terrorism* have been set forth, tailored to specific situations, studies, or political agendas. In light of this situation, an effort has been made in recent years to develop a generally accepted working definition of the term, focusing on the act of terrorism without reference to the perpetrator.

The *National Strategy for Homeland Security* characterizes terrorism[3] as:

> (A)ny premeditated, unlawful act dangerous to human life or public welfare that is intended to intimidate or coerce civilian populations or governments.

The document goes on to explain:

> This description captures the core concepts shared by the various definitions of terrorism contained in the U.S. Code, each crafted to achieve a legal standard of specificity and clarity. This description covers kidnappings; hijackings; shootings; conventional bombings; attacks involving chemical, biological, radiological, or nuclear weapons; cyber attacks; and any number of other forms of malicious violence. Terrorists can be U.S. citizens or foreigners, acting in concert with others, on their own, or on behalf of a hostile state.

With this basic definition, *international terrorism* is an act perpetrated across borders or on a foreigner within the perpetrator's country. *Domestic terrorism* is perpetrated in the attacker's country of origin against a domestic target.

"CBRNE" vs. "WMD"

The term *"weapons of mass destruction" (WMD)* was introduced early in the Cold War as a catch-all for nuclear, chemical, and biological weapons. It was initially championed by the Soviet Union in arms control arenas – to mixed reviews – and has enjoyed an off-again/on again popularity in and around U.S. government circles. In 1996 the Nunn-Lugar-Domenici Act defined a "weapon of mass destruction" as "any weapon or device that is intended, or has the capability, to cause death or serious bodily injury to a significant number of people through the release, dissemination, or impact of: (A) toxic or poisonous chemicals or their precursors; (B) a disease organism; or (C) radiation or radioactivity."

For reasons of clarity, this exercise will use the term *CBRNE (chemical, biological, radiological, nuclear, and conventional explosives),* in preference to the potentially ambiguous term, WMD. For example, a terrorist attack on a chemical facility using a conventional device could cause "mass destruction," but may not necessarily involve the use of a weapon as described in the WMD definition provided above. Significantly, the attacks on September 11, 2001 caused

---

[3] *National Strategy*, page 2.

Exercise Methodology (cont.)

"mass casualties" and "mass destruction" within any reasonable interpretation of those terms, but do not fit any traditional "WMD" definition.

"Quarantine" and "Isolation"

For purposes of this exercise:

> *Quarantine* is the restriction of the activities of *healthy* persons who have been exposed to a case of communicable disease during its period of communicably to prevent disease transmission during the incubation period if infection should occur.
>
> *Isolation* is the separation, for the period of communicability, of *known* infected persons in such places and under such conditions as to prevent or limit the transmission of the infectious agent.[4]

Under Georgia law, the Department of Human Resources is "empowered" to:

> 4) Isolate and treat persons afflicted with a communicable disease who are either unable or unwilling to observe the department's rules and regulations for the suppression of such disease and to establish, to that end, complete or modified quarantine, surveillance, or isolation of persons and animals exposed to a disease communicable to man. [5]

ISSUES

The emerging spectrum of potential terrorism-related CBRNE medical emergency issues – and related exercise experience to date – support consideration of the following broad issue areas as potentially appropriate for an exercise with the above objectives:

- Specific Operational Issues
  - Alert and Warning – the interrelationship among various national, regional, and local actions and arrangements for alert and warning of possible attack;
  - Attack Assessment – assessing the magnitude of the initial attack and whether others have taken place or could soon take place;
  - Damage Assessment – assessing direct post-attack damage to the civilian population and other civilian targets, including uncertainties in collateral damage;
  - Command and Control – examining issues relating to command and control in those contingencies where engagement of the military health system is likely, with attendant issues of communications, coordination, prioritization, and allocation of resources;
  - Operational Rules – the operational rules of engagement to be provided to individuals in various leadership or other key operational positions (e.g., triage, crowd control, quarantine, and other medical and law enforcement matters); and

---

[4] "Isolation and Quarantine in an Era of Bioterrorism," James G. Hodge, Jr., J.D., LL.M., May 2, 2000.
[7] Georgia Code, Section 32-2-1.

Exercise Methodology (cont.)

  - Public Affairs/Education – the responsibility and process for timely preparation, vetting, and presentation of public affairs information and other educational materials.

- Potential DoD Contributions

  - Overall Strategy – the overall approach to allocating and employing the medical assets of the active forces~~,~~ and the Reserve Components, including the National Guard; and

  - Relevant DoD Medical Capabilities – identifying and assessing the utility of potentially available U.S. DoD medical capabilities in meeting those specific medical shortfalls likely to emerge in the event of a large-scale CBRNE attack.

- Information Sharing Issues

  - Intelligence – the potential need for new federal guidance on the sharing of information and analysis on threat, indications and warning, and related matters; and

  - Private Sector Arrangements – the likely need for prior understandings between the government and private sector entities on information sharing arrangements.

- Legal Issues

  - State and Federal Legal Regimes – the application of the respective Georgia and U.S. federal (and possibly local) legal regimes in various contexts.

It is clear that there is substantial overlap in several of the above broad issue areas, that some are relevant in more than one jurisdiction, and that all of the issues cannot be treated in depth in an exercise of the length planned. Issue prioritization is thus of special concern.

In this context, it was decided that the most appropriate organizational framework for addressing and prioritizing issues in the exercise should be the decision-making forum or venue in which comparable real-world issues would go to closure. Issues are thus classified as: (1) Federal Government Issues or (2) State/Interstate Issues. Local (i.e., municipal/metropolitan area) issues and private sector issues are incorporated in the last category where appropriate.

AN ANALYTIC FRAMEWORK

There is a clear need for an analytic framework for considering potential terrorism-related medical emergency response operations in various stages or environments. Such a framework needs to present issues in:

(1) Peacetime, i.e., the basic day-to-day environment;

(2) Pre-crisis, i.e., when something with terrorism implications is stirring, either internally in the U.S. or internationally;

(3) Crisis, i.e., escalation to a much more threatening environment with tensions high but as yet no terrorism event, and

Exercise Methodology (cont.)

(4) Post-event, i.e., the emergency response (and recovery) environment.

Figure A-1 provides a depiction of the these environments for two basic cases in which terrorist event(s) might take place:

(1) In the context of some escalating political-military crisis (e.g., in a crisis in the Middle East) (Blue line in Figure A-1) and

(2) Where there is essentially no warning prior to the attack (Black line in Figure A-1).

In the former case, the perceived level of crisis from a terrorism vantage point would presumably escalate along with an escalating political-military crisis. Local and state medical emergency response communities will obviously need different approaches to planning for these two distinct contingencies.

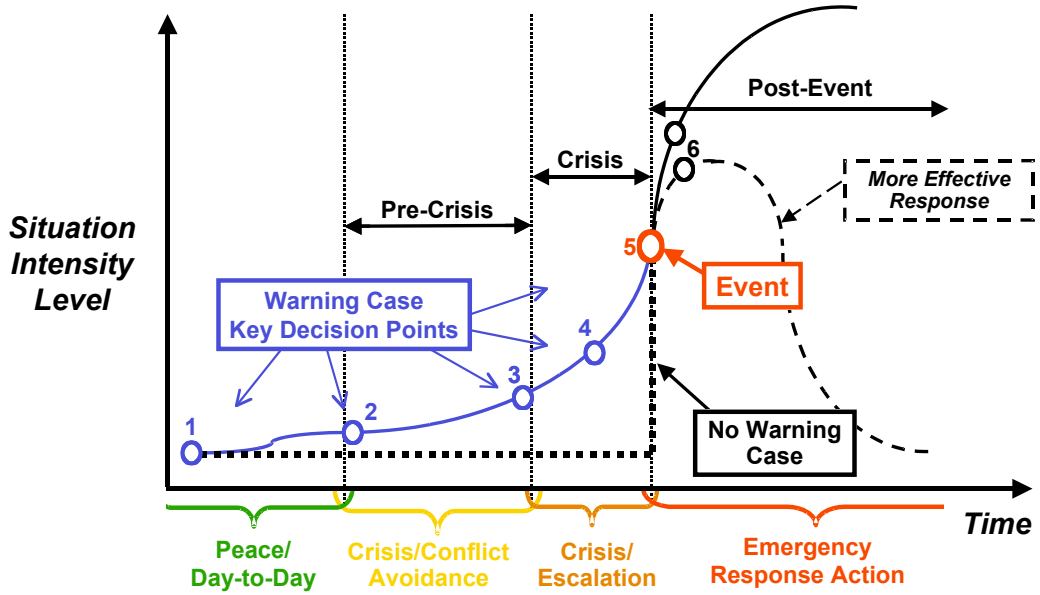


Figure A-1. The Peace-Crisis-Event Terrorism Timeline

It is clear that decisions made on the basis of early warning could be very important. Similarly, decisions made in the period immediate after an event is manifest (Point 5 in Figure A-1) and in the immediate post-event period (e.g., Point 6) when the magnitude of the attack is presumably or hopefully becoming clearer, are also crucial.

The broad objectives of medical emergency response efforts in such a conceptual context could be characterized as:

(1) To the degree possible, contribute to reducing the likelihood that a major terrorism-related crisis or attack would take place and

Exercise Methodology (cont.)

(2) If such an attack does take place, to reduce the magnitude or impact of the resultant medical emergency (note the post-event dashed line labelled "More Effective Response" in Figure A-1).

EXERCISE

The primary "Exercise" component of this four-step exercise consists of Tabs A, B, C, and F of this book (aided by a Glossary at Tab G). Tab B contains a "Future History" which takes the exercise scenario from today through August 2003. Tab C contains Step One of the exercise (set in September of 2003). Tabs D and E contain Steps Two and Three of the exercise (both set in November 2003) and will be distributed during the exercise. Tab F contains Step Four of the exercise, set in the present.

This book also contains summary descriptions of terrorism-relevant medical emergency response services for the state of Georgia (Tab H) and the federal government (Tab I). Tab J provides basic material on Exemplary Bioterrorism Agents. Tab K provides information on the Incident Command System. Tab L provides material on Selected Legal Issues.

BASIC STEPS IN THE EXERCISE

After the Future History/Step One summary briefing (see Agenda), participants divide into three groups and go through the four steps in the exercise (see Agenda and Figures A-2 and A-3). For each of the four steps, the tasking for the individual groups (see below) is *exactly the same*. Note in the Agenda that the groups compare the results of their deliberations in plenary reporting sessions at the end of the first, third and fourth steps of the exercise.

The four basic steps in the exercise are as follows:

Step One – "Pre-Crisis" phase (September 2003). The individual groups, each constituted as the *ad hoc "Task Force on Medical Services,"* established in Georgia to address a looming terrorism problem (and nominally made up of GA Homeland Security Task Force members plus federal representatives), will: (1) *finalize a draft* of an issues presentation and decision-making document that is to be the principal basis for the discussions at upcoming federal and state decision-making meetings and (2) *make recommendations* on the issues presented where consensus on a course of action can be achieved.

Step Two – "Crisis/Trans-Event" phase (November 2003). The basic tasking for the individual groups, again constituted as the *ad hoc "Task Force on Medical Services,"* but now working in a crisis/trans-event environment (approximately Point 5 in Figure A-1) is essentially the same as in the first step: (1) *finalize a draft* of a multi-jurisdictional decision-making document and (2) *make recommendations* on a course of action on individual issues where consensus is achievable.

Step Three – "Post-Event" phase (later in November 2003). The basic tasking for the individual groups, again constituted as the *ad hoc "Task Force on Medical Services,"* but now working in a challenging post-event environment (approximately Point 6 in Figure A-1), is essentially the same as in the first two steps.

Exercise Methodology (cont.)

Step Four – Lessons Learned/Implications stage of the exercise. Return to the present day. Participants reflect on the crisis scenario experience, identify and prioritize those issues that warrant current action and/or further examination in appropriate jurisdictions, and seek consensus on a course of action on the highest priority issues.

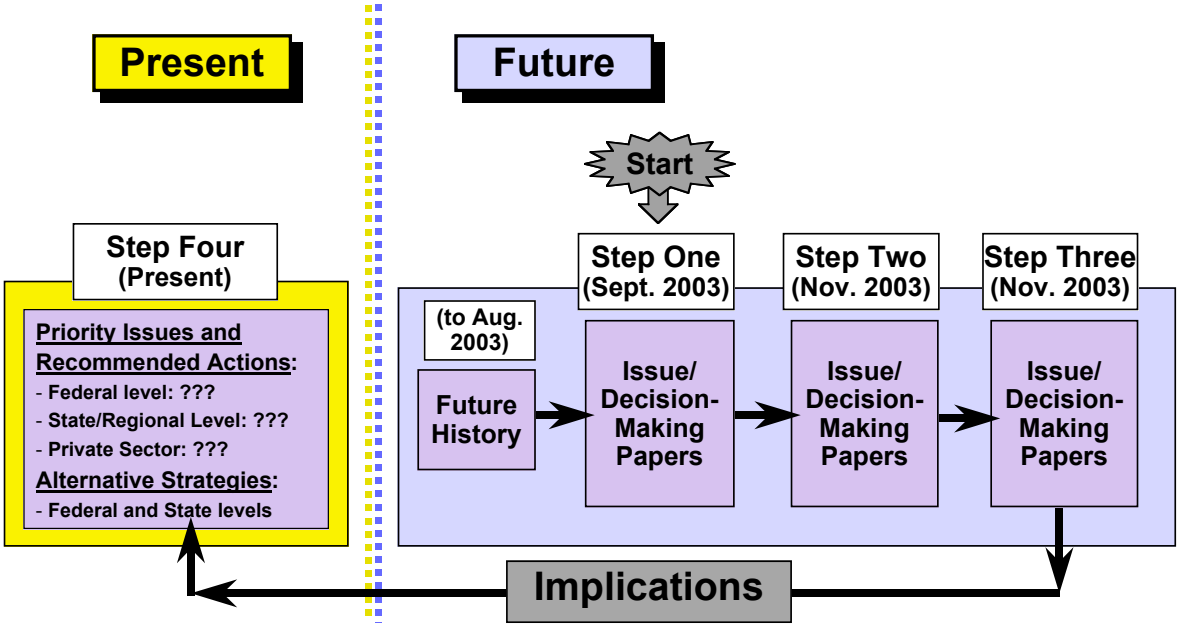


Figure A-2. Exercise Methodology

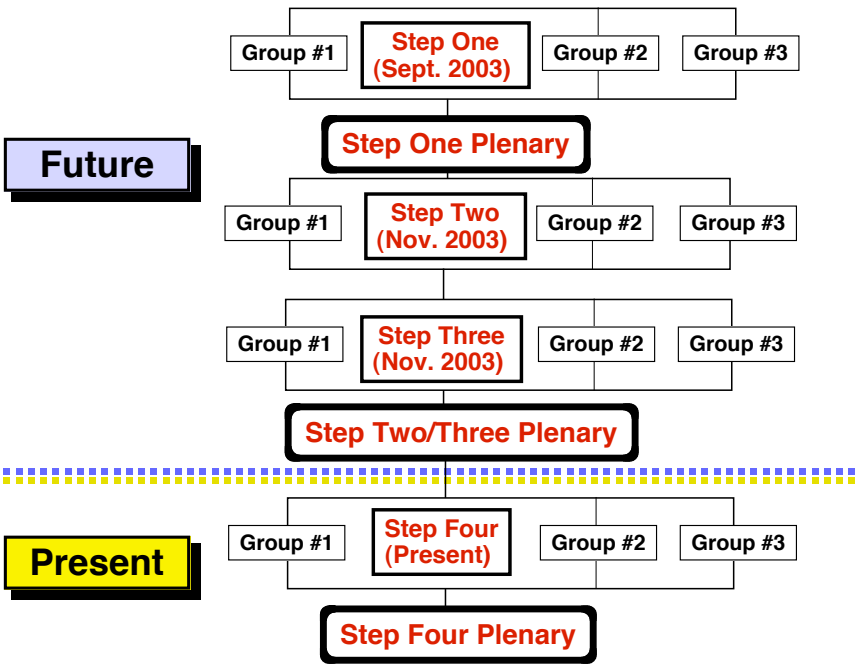


Figure A-3. Group Deliberations and Plenary Sessions

Tab B
Future History (October 2002 - August 2003)

MAJOR INTERNATIONAL POLITICAL-MILITARY DEVELOPMENTS (October 2002 - August 2003)

THE WAR ON TERRORISM

The post-9/11 U.S. effort to mobilize the international community in a global effort to combat the growing threat of terrorism has focused on thwarting the efforts and diminishing the capabilities of global terrorist organizations and in particular Al Qaeda. As a result of these efforts, by the summer of 2003 a broad global counterterrorism effort was well underway, albeit with as yet still limited success.

Al Qaeda

- Al Qaeda is steadily reconstituting and known to be collaborating with a variety of worldwide transnational criminal organizations (TCOs). The extent of its ability to organize and carry out major attacks at this point in time is highly contentious within both the intelligence and law enforcement communities.
- There is increasing evidence that both Iran and Iraq have been sheltering members of the Al Qaeda leadership as well as an unknown number of Al Qaeda fighters who successfully escaped Afghanistan.

Other Potential Sources of Terrorism Against the United States and Its Allies

- There is a renewed concern about the activities of domestic terrorist groups inside the United States and the possibility that some of these groups might make common cause with foreign terrorists or take advantage of terrorist acts to pursue independent agendas.

SOUTH ASIA

Afghanistan

- In spite of many problems, the Karzai-led interim government continues to make slow but steady progress toward establishing a viable national unity government.

Pakistan and India

- Recent UK-brokered discussions are providing hope that the long-standing Kashmir dispute might at last be heading toward resolution.

SOUTHEAST ASIA

Indonesia

- Separatist movements in several regions are renewing pressures for independence – taking advantage of the growing instability in the country caused by the actions of extremist Islamic groups to renew pressures for independence.

Philippines

- The Abu Sayyaf Group (ASG) has continued to survive in spite of repeated counter insurgency operations by the Philippine military, aided by U.S. and Australian advisors.

Future History (cont.)

GREATER MIDDLE EAST

Israel and Palestine

- After a particularly violent recent period in the Israeli-Palestinian relationship a one-month old cease-fire continues to hold and a new round of peace negotiations is scheduled to begin in early September.

Saudi Arabia

- Al Qaeda cells in Saudi Arabia continue to elude neutralization by internal security forces, raising questions about the regime's commitment to the global counterterrorism effort.
- U.S.-Saudi relations remain difficult both because of continued Saudi opposition to an attack on Iraq and strong Saudi domestic support for the Palestinian cause.

Iran

- Western political and economic initiatives to broaden the rapprochement with Iran have remained stalled since Iran's inclusion in the "axis of evil."
- Iran has been weak in responding to U.S. and European pressure to halt support for Hezbollah, raising concerns about Tehran's commitment to countering terrorism.

NORTHEAST ASIA

North Korea

- The concern about future developments in North Korea introduced by Pyongyang's October 2002 admission that it was building a uranium isotope enrichment facility and January 2003 withdrawal from the Non-Proliferation treaty has not subsided.

South Korea

- South Korea, Japan, and the United States have all leaned on Pyongyang to resolve the issue but to date to no avail – with resultant continued tensions in the region.

THE "HOME FRONT"

Major U.S. Government Organizational Developments

- The Department of Homeland Security (DHS) was formally established in March 2003. The major government entities incorporated in the final DHS design included:
  - The Federal Emergency Management Agency (FEMA), the Coast Guard, the Customs Service, the Immigration and Naturalization Service (INS), the Transportation Security Agency (TSA), the Animal and Plant Health Inspection Service (from USDA), the National Domestic Preparedness Office and the National Infrastructure Protection Center (NIPC) (both from the FBI), and the Office of Domestic Preparedness (from DOJ)
- The Office of Homeland Security (OHS) in the White House was retained to serve in a direct advisory capacity to the President and ensure government-wide integration and coordination as called for in the National Strategy for Homeland Security.
- DHS has assumed the responsibility for developing a national plan for responding to a major bioterrorism attack involving highly communicable diseases.

Future History (cont.)

Major Department of Defense Organizational Developments

- Within the U.S. DoD, the following steps were taken to prepare for the possibility of providing military support to the civilian sector (including medical support) in the event of a large CBRNE attack within the United States:
  - The new NORTHCOM combatant command was established 1 October 2002, with the mission to prevent terrorist attacks within the United States, reduce the U.S. vulnerability to terrorism, and minimize damage and assist in recovery from terrorist attacks.
  - All requests for civil support now channel through NORTHCOM, which includes both Joint Task Force-Civil Support (JTF-CS) and JTF-Homeland Security (JTF-HS), both formerly standing JTFs under Joint Forces Command (the force provider to the combatant commands).
  - The functions of the Director of Military Support (DOMS), who served as the Army Secretary's executive agent for military support to civil authorities under previous arrangements, will transition to the Joint Staff.
  - The Defense Planning Guidance (DPG) continues to emphasize that the primary DoD mission is still to fight and win America's wars abroad; as such, no (Title 10) military units have as yet been primarily designated for civil response missions.

Terrorism-Related Incidents

- (January 2003) A possible major bioterrorism attack was averted when Canadian immigration officials detained a Syrian national who was carrying detailed maps of two U.S. health research facilities that maintain supplies of plague and directions for producing significant quantities of the agent.
- (March 2003) The arrest of six members of a Missouri militia group narrowly averted an attack on the Whiteman Air Force Base (home to 150 nuclear-armed ICBMs).
- (April 2003) A misdiagnosis of chicken pox as smallpox at a major Nashville hospital (involving a Delta Airlines pilot and his family) led to a twenty-hour unwarranted quarantine of the hospital and almost led to a companion closing of Grady Hospital in Atlanta. A subsequent series of lawsuits resulting from diverted patients and the professional repercussions (and a similar but more quickly resolved incident a month later in San Francisco involving plague) left health officials throughout the country cautious about raising bioterrorism false alarms.
- (June 2003) Marginal evidence of a possible terrorist plan to launch major sarin attacks on U.S. mass transit systems with underground subway stations on the Fourth of July leaked to the press, cutting subway use in Washington, Philadelphia, New York and other major cities by 30-50 percent on the Fourth.
- (August 2003) twelve members of an Alabama militia group were arrested after they were discovered preparing homemade mortars for shells that, based on sketches and purchase orders, appeared to be designed to hold cyanide pellets and a chemical reagent.

The False Alarm Problem

- The frequency of DHS-announced alerts at various levels – seven in the past ten months, all apparently false alarms – has been the source of growing public grumbling and unease, and easy grist for late-night comics.
- It is recognized that providing warning of possible CBRNE terrorist attacks is a very difficult challenge for DHS as the organization responsible for the integration and synthesis of the available intelligence information. However, DHS is still seen as needing to do much better with the warning task for fear it might become a historic "boy who cried wolf" with tragic future consequences.

Tab C
Step One Situation Report (September 2003)

In September 2003 we see an emerging show of strength by Al Qaeda and associated Islamic organizations in SE Asia and Africa. The situation in the Middle East begins to heat up, both in terms of a possible U.S. move against Iraq and the difficulty of keeping a new Israeli-Palestinian peace initiative on track. Events transpire to raise the issues of: (1) whether measures need to be taken to heighten CBRNE awareness or defenses and (2) whether key medical emergency response entities are as ready as they could be for a possible bioterrorism attack.

September 2003

Manila (September 1) – The Air Traffic Control Center (ATC) for the Manila region is badly damaged by a terrorist bomb quickly attributed by authorities to the Abu Sayyaf Group (ASG), aided by Al Qaeda elements operating out of Indonesia.

Madrid (September 4) –Negotiations between the Israeli government and the Palestinian Authority resume in Madrid.

Iraq (September 6) – In a fiery anti-American speech Saddam Hussein cites the "extreme vulnerability of the U.S. homeland" as a factor that "should deter any ill-conceived U.S. actions in the Middle East."

Washington (September 8) – Intelligence intercepts reveal the possible existence of a planning cell involving Al Qaeda and Iraqi intelligence operatives. The cell appears to be focused on developing the capability to "strike behind the lines" in the United States with biological and chemical agents to demonstrate U.S. vulnerability.

Indonesia (September 9) – The Australian Ambassador reported information indicating that Islamic extremists in Indonesia, aided by funds and other support from Al Qaeda, will soon increase the magnitude and character of their anti-government activities.

Washington (September 9) – DHS issued a national advisory regarding the possibility of terrorist action on September 11 "in major U.S. cities" and raised the terrorism alert level to ORANGE. Security is dramatically increased security at airports, major ground transportation nodes, and other key infrastructure sites across the country, and key sites in New York and Washington.

United States (September 11) – There are no terrorist events of any kind on September 11.

Washington, New York, and Nationwide (September 12-14) – Major media outlets call attention to the September 11 alert as the latest in a long list of government-issued heightened alerts which have turned out to be false alarms. Some editorials question whether the actual terrorist threat is really as great as has been portrayed over the period since 9/11/01. DHS defends its policy of issuing alerts based in large measure on intelligence information regarding possible terrorist objectives or plans as opposed to concrete evidence of plans that have actually been set in motion.

Step One Situation Report (cont.)

Manchester, UK (September 15) –Police raid the offices of a radical Islamic study group whose files list an unusually large number of doctors and other medical personnel. The raid provides information indicating that the organization had received funds from Al Qaeda front organizations in Saudi Arabia and Egypt.

Washington (September 16) – Clandestine sources via Switzerland and France suggest that the Iraq biological weapon program is being aided by an unexpectedly large contingent of former Russian scientists and may earlier this year have obtained a sample of smallpox.

Tel Aviv (September 20) – A hotel and high-rise apartment are badly damaged by truck bombs with nearly 30 killed and over 100 wounded. Within hours, Israel conducts a series of fighter and helicopter gunship attacks against targets in the West Bank.

Madrid (September 21) – In spite of the terrorist actions in Israel and the Israeli military response the negotiations in Madrid, to the surprise of many, continued in session.

Washington and London (September 22) – U.S. and British intelligence services report that the Iraqi leadership believes that, barring unforeseen circumstances, a U.S.-led military attack on Iraq sometime in the next few months was “virtually inevitable.”

Baghdad (September 24) – Saddam Hussein rejects a major part of the latest UN inspection proposal as “a U.S.-led effort to collect intelligence on the Iraqi military.” He also lashes out at the U.S. for its support of Israel and its actions in the region.

London (September 24) – Decrypted communications intercepts enable Scotland Yard to foil a planned attack by Manchester-based Islamic extremists on a key electric power switching station near London and a natural gas pumping station near Manchester. The attack was to include both cyberwarfare elements and conventional explosives and revealed an intimate knowledge of the key nodes in both the electric power and gas distribution systems.

Georgia (September 25) – most of the electric power in the savannah region suffers a two-hour **failure** as a result of a corruption in the control system of a major generating plant followed by an unexplained cascading failure in backup systems. Responsibility is attributed to outside penetration of a recently updated security system. Failure to identify the perpetrator raises a concern that the system could be deliberately taken down again and severely disrupt the deployment of U.S. forces from the port of Savannah.

Washington and London (September 25) – The two governments' intelligence services agree that “worrisome signs” point to a possible period of renewed Al Qaeda efforts against the United States and those who are supporting the effort to replace the Iraqi regime.

Washington (September 29) – A newly analyzed series of National Security Agency (NSA) intercepts reveals that planning has been underway for some time by two Al Qaeda cells, one in Germany and one in the UK, to develop the capability to launch bioterrorism attacks against “the U.S. military and its great cities.” Several members of the German cell have been identified but their current whereabouts is unknown.

Step One Situation Report (cont.)

The intercepts also indicate that six major U.S. cities – Atlanta, Boston, Dallas, New York, Seattle, and Los Angeles – and nearby military bases are believed to be the prime targets. On the recommendation of the Secretary of the DHS, emergency videoconferences are scheduled with local and state officials and relevant law enforcement and emergency response personnel in all of the cities and their respective states.

A private message from the DHS Secretary to the Governor of Georgia indicates that the intelligence includes "some information" that increases the likelihood that Atlanta is "a preferred target" because of its reputation for being "better prepared" in the wake of its experience with security for the Olympics and other major sporting events.

Washington and Atlanta (September 29) – At a hastily arranged videoconference, a select group of high-level federal, state, and local officials assessed the recently acquired intelligence information on a possible bioterrorism threat against Atlanta, including:

- In Washington, the Secretary of DHS; the Director of FEMA; the Deputy Secretary of Defense; the Deputy Secretary of HHS, the Deputy Director of the FBI, and the Director of the Office of Homeland Security in the White House and

- In Atlanta, the Governor of Georgia; the Georgia Adjutant General; the Georgia Commissioner of Public Safety; the Director of the Georgia Homeland Security Task Force; the Director of the Georgia Division of Public Health; the Director of the Georgia Emergency Management Agency; the Director of FEMA's Region IV office; the Special Agent in Charge of the Atlanta FBI office; the Director of the Georgia Hospital Association (GHA); and the Deputy Director of CDC.

After considerable discussion the group agreed that coordinated decision-making was urgently needed at the federal, state, and local levels to address the medical services dimension of the local and regional response to the prospective threat. On this basis the group made the following decisions:

- Intelligence collection and surveillance efforts would be substantially increased in Savannah, the Atlanta metropolitan region, and throughout Georgia,

- On an urgent basis, representatives of the Georgia Homeland Security Task Force and appropriate representatives of the federal government (hereinafter the *ad hoc Georgia Task Force on Medical Services)* should: (1) review and update current state and federal plans for responding to CBRNE attacks and (2) develop a recommended list of medical services issues that need to go forward for decision at this time in federal and state (and possibly local) venues or jurisdictions.

- The *ad hoc Task Force* should also provide recommendations on the issues sent forward for decision – where consensus on such can be achieved – and also provide its views an overall medical services strategy for the situation presented.

After further discussion it was agreed that the ad hoc Task Force would be meet at 0900 the next day, September 30, in Atlanta. By late on September 29, a draft of the issues to be addressed in the various venues had been prepared by staff of the members of the ad hoc Task Force.

Step One
Instructions

STEP ONE INSTRUCTIONS: HOW TO PROCEED

1. You will have sixty minutes to complete your deliberations on Step One.

2. You will be in the role of a member of an ad hoc Georgia Task Force on Medical Services (made up of members of the GA Homeland Security Task Force plus selected federal representatives) responding to a tasking by senior state and federal officials regarding medical services preparations for a possible bioterrorism attack on Atlanta.

3. The group's task is to complete a Memorandum on Issues for Decision to be considered in the near-term at various federal, state, and local venues. A draft memorandum with this objective has been prepared by staff and is provided on the following pages.

4. The group leader will begin the discussion of the memorandum by asking several members of the group to give their individual perspectives (their "take") on the overall situation as presented, focusing on the basic challenges and possible issue priorities in various venues.

5. The group leader will move quickly to the draft memorandum and attempt to find a consensus within the group on:

(i) The appropriateness of the candidate issues for decision that have been provided (including the possible need for additional issues for decision),

(ii) Recommendations on a course of action on the individual issues put forward, and

(iii) A recommended overall strategy for the situation.

6. The group leader will summarize the group's deliberations and its recommendations on individual issues and overall strategy in the Step One plenary session, starting with its conclusions on overall strategy.

Step One
Draft Memorandum: Issues for Decision

30 September 2003

MEMORANDUM FOR: **The Secretary of the Department of Homeland Security**
The Governor of Georgia

FROM: **Director, Ad Hoc Georgia Task Force on Medical Services**

SUBJECT: **Medical Services Issues Related to Emerging Terrorist CONCERNS**

OVERVIEW

This memorandum responds to the recently obtained intelligence information raising the prospect that an al Qaeda terrorist cell – possibly operating in league with or under the direct guidance of Iraqi intelligence – may plan to launch biological attacks against selected U.S. cities, including possibly Atlanta.

This situation raises the question as to whether the current level of preparedness and capabilities of the medical services community in Atlanta and the state of Georgia is adequate to deal with a major biological attack on the city or the state. This memorandum addresses a possible need at this time to adopt further defensive or preparatory measures against the prospect of such an attack. (It should be noted that we have no concrete information on the kind of biological agent that might be used in the potential attacks of present concern.)

It is recognized that the evolving situation in the Middle East complicates the question of supplementary medical assistance possibly being provided by the U.S. Department of Defense (DoD).

It should also be noted that there was a still unexplained cyber attack on a Southeastern Georgia Power facility that remains unexplained and could conceivably be of concern in this context.

ISSUES

This memorandum identifies a set of issues that the ad hoc Task Force on Medical Services believes warrants near-term attention from decision-makers.

Candidate issues for decision have been divided into two basic issue categories: Federal Government Issues (i.e., issues involving the U.S. DoD and other federal entities) and State/Interstate Issues. Local issues and private sector issues are included where appropriate in the latter category.

Draft Memorandum (cont.)

CANDIDATE ISSUES FOR DECISION

Federal Government Issues

1. Information Sharing: Is there a need for additional GA local and state emergency planners and public health officials – beyond those who already have SECRET clearances (e.g., the GA Homeland Security Task Force and top GA state officials) – to have access to SECRET-level classified intelligence information on the emerging bioterrorism threat? If so, who needs to be given such access?
    - ___ Key Atlanta metropolitan area elected officials
    - ___ Key state public health officials
    - ___ Key state emergency management officials
    - ___ _____
    - ___ _____
    - ___ Not at this time.

2. Information Sharing: Is there a need for selected local and GA state emergency planners and public health officials *who already have SECRET clearances* to have access to more highly classified intelligence information (TOP SECRET and above) on the emerging bioterrorism threat? ? If so, who needs to be given such access?
    - ___ The Governor
    - ___ The Adjutant General
    - ___ The Director of Public Safety
    - ___ _____
    - ___ _____
    - ___ Not at this time

3. Planning: Should a deliberate federal-state planning process for a possible bioterrorism attack on Georgia be initiated at this time – to involve relevant federal entities (e.g., DHS, HHS, and NORTHCOM) and GA state law enforcement and public health officials?
    - ___ Yes. The effort should be led by _____.
    - ___ Not at this time

4. Preparations: Should DHS undertake an assessment of the federal medical assets available in the National Pharmaceutical Stockpile and other facilities in the southeastern U.S. region with ready access to Atlanta (and other recently identified potential targets in areas where there could be medical service shortfalls)? If so, what medical asset assessments are the most important? *(Identify the top two or three.)*
    - ___ Vaccination capacity
    - ___ Vaccine availability (in NPS)
    - ___ Antidotes to chemical agents (in NPS)
    - ___ Prophylaxes (in NPS)
    - ___ Diagnostic capability (in state labs and elsewhere)
    - ___ Hospital medical resources and staff
    - ___ Evacuation capability
    - ___ Isolation and quarantine capability
    - ___ _____

Draft Memorandum (cont.)

[Other Federal Issues?]: _____

_____

_____

_____

_____

_____

State/Interstate Issues

1. Planning: Should the state initiate a planning and coordination process for possible law enforcement and National Guard enforcement of various types of quarantine and isolation in the event of a bioterrorism attack, e.g., in the Atlanta metropolitan area?
   - ___ Yes. This effort should be coordinated by _____
   - ___ Not at this time

2. Preparations: Should local Georgia public safety officials and the private sector (e.g., private hospitals and clinics) be notified that a bioterrorism attack could take place with attendant challenges to law enforcement and other public safety matters?
   - ___ Yes. This effort should be coordinated by _____
   - ___ Not at this time

3. Preparations: Should the state of Georgia – rather than the federal government (see Question 4 above) – undertake an assessment of the federal medical assets available in the National Pharmaceutical Stockpile and other facilities in the southeastern U.S. region with ready access to Atlanta?
   - ___ Yes (See list on previous page)
   - ___ Not at this time

4. Preparations: What information-sharing systems should be exploited as a high priority to effect the above assessment of medical assets?
   - _____
   - _____

5. Communications: Does the state of Georgia urgently need to better develop the means and metrics – the templates – by which it might convey medical needs or shortfalls to the federal government in the event Atlanta is the victim of a major terrorist attack that overwhelms available medical services?
   - ___ Yes. This effort should be led by:
     - _____ The Director of Public Safety
     - _____ The Director of the Division of Public Health
     - _____ _____
   - ___ Not at this time

Draft Memorandum (cont.)

6. Media/Public Information: In the event there is a major bioterrorism attack, or the imminent threat of such an attack, is there a need to clarify:
    - Who will approve public service and other medical emergency announcements? It will be:
        - _____
        - _____
        - _____
    - Who will be given an opportunity to review public service and other medical emergency announcements? It will be:
        - _____
        - _____
        - _____
        - _____

7. [Other State Issues?]: _____
_____
_____
_____
_____
_____
_____

Overall Strategy:

The recommended overall strategy in this situation is:

_____

_____

_____

_____

_____

_____

Step Two Situation Report

RESULTS OF THE SEPTEMBER 30, 2003 VIDEOCONFERENCE

Federal Government Issues

1. Information Sharing: There is no need at this time for additional GA local and state officials to have access to SECRET-level classified intelligence information on the emerging bioterrorism threat.

2. Information Sharing: There is no need at this time for local and state officials who already have SECRET clearances to have access to TOP SECRET and higher intelligence information on the emerging bioterrorism threat.

3. Planning: A deliberate federal-state planning process for a possible bioterrorism attack on Atlanta should be initiated at this time, to be led by DHS.

4. Preparations: DHS should undertake an assessment of the medical assets available in the south-eastern U.S. region in the NPS and elsewhere in the following medical areas of principal interest (noted by "x") with the top priorities as noted (by "X"):
   - _X_ Vaccination capacity
   - _x_ Vaccine availability (in NPS)
   - ___ Antidotes to chemical agents (in NPS)
   - ___ Prophylaxes (in NPS)
   - _x_ Diagnostic capability (in state labs and elsewhere)
   - _x_ Hospital medical resources and staff
   - _X_ Evacuation capability
   - _X_ Isolation and quarantine capability

State/Interstate Issues

1. Planning: The state of Georgia should initiate a planning and coordination process for possible law enforcement and National Guard enforcement of various types of quarantine and isolation in the event of a bioterrorism attack, e.g., in the Atlanta metropolitan area.

2. Preparations: Local public safety officials and the private sector (e.g., private hospitals and clinics) should not be notified at this time that a bioterrorism attack could take place with attendant challenges to law enforcement and other public safety matters.

3. Preparations: The state of Georgia should undertake an independent assessment of the federal medical assets available in the National Pharmaceutical Stockpile and other facilities in the southeastern U.S. region with ready access to Atlanta.

4. Preparations: The information-sharing systems to be exploited as a high priority in such an assessment of medical assets are: (1) _____ and (2) _____ _____.

Step Two Situation Report

5. Communications: The state of Georgia should make an effort to refine the existing means and metrics by which to convey medical shortfalls to the federal government in the event of a major terrorist attack. The Director of the Division of Public Health should lead this effort.

6. Media/Public Information: In the event there is a major bioterrorism attack, or the imminent threat of such an attack, public service and other medical emergency announcements will be approved by the Governor or his designee. The GA Homeland Security Task Force will be given an opportunity to review all public service announcements.

Step Two Situation Report (cont.)

October - November 2003

Philippines (October 20) – US and Australian naval forces launched a raid with assault helicopters against Abu Sayyaf Group (ASG) elements based on Jolo Island in support of major cross-island push by the Philippine Army. Later that day the Philippine Minister of Defense announced that the entire senior leadership of ASG had been killed.

Indonesia (October 23) – Several American nationals are murdered by "hit-squads" with a series of communiqués claiming that the attacks were in retaliation for American military support in the "murder of Abu Sayyaf" in the Philippines.

Paris (October 25) - The British Prime Minister and the French President in a joint press conference following talks about expanding military cooperation announce their grave concern about growing intelligence evidence that Iraq has accelerated a clandestine program to develop nuclear weapons and may be producing biological weapons."

Savannah (October 28) - Local television media report that the 3rd Infantry Division (Mechanized) has called an alert and requested all service personnel to return to base. Several local commentators stated that the 3rd Division was being prepared to "go to war against Iraq." The public affairs officer of the division deflected any questions by the local and national media to the Pentagon.

Atlanta (October 31) – The Governor of Georgia activates and deploys 1500 members of the Georgia Department of Defense (aka National Guard) to Savannah for protection of the port and nearby nuclear facilities.

Washington, (November 2) – A National Security Agency intercept indicates a "high likelihood' that Al Qaeda agents carrying biological agents were "already settled" inside the United States.

The Attack on Georgia

November 4, 2003

A young man leaves the Five Points MARTA station late in the evening rush hour and yells, "Stay home America!" to the people entering the station and disappears into the crowd. The incident is reported the next day in an Atlanta Journal Constitution gossip column as "the kind of thing that makes you a little nervous these days."

November 13, 2003

Patient 1: A 23-year-old female student at Georgia State University presents to Emory Clinic with a fever, chills, and headache. She was out of town recently and gives a history of a sister with the "flu". A nasopharyngeal swab for influenza is performed. She is sent home with instructions to call for results, and with Tylenol with codeine for pain and fever.

Step Two Situation Report (cont.)

Patient 2: A 40-year-old Atlanta police officer presents to Georgia Baptist with fever 102 and vomiting. He improves with antiemetics and is sent home with a diagnosis of viral syndrome.

Patient 3: A 42-year-old businessman is seen at Gwinnett Medical Center with a fever, headache and backache and vomiting. He had been on a recent business trip to Africa, and is admitted with a presumptive diagnosis of malaria.

November 15, 2003

Patient 1 presents to Emory University Hospital with continued fever, and a rash on her face and arms. She is admitted for observation with diagnoses of possible chickenpox versus drug allergy (she had taken codeine.) The influenza test from her previous visit was negative.

After releasing 8 people from DeKalb Medical Center's ER with impression of influenza, an emergency room doctor leaves a message with the hospital infection control nurse asking if the flu season is more severe than previously projected.

Patient 2 is brought into Grady by ambulance, now with fever, severe headache and rash, and is admitted with a presumptive diagnosis of meningitis.

November 16, 2003

An infectious disease consult is obtained on Patient 1 at Emory to verify a diagnosis of chicken pox, and to see if any isolation was warranted. The physician is concerned that this patient appears too ill to have chicken pox, and since he had been hearing a lot on the news about terrorism threats and smallpox, he isolates the patient and calls the Division of Public Health at CDC. The GA Division of Public Health and the CDC coordinate sample collection by a vaccinated laboratory worker (10% of healthcare workers were voluntarily prevaccinated).

At Gwinnett Medical Center, Patient 3 has a negative test for malaria, no response to empirical therapy, and is beginning to develop a papular rash on his face, arms, and legs. Three other patients have appeared with fevers and rashes on their extremities.

At DeKalb Medical Center, the infection control nurse reports that the influenza vaccine matched the circulating type very well this year, and that so far they had only had two documented cases. However, when two patients enter the hospital with fever and rashes on the extremities she calls the local health department about regarding her of a possible influenza or other infectious disease outbreak. She is informed that the health department had also just received a call from the Infectious Disease (ID) doctor at Emory concerning the patient being tested for smallpox.

CDC, local, and state health departments begin an investigation of a possible smallpox case/outbreak in DeKalb County. State public health officials mobilize additional epidemiologists, and request CDC to assist with an Epi-Aid investigation. Staff begin setting up vaccine centers in large unoccupied buildings (e.g., school auditoriums) pre-designated as emergency vaccine centers.

Step Two Situation Report (cont.)

Epidemiologists begin looking for additional patients with rash illnesses or unexplained fever in other metro area hospitals. The FBI is alerted while laboratory confirmation of smallpox in Patient 1 is being done.

Patient 2 dies at Grady with cultures/diagnostic tests negative for *N. meningiditis*, along with other bacterial pathogens. An autopsy is scheduled for the next day.

Washington and Atlanta (November 16) – Essentially the same group of senior federal, state, and local officials that had originally convened on September 29 to discuss the bioterrorism threat to Atlanta and Georgia reconvened on the evening of November 16 via videoconference:

They decided that the *ad hoc Georgia Task Force on Medical Services* established in September should be reconvened in Atlanta on an urgent basis and prepare a recommended list of issues that, in light of current circumstances, need to go forward for decision in relevant government and private sector venues.

It was agreed that the Task Force would be convened at 10:00 am the next morning in Atlanta with instructions to prepare issues for consideration at meetings scheduled for later that afternoon in Washington and Atlanta. By 9:00 am, a draft of the issues to be addressed had been prepared by staff of the Task Force.

Washington (November 16) – Late that night, acting on a request from the Governor of Georgia, supported the Secretaries of HS and HHS and, the President declares a state of emergency for all of the state Georgia based on authority under the Stafford Act.

TAB D
Step Two Instructions

STEP TWO INSTRUCTIONS: HOW TO PROCEED

1. You will have approximately fifty minutes to complete your deliberations on Step Two.

2. You will be in the role of members of the same *ad hoc Georgia Task Force on Medical Services* that convened in September to address the possibility of a bioterrorism attack on Atlanta.

3. You will again be completing a Memorandum on Issues for Decision to be considered at appropriate federal, state, and local venues. A draft of the issues memorandum has been prepared by staff and is provided on the following pages.

4. The group leader will again begin the discussion of the memorandum by asking several members of the group to give their individual perspectives (their "take") on the overall situation as presented, focusing on the basic challenges and possible issue priorities in various venues.

5. The group leader will again attempt to find a consensus within the group on:

   i. Issues to go forward for decision,
   ii. Recommendations on a course of action on individual issues, and
   iii. A recommended overall strategy for the situation.

6. The group leader will summarize the group's Step Two deliberations, recommendations on individual issues, and overall strategy in the Step Two/Three plenary session, again starting with conclusions on overall strategy.

Step Two
Draft Memorandum

17 November 2003

MEMORANDUM FOR: **The Secretary of the Department of Homeland Security**
The Governor of Georgia

FROM: **Director, Ad Hoc Georgia Task Force on Medical Services**

SUBJECT: **Medical Services Issues Related to Emerging Terrorist Concerns**

OVERVIEW

As a result of the suspected case of smallpox at Emory Hospital and the possibility of other cases emerging in the near future, there is an urgent need to address a number of important issues at the federal and state levels. This memorandum addresses this situation and the decisions that in the view of the Ad Hoc Georgia Task Force on Medical Services need to go to closure at this time.

It is recognized that a number of these decisions involve important tradeoffs between: (1) increased preparedness for responding to the consequences of a bioterrorism attack of uncertain magnitude that appears to have already been initiated and (2) the need to avoid an unnecessarily strong response to the information currently available that could lead to public panic and other dire consequences.

CANDIDATE ISSUES FOR DECISION

Federal Government Issues

1. Planning: Should an urgent planning process for responding to a possible bioterrorism attack on Atlanta be initiated at this time – to involve relevant federal Emergency Support Function (ESF) entities and appropriate ESF state law enforcement and public health officials?
   - ___ Yes. The effort should be led by _____.
   - ___ Not at this time

2. Preparations: Should some federal medical assets (including DHHS and military assets) be prepared for possible deployment to the region in the near future?
   - ___ Yes. The following federal assets should be deployed to the region *immediately*:
     - _____
     - _____

     The following assets should be prepared for possible *later* deployment:
     - _____
     - _____
   - ___ Not at this time

Draft Memorandum (cont.)

3. Preparations: Should the National Disaster Medical System (NDMS) be activated?
   - ___ Yes
   - ___ Not at this time

4. [Other Federal Issues?]: _____
   _____
   _____
   _____

State/Interstate Issues

1. Preparations: Should the Governor request smallpox vaccine from the National Pharmaceutical Stockpile (NPS) through the state public health director?
   - ___ Yes
   - ___ Not at this time

2. Preparations: Should governors of neighboring states be alerted to the prospect of quarantine and isolation actions in Georgia?
   - ___ Yes
   - ___ Not at this time

3. Security: Is there a need to supplement the security at Atlanta hospitals?
   - ___ Yes. The following law enforcement entities should be employed:
     - _____
     - _____
     - _____
   - ___ Not at this time

4. Operations: Who should be invited to the Georgia Emergency Management Agency State Operations Center (SOC) to deal with this emerging crisis?
   - ___ GA Division of Public Health
   - ___ GA Division of Transportation
   - ___ GA DoD (National Guard)
   - ___ GA State Patrol
   - ___ _____
   - ___ _____

5. Legal: What operational rules of engagement should guide law enforcement officials in the event it is necessary to isolate infected individuals or impose quarantines on those suspected to be infected?
   - _____
     _____
   - ___ _____
     _____

Draft Memorandum (cont.)

6. Legal: What policy should be adopted with respect to vaccinations against smallpox for public health and emergency management officials?
   - ___ Mandatory
   - ___ Highly recommended
   - ___ Voluntary
   - ___ _____

7. Legal: To whom should this policy apply?
   - ___ Personnel involved with patient care and hospitalization
   - ___ Public safety (including security personnel at hospitals)
   - ___ Law enforcement
   - ___ Fire
   - ___ Emergency management services (EMS)
   - ___ _____

8. Legal: What should be the consequences for individuals in these groups who refuse to accept smallpox vaccinations?
   - _____
     _____

9. Operations: What public safety measures should be taken in the Atlanta metropolitan area with respect to:
   - Schools: _____
     _____
   - Hartsfield Airport: _____
     _____
   - MARTA: _____
     _____
   - Public events: _____
     _____
   - Religious services: _____
     _____
   - Other: _____
     _____

10. Media/Pubic Information: What should be the media strategy in this situation?

    _____
    _____ _____
    _____

Draft Memorandum (cont.)

11. [Other State Issues?]: _____

Views on Overall Strategy:

Tab E
Step Three Situation Report (October 2003)

RESULTS OF THE NOVEMBER 17, 2003 VIDEOCONFERENCE

Federal Government Issues

1. Planning: An urgent federal-state planning process for responding to a possible bioterrorism attack on Atlanta should be initiated at this time, to led by DHS.

2. Preparedness: The following federal assets should be urgently deployed to Georgia at this time:
   HHS Assets: _____
   _____
   DoD Assets: _____
   _____]
   The following federal assets should be prepared for possible later deployment to the region:
   HHS Assets: _____
   _____
   DoD Assets: _____
   _____]

3. Preparations: The National Disaster Medical System (NDMS) should be activated as soon as possible.

State/Interstate Issues

1. Preparations: The Governor should request smallpox vaccine from the National Pharmaceutical Stockpile through the state public health director as soon as possible.

2. Preparations: The governors of Georgia's neighboring states should be alerted to the possibility of small pox-related quarantine and isolation actions in Georgia.

3. Security: At this time, security at Atlanta hospitals should be supplemented by local area law enforcement officials. However, GA State Police troopers should be alerted for possible employment in this effort.

4. Operations: The Georgia Emergency Management Agency SOC should be fully activated. As a minimum, the following GA agencies should send representatives:
   - Division of Public Health
   - Division of Transportation
   - DoD (National Guard)
   - State Police

Step Three Situation Report (cont.)

5. Legal: The following operational rules should guide law enforcement officials in the event it is necessary to isolate infected individuals or impose quarantines:
    - In no circumstances should deadly force be used to maintain the isolation of infected individuals or impose quarantines
    - All other means short of deadly force can be used to maintain the isolation of infected individuals or impose quarantines

6. Legal: Vaccinations against smallpox should be made mandatory for public health and emergency management officials and practitioners.

7. Legal: The requirement for mandatory vaccinations should apply in the following areas:
    - Public health
    - Public safety
    - Law enforcement
    - Fire
    - Emergency management services

8. Legal: Individuals in the above groups who refuse to accept smallpox vaccinations will not be required to deploy to areas where they could come in contact with infected or possibly infected individuals.

9. Operations: Upon receipt of confirmation of smallpox, the following should be closed until further notice:
    - Schools
    - Hartsfield and all other area airports
    - MARTA
    - Public events
    - Religious services
    - Any other activities or facilities that the governor deems justified

Step Three Situation Report (cont.)

November 17, 2003

- CDC confirms smallpox diagnosis. State, local, and federal epidemiologists continue their epidemiological investigation.

- The Governor declares a state of emergency including invoking public health emergency provisions as provided under the authority of Senate Bill 385 and requests smallpox vaccine from the National Pharmaceutical Stockpile.

- On direction of the Governor, all public activities and facilities in the Atlanta area (schools, airports, MARTA, religious services, etc.) are closed until further notice. Travelers from out of state and country are terrified and angered with being forced to remain in the area. The GA DoD (National Guard) is requested to provide security at Hartsfield to deal with growing unrest among stranded passengers.

- Emory University hospital is in effect "closed" to new patients and contact information is obtained on any patient being discharged and any employee ending their shift. Public health officials detain and begin interviewing health care workers who were in close direct contact with Patient 1.

- Emory Hospital is declared to be a "smallpox hospital" by GA Public Health.

- Courts are prepared for the possibility of isolation and quarantine orders and hearings.

- All patients initially discharged from emergency rooms with diagnosis of viral illness are called, and told not to leave their homes pending interview by public health worker.

- Contact investigation by epidemiologists continues. Public health workers interview household and any other close contacts of the smallpox cases using CDC interview forms.

- On initial interview, no common links are found among patients who had presented with a viral illness earlier that week. By now, most have developed a rash. Those not in need of urgent medical care are taken to low acuity care centers set up by the GA Division of Family and Children Services (DFACS); asymptomatic family members are quarantined to their homes.

- GA Public Health reports that hundreds of Atlanta area citizens are now reported to be developing rashes or high fevers. Several people have died with autopsies pending and symptoms leading to suspect smallpox as the cause.

- Doctors at Gwinnett Medical Center notify CDC and the local health department about Patient 3's symptoms and immediately isolate the patient.

- The physicians caring for Patient 2 at Grady request an autopsy; the diagnosis of hemorrhagic smallpox is eventually confirmed.

- Investigation of close contacts of Patient 1 proved difficult, because her three roommates returned to their home states for the holidays.

Step Three Situation Report (cont.)

- Announcements are circulated in area hospitals and HMOs asking for volunteers to teach health department nurses how to give the smallpox vaccine.

- Ring vaccination of contacts of the identified patients begins with limited smallpox vaccine available at CDC.

November 18, 2003

- Additional selective vaccination of the population begins with healthcare workers and contacts of identified cases using vaccine from the National Pharmaceutical Stockpile. Volunteer healthcare workers are sought to assist with the vaccine paperwork and to follow up on adverse effects.

- The Governor of Georgia issues a warning for immuno-compromised people (e.g., those with HIV, diabetes, transplants, heart disease, asthma, TB, etc.) to be especially careful of their actions and contacts.

- State and national media outlets announce that a smallpox outbreak of unknown size is overtaking the Atlanta Metro area. Hundreds of people line up outside hospitals wanting, and in some cases demanding, to be "tested" and vaccinated. Police and emergency workers attempt to control the crowds. An altercation occurs between police and a local epidemiologist who forgot her badge – live on CNN.

- Additional epidemiological investigation of the already **400** confirmed cases and **700** suspected ones point to riding on MARTA downtown on November 4th. Officials contact area offices and businesses to obtain names of people who buy discounted MARTA cards from their employers.

- A public announcement is made by the governor about the possibility that smallpox was released at the Five Points MARTA station on that date.

- By late afternoon, from the numbers provided by various employers and estimates from MARTA workers, it is estimated that 200,000 people passed through the Five Points MARTA station on November 4. An 800 number is provided by the Georgia Poison Center for people who think they were there on that date. Wait times on the line quickly exceed one hour with the expectation that the number would become jammed and unusable by the evening.

- A vaccinated teenaged male with recent HIV diagnosis develops disseminated vaccinia. He dies before VIG is obtained. Healthcare workers who become aware of death begin to refuse vaccination and refuse to come to work. News media reports on the boy's death are judged as likely to be confusing to most people, raising concerns that some citizens may be scared to be vaccinated.

- State and federal officials' investigation and data collection is impeded due to highway gridlock from people trying to leave the city, and people who normally take MARTA driving to work. There is also resultant difficulty transporting patients to Emory, Gwinnett, and DeKalb Medical Centers (now all designated smallpox hospitals).

Step Three Situation Report (cont.)

- CDC is notified of a significant number of confirmed or suspected smallpox cases in New York, Miami, Chicago, and various West Coast cities.

- After a police officer is shot while working security outside Emory University Hospital, the Governor deploys 400 National Guard members to Atlanta to assist with crowd control.

November 19, 2003

- Eighty percent of cases in other states have been interviewed, and most have been in Atlanta around November 4th. Two did not recall such a trip, and with the difficulty in contacting many other cases and contacts, concern develops about whether other releases of smallpox may have occurred in other states.

- Beds in designated hospitals are at capacity. The Georgia Dome is tentatively designated as an alternative care site for mildly ill patients.

- Based on past experience with smallpox outbreaks, public health officials assess the severity of the outbreak as shown in Figure E-1 which shows the number of cases in each medical state on a particular day. The different states are experienced sequentially by an individual in the following order:
    1. Infection
    2. Fever
    3. Rash
    4. Scabs
    5. Survival or Death

  It is assumed that those in the survived category no longer need continuous care and that they are discharged from the facility where care has been taking place.

- Considering possible future demands on medical resources note, for example, that by December 15 it is estimated that there will likely be approximately:
    - 2300 people infected but showing no signs of infection;
    - 600 other people with a fever;
    - 2400 additional people with a rash;
    - 1,600 additional people with scabs;
    - 2,100 people who have survived (and now show no signs of disease), and
    - Over 1,200 who have died (some due to vaccination).

  On this day an estimated 5,000 people will require care at some level.

- The officials also indicated that the total number of cases could reach 10-15,000 even with a successful quarantine and treatment program. There are frequent heated deliberations over how to care for affected individuals.

- Home quarantine is working well. Exposed but otherwise well persons are putting themselves at more risk by attempting to enter hospitals to find friends and family members. Police and National Guard enforce the quarantine, but some are questioning the legality.

Step Three Situation Report (cont.)

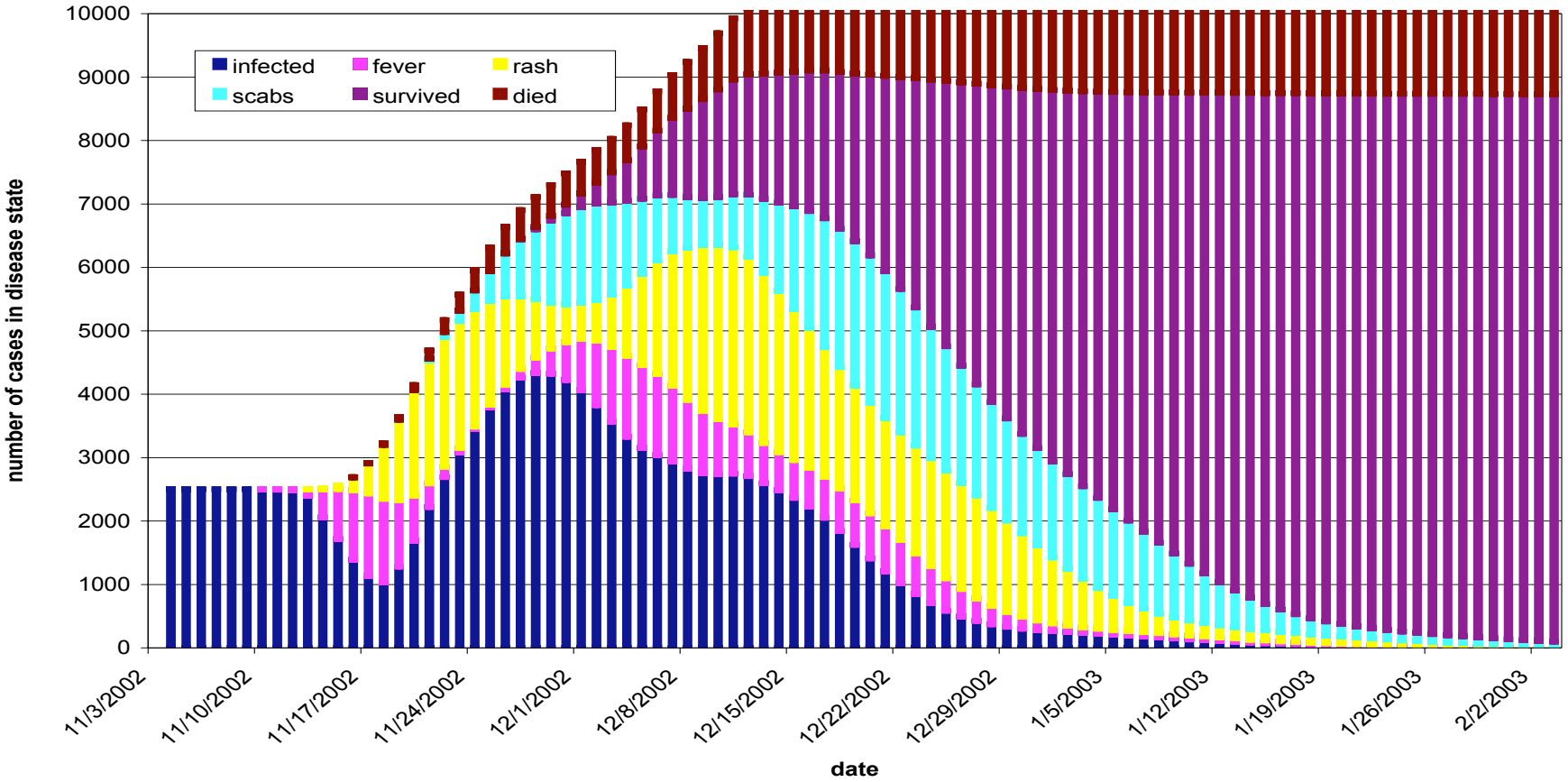


Figure E-1. Smallpox Cases and Bed Requirements v. Time

Step Three Situation Report (cont.)

- A volunteer physician caring for a very ill smallpox patient tries to prevent an epidemiologist from interviewing her, due to the severity of illness. No family members are available to talk with.

- Media outlets are carrying hour-by-hour updates on the number of people who have died in the outbreak with the number rising to over sixty by the end of the evening.

November 21, 2003

- All 10,000 healthcare workers and other officials have been vaccinated in the state of Georgia, as well as half of the new estimate of 250,000 assumed exposed. Plans by other states to vaccinate healthcare workers have been made.

- Continued attempts to locate and interview local and out of state exposed persons are occurring. The time available to do the interviews is short, since vaccination must occur within approximately four days of exposure to an ill person.

- The count of confirmed cases requiring care in area hospitals and being cared in other facilities approaches 2000. Nearly 1000 exposed persons with fever are being quarantined at home. Transportation has become a major logistics problem for health officials for a host of reasons.

- Over 100 people in the Atlanta area have so far died from smallpox. Over 80 confirmed and suspected cases are reported from 10 other states and Canada.

- Several people have fallen seriously ill from the effects of the vaccine including two pregnant women who lost their babies, and one additional person has died from a severe reaction. Supplies of VIG are running short.

- By now, secondary (contacts of the first wave of cases) are reported, including healthcare workers and patients at the DeKalb and Gwinnett Medical Centers.

- A lawyer declares that he will sue the state of Georgia for the quarantine of his wife and children who were in Emory Hospital visiting a relative on the same day that some of the first cases came in.

Washington and Atlanta (November 21) – The group of senior federal, state, and local officials in Washington and Atlanta have been meeting as an Executive Committee (ExComm) to advise the President and the Cabinet on the Atlanta smallpox outbreak convened on the evening of November 21 via videoconference. (So far, there have been no other identified bioterrorism attacks in the country.) The group decided that the *ad hoc Georgia Task Force on Medical Services* should be reconvened in Atlanta on an urgent basis and should prepare a recommended list of issues that, in light of current circumstances, need to go forward for decision in relevant venues.

It was agreed that the Task Force would be convened at 10:00 am the next morning in Atlanta with instructions to prepare issues for consideration at meetings scheduled for early that afternoon in Washington and Atlanta. By 9:00 am, a draft of the issues to be addressed had been prepared by staff of the Task Force.

Step Three
Instructions

STEP THREE INSTRUCTIONS: HOW TO PROCEED

1. You will have approximately sixty minutes to complete your deliberations on Step Three.

2. You are again in the role of members of the ad hoc Georgia Task Force on Medical Services. Your instructions are essentially the same as on November 17

3. You will be again be completing a Memorandum on Issues for Decision working from a draft issues memorandum that has been prepared by staff.

4. The group leader will again begin the deliberations by asking several members of the group to give their individual perspectives on the situation presented.

5. The group leader will again attempt to find a consensus within the group on:
   (iv) Issues to go forward for decision,
   (v) Recommendations on a course of action on individual issues, and
   (vi) A recommended overall strategy for the situation.

6. The group leader will summarize the group's deliberations, recommendations on individual Step Three issues, and overall strategy in the Step Two/Three plenary session, <u>again starting with conclusions on overall strategy</u>.

Step Three
Draft Memorandum

22 November 2003

MEMORANDUM FOR: **The Secretary of the Department of Homeland Security**
The Governor of Georgia

FROM: **Director, Ad Hoc Georgia Task Force on Medical Services**

SUBJECT: **Medical Services Issues Related to Emerging Terrorist Concerns**

OVERVIEW

Per the request from the ExComm, below you will find a set of issues that the Ad Hoc Georgia Task Force on Medical Services believes warrant being addressed at this time.

CANDIDATE ISSUES FOR DECISION

State/Interstate Issues

1. Operational Requirements: What are the shortfalls in various areas where it is likely that federal assistance will be needed and what is the character of the shortfall/need? Identify the top priorities (e.g., 2 or 3) in each category?

   A. Medical Staff (Priority)
   - ( ) Medical doctors: _____
   - ( ) Nurses : _____
   - ( ) Emergency medical technicians: _____
   - ( ) Services/support personnel: _____
   - ( ) Laboratory technicians: _____
   - ( ) Security for medical staff: _____

   B. Medical Facilities
   - ( ) Hospital beds: _____
   - ( ) Laboratories: _____
   - ( ) Food/Shelter for medical staff: _____
   - ( ) Bedding: _____

C. Medical Related Supplies and Facilities

- ( ) Water: _____
- ( ) Food: _____
- ( ) Laboratory: _____
- ( ) Laundry/Disposal: _____
- ( ) Electricity/Gas: _____

Step Three
Draft Memorandum

D. Transportation
- Medical personnel: _____
- Food: _____
- Infected individuals: _____

E. Pharmaceuticals
- ( ) Vaccines: _____
- ( ) VIG: _____
- ( ) Therapeutics: _____

F. Laundry/Disposal
- : _____
- : _____

2. Legal: What operational rules should guide public health officials with respect to:
   - Decontamination of Patients and Environment: _____
     _____
     _____
   - Prophylaxis and post-Exposure Immunization: _____
     _____
     _____
   - Triage Management: _____
     _____
     _____

3. Legal: What operational rules should guide law enforcement officials with respect to:
   - Isolation and Quarantine: _____
     _____
     _____
   - Crowd control: _____
     _____
     _____

4. [Other State Issues?]: _____
   _____
   _____
   _____
   _____
   _____

Step Three
Draft Memorandum

Federal Government Issues

1. Operational Requirements: Which federal assets could most appropriately meet the highest priority needs identified in Question #1? (See response to Question #1)

2. Legal: Are there issues of informed consent with respect to the smallpox vaccine that warrant consideration by the President?
   - ___ Yes. The following approach should be taken to this issue: _____
     _____ _____
     _____
   - ___ Not at this time

3. Legal: Should the federal government define rules of liability for vaccine-related injury?
   - Yes. The following approach should be taken to this issue: _____
     _____
     _____
   - ___ Not at this time

4. [Other Federal Issues?]: _____
   _____
   _____
   _____
   _____
   _____

Views on Overall Strategy:

_____

_____

_____

_____

_____

_____

Tab F
Step Four

STEP FOUR INSTRUCTIONS: HOW TO PROCEED

1. You will have seventy-five minutes for your Step Four deliberations.

2. The aim of this step is to draw lessons learned from the issues raised and debated in the future scenario component of the exercise. Particular attention will be given to possible actions or decisions that could be taken to closure at this time or in the near future to better prepare the Atlanta metropolitan region, the state of Georgia, and the U.S. Department of Defense and other federal agencies to:

(a) Help deter potential CBRNE threats or attacks against the U.S. homeland;
(b) Improve readiness in the event that advance warning of an attack is obtained; and
(c) If such CBRNE attacks do take place, to minimize their consequences.

3. As a basis for discussion, a number of candidate action items are presented at both the state and the federal level.

Step Four Issues for Decision

STATE/INTERSTATE ISSUES

1. Processes: The following steps should be taken to ensure that, in the event of medical services shortfalls as a result of a terrorist attack, processes are in place to describe the requirements for assistance with adequate precision:
   - _____
   - _____

2. Legal: The following subjects require further legal clarification to ensure that, in the event of a terrorist attack, the practice of medicine in the state by medical practitioners certified in other states or by the U.S. DoD are not legally questionable (Explain):
   - ___ Standards of Care Under Declared Public Health Disasters _____
   - ___ Quarantine and Isolation_____
   - ___ [_____] _____

3. Preparedness: It would be appropriate to evaluate Georgia's preparedness for responding to a large-scale bioterrorism attack in approximately _____ months. The principal measures or processes which should guide such an evaluation are as follows:
   - Integrated medical response plan
   - Adequate inventory of current medical assets
   - Unified command, control, and communications (C3)
   - Intelligence dissemination of threat information
   - _____
   - _____
   - _____
   - _____

Step Four Issues for Decision

4. Private Sector Planning: The following steps should be taken to ensure that the private sector is adequately engaged in the planning process for providing medical services in the event of a terrorism attack:
   - _____
   - _____
   - _____

5. Communications: The following steps should be taken to ensure that the emergency communications systems that would need to operate between law enforcement and medical emergency personnel, and between those personnel and federal entities are compatible:
   - Increased use of tests and exercises
   - Establishment of a state version of the federal Government Emergency Telecommunications System (GETS)
   - Encourage FCC designation of special frequencies for state and local response to terrorism incidents
   - _____
   - _____

Other Issues

6. [_____]: _____
   _____:
   - _____
   - _____

Step Four Issues for Decision

FEDERAL ISSUES

1. Preparations: The following additional steps could be taken by the federal government at this time to prepare for possible future requests to aid state and local authorities in dealing with future incidents of bioterrorism:
    - Develop operational plans for generic state and local bioterrorism contingencies
    - Enhance command and control capabilities at the state and local level
    - Describe and quantify potential military support to civilian authority (SCA) mission requirements
    - _____
    - _____

2. Training/Education: The following steps should be taken by the U.S. Department of Defense to improve coordination and training between U.S. DoD and state/local civilian authorities and ensure that: (1) U.S. DoD and other federal authorities fully understand requests by civil authorities for medical assistance and (2) civilian authorities understand what medical assistance might be available from the U.S. DoD:
    - Joint federal-state table-top exercises
    - DoD emergency preparedness courses at the state and local level
    - Development of generic templates for requesting federal assistance
    - _____
    - _____

3. Planning: The following policy issues should be examined with respect to the prospect of an expanded role for the National Guard in responding to acts of terrorism in the United States:
    - Review of Posse Comitatus
    - Coordination of U.S. DoD activation of National Guard units and local use of National Guard assets
    - Use of National Guard Civil Support teams (CSTs)
    - _____
    - _____

Step Four Issues for Decision

4. Costs: The following procedures should be established to clarify how local and state responses prior to a prospective terrorist attack (i.e., as a response to a warning) and those following such an attack may be reimbursed by the federal government to ensure the most effective means of prevention and mitigation:
   A. Under the Stafford Act
      - _____
      - _____

   B. Under HHS Public Health Service Emergencies
      - _____
      - _____

   C. [ ]
      - _____
      - _____

5. Planning: The following changes need to be made to the Federal Response Plan (ESF 8 is the medical component of the FRP) to ensure that it is an adequate starting point for the medical response to the bioterrorism threat:
   - _____
   - _____
   - _____

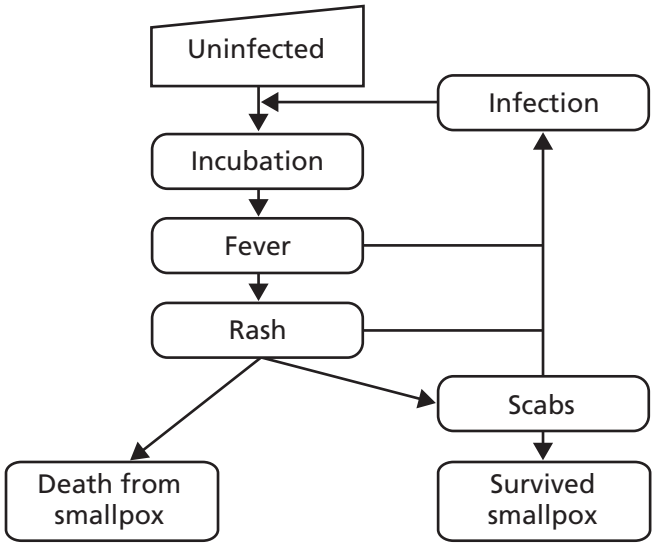
APPENDIX E

Smallpox Outbreak Model Used in the Georgia Exercise

As discussed in Chapter Six, the smallpox outbreak model used in the Georgia exercise is based on a stochastic, event-driven model of the evolution of a smallpox outbreak, given various assumptions about the number of individuals initially exposed to smallpox, the nature of those cases, the epidemiologic characteristics of smallpox, and the effectiveness and timing of control measures. A slightly refined version of the model was published in the *New England Journal of Medicine* in January 2003.[1] The model allowed exercise participants to observe the numbers and types of smallpox casualties throughout the postulated outbreak.

The stochastic model begins with N_0 individuals who are infected with smallpox. Each infected individual passes through the following stages: incubation, fever, rash, scabs, and survival, or incubation, fever, rash, and death. The model's disease stages are shown in Figure E.1.

Figure E.1
Smallpox Model Disease Stages



RAND *MG217-E.1*

[1] Bozzette, S. A., et al., "A Model for a Smallpox-Vaccination Policy," *New England Journal of Medicine,* Vol. 348, January 30, 2003, pp. 416–425. Bozzette and colleagues collaborated on a RAND Health research study. They developed the model, an early version of which was used for this study. They later refined the model prior to its publication in the *New England Journal of Medicine.*

The dwelling time in each stage of the disease is determined for each individual case of smallpox by drawing from an empirical distribution. The distribution was derived from observed values of smallpox outbreaks in Europe and North America after World War II. The distribution of the dwelling time for incubation is piecewise uniform with breakpoints shown in Table E.1, which shows the probability of transitioning to fever stage following infection. The mean dwelling time for incubation is 12 days. The dwelling times for the other stages are modeled more simply as uniform distributions, with the fever stage lasting between 1.5 days and 4.5 days, and both the rash and scabs stages lasting between 4.5 and 12.5 days. The mean dwelling time for the fever stage is three days, and both the rash and scabs stages have a mean dwelling time of 8.5 days.

Death from smallpox follows a binomial distribution. The exact distribution of dwelling time in rash stage to death (or to scab stage for survivors) is given in Table E.2.

The major assumptions about the nature of the outbreak and control strategies are reflected in the values N_0 and R, where N_0 is the number of infections that start the outbreak and R is the expected number of new infections per case of smallpox. N_0 in the scenario was 2,500. R starts as $R_{uncontrolled}$ (reproductive rate without control measures) and changes to $R_{controlled}$ (reproductive rate with control measures) at time T, which in the scenario was 13 days. Control measures may include various vaccination strategies and isolation of cases of

Table E.1
Probability of Transitioning to Fever Stage Following Smallpox Infection

Days Since Start of Initial Infection (Dwelling Time for Incubation)	Cumulative Probability of Transitioning to Fever
5.5	0.0%
6.5	0.1%
7.5	0.3%
8.5	0.7%
9.5	4.1%
10.5	18.2%
11.5	33.8%
12.5	52.1%
13.5	71.1%
14.5	87.5%
15.5	94.4%
16.5	98.2%
17.5	98.6%
18.5	99.0%
19.5	99.3%
20.5	99.7%
21.5	99.9%
22.5	100.0%

Table E.2
Probability of Transitioning to Scab Stage or Death as a Function of Time in Rash Stage

Fraction of Dwelling Time in Rash Stage	Cumulative Probability of Transitioning from Rash Stage to Either Scab Stage or Death
0	0%
0.1	10%
0.3	10%
0.7	90%
1.0	100%

smallpox. The assumed values of $R_{uncontrolled}$, $R_{controlled}$, and T are based on our review of the literature, including historical accounts of outbreaks of smallpox in Europe and North America after 1945. In our base case scenarios, $R_{uncontrolled}$ varies with the scenario according to the assumed nature of the outbreak. It is 1.8 if the outbreak occurs mainly in a community, 15.4 in a hospital setting, and 3.4 in a mixed setting. $R_{controlled}$ is estimated to be 0.1.

The number and timing of new cases in each generation of the outbreak is simulated as a Poisson process. First, an infectiousness parameter I is chosen for each infected individual as a random draw from an exponential distribution with mean 1. Second, infectiousness is determined by multiplying I by a predetermined parameter—$p_{t,v}$—chosen to reflect the assumed daily rate of new infections by disease stage (v) and by time (t) since infection of the index cases. The changes in the rates of infection over time reflect the effects of control measures that are implemented at certain times since the start of the outbreak. A case of smallpox becomes infective halfway between the moment of onset of fever and the moment of onset of rash.

We assumed that 3.5 percent of the general population consists of health care workers. We further assumed that a successfully vaccinated person has a 95.5 percent lower probability of becoming infected than a person without vaccination, and that a vaccination is successful in 80 percent of first attempts when applying ring vaccination. Vaccination causes serious complications in 51.8 per million vaccinations and death in 2.72 per million vaccinations. Although a vaccination mortality rate of one per million generally is quoted,[2] multiplying the number of deaths per complication by the number of complications per total people vaccinated leads to a vaccination mortality rate of 2.72 deaths per million people vaccinated, and observation of a larger series of vaccinations produced a mortality rate of five per million. Ring vaccination[3] is assumed to involve 50 people per case of smallpox. The stochastic model was run approximately 100 times.

---

[2] For example, see Centers for Disease Control and Prevention, "Adverse Reactions Following Smallpox Vaccination," Smallpox Fact Sheet—Information for Clinicians, Atlanta: CDC, available at http://www.bt.cdc.gov/agent/smallpox/vaccination/reactions-vacc-clinic.asp, accessed July 8, 2004.

[3] Ring vaccination is the practice of administering vaccine only to people in contact with a known infected patient. It is intended to prevent the spread of a highly infectious disease by surrounding the patient with a "ring" of immunized individuals.

APPENDIX F

Excerpt of Quadrennial Defense Review

The 2001 Quadrennial Defense Review is a strategic reassessment of the nation's defenses. By its own language, it is very much a "top-down" approach to national defense strategy and planning. It is intended to provide strategic goals and supporting objectives for defense "transformation." One of its key tenets is a shift from the Cold War "threat-based" approach to defense planning to one that is "capabilities based." It has, nevertheless, been sharply criticized as being long on rhetoric and short on substance.[1]

The most recent QDR[2] notes the importance of homeland security (and related homeland defense and civil support missions of DoD), but provides little in the way of definitive guidance on the use of military medical assets to support civil authorities in the aftermath of a natural disaster or a CBRNE attack. Although guidelines in the QDR on domestic military support are scant, a few passages of the QDR do address this issue. That language is excerpted here.

> Defending the Nation from attack is the foundation of strategy. As the tragic September terror attacks demonstrate, potential adversaries will seek to threaten the centers of gravity of the United States, its allies, and its friends. As the U.S. military increased its ability to project power at long range, adversaries have noted the relative vulnerability of the U.S. homeland. They are placing greater emphasis on the development of capabilities to threaten the United States directly in order to counter U.S. operational advantages with their own strategic effects. Therefore, the defense strategy restores the emphasis once placed on defending the United States and its land, sea, air, and space approaches. It is essential to safeguard the Nation's way of life, its political institutions, and the source of its capacity to project decisive military power overseas.[3]
>
> (T)he new construct for the first time takes into account the number and nature of the tasks actually assigned to the Armed Forces. Unlike previous force-sizing constructs, the new construct explicitly calls for the force to be sized for defending the

---

[1] See, for example, Smith, Col. D., U.S. Army (ret.), *The 2001 Quadrennial Defense Review: Here We Go Again—Or Do We?* Washington, D.C.: Center for Defense Information, 2001, available at http://www.cdi.org/issues/qdr/again.html, accessed September 25, 2003; Schrader, J. Y., L. Lewis, and R. A. Brown, *Quadrennial Defense Review 2001: Lessons on Managing Change in the Department of Defense*, Santa Monica, Calif.: RAND Corporation, DB-379-JS, 2003, available at http://www.rand.org/publications/DB/DB379/DB379.pdf, accessed September 25, 2003.

[2] DoD, *Quadrennial Defense Review Report,* Washington, D.C.: U.S. Department of Defense, September 30, 2001, available at http://www.defenselink.mil/pubs/qdr2001.pdf, accessed September 25, 2003.

[3] DoD, 2001, p. 14.

> homeland, forward deterrence, warfighting missions, and the conduct of smaller-scale contingency operations.[4]
>
> The highest priority of the U.S. military is to defend the Nation from all enemies. The United States will maintain sufficient military forces to protect the U.S. domestic population, its territory, and its critical defense-related infrastructure against attacks emanating from outside U.S. borders, as appropriate under U.S. law. U.S. forces will provide strategic deterrence and air and missile defense and uphold U.S. commitments under NORAD. *In addition, DoD components have the responsibility, as specified in U.S. law, to support U.S. civil authorities as directed in managing the consequences of natural and man-made disasters and CBRNE-related events on U.S. territory.* [emphasis added] Finally, the U.S. military will be prepared to respond in a decisive manner to acts of international terrorism committed on U.S. territory or the territory of an ally. Ensuring the safety of America's citizens at home can only be achieved through effective cooperation among the many Federal departments and agencies and State and local governments that have homeland security.[5]
>
> *DoD must institutionalize definitions of homeland security, homeland defense, and civil support and address command relationships and responsibilities within the Defense Department.* [emphasis added] This will allow the Defense Department to identify and assign homeland security roles and missions as well as examine resource implications. DoD must be committed to working through an integrated inter-agency process, which in turn will provide the means to determine force requirements and necessary resources to meet our homeland security requirements. DoD must bolster its ability to work with the organizations involved in homeland security to prevent, protect against, and respond to threats to the territorial United States. In particular, the Defense Department will place new emphasis upon counterterrorism training across Federal, State, and local first responders, drawing on the capabilities of the Reserve and National Guard. Preparing forces for homeland security may require changes in force structure and organization. For example, in conjunction with the ongoing review of national preparedness requirements undertaken by the Vice President, DoD will continue to examine the roles and responsibilities of its Active and Reserve forces to ensure they are properly organized, trained, equipped, and postured to provide for the effective defense of the United States. It is clear that U.S. forces, including the United States Coast Guard, require *more effective means, methods, and organizations* [emphasis added] to perform these missions. As part of this examination, DoD will review the establishment of a new unified combatant commander to help address complex inter-agency issues and provide a single military commander to focus military support.[6]

Except for the establishment of NORTHCOM and the new ASD(HD), little if anything in DoD force structure and organizational changes—new "means, methods, and organization" cited above—for homeland security is apparent.

---

[4] DoD, 2001, p. 18.

[5] DoD, 2001, p. 18.

[6] DoD, 2001, p. 19.

Bibliography

"Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction (also known as the Gilmore Commission)," RAND Corporation Web site, available at http://www.rand.org/nsrd/terrpanel/, accessed June 2004.

Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *Fourth Annual Report to the President and the Congress,* Santa Monica, Calif.: RAND Corporation, December 15, 2002.

Alson, R. A., et al., "Analysis of Medical Treatment at a Field Hospital Following Hurricane Andrew," *Annals of Emergency Medicine,* Vol. 22, 1993, pp. 1721–1728.

The American Heritage Dictionary of the English Language, Fourth Edition. Boston: Houghton Mifflin, 2000.

Bozzette, S. A., et al., "A Model for a Smallpox-Vaccination Policy," *New England Journal of Medicine,* Vol. 348, 2003, pp. 416–425.

Brackett, D. W., *Holy Terror: Armageddon in Tokyo*, New York and Tokyo: Weatherhill, 1996.

Bradley, R. N., medical director, emergency center, Memorial Hermann Hospital; assistant medical director, Houston Fire Department; major, Texas Air National Guard, personal interview, August 12, 2002.

CDC, "Adverse Reactions Following Smallpox Vaccination," Smallpox Fact Sheet—Information for Clinicians, Atlanta: CDC, available at http://www.bt.cdc.gov/agent/smallpox/vaccination/reactions-vacc-clinic.asp, accessed July 8, 2004.

CDC, "Emergency Mosquito Control Associated with Hurricane Andrew—Florida and Louisiana," Centers for Disease Control and Prevention, *MMWR [Morbidity and Mortality Weekly Report],* Vol. 42, No. 13, 1993, pp. 240–242.

Center for Army Lessons Learned, *Operations Other than War, Volume II: Disaster Assistance,* Newsletter 93-6, Fort Leavenworth, Kan.: Center for Army Lessons Learned, October 1993, available at http://call.army.mil/products/newsltrs/93-6/chap2.htm, accessed August 25, 2003.

Davies, K. L., "The Imposition of Martial Law in the United States," *Air Force Law Review*, Vol. 49, 2000.

Dawson, CDR B., Associate Director for Administration for Homeland Security, personal interview, NNMC *Bethesda,* April 28, 2003.

Deputy Secretary of Defense, memorandum on *Strengthening the medical functions of the Department of Defense*, October 1, 1991, cited in Hosek and Cecchine, 2001, and on the Assistant Secretary of Defense (Health Affairs) Web site, available at http://www.ha.osd.mil/ha/winkenwerder-bio.cfm, accessed August 27, 2003.

DHS, "Initial National Response Plan," Washington, D.C.: U.S. Department of Homeland Security, Office of the Secretary, September 30, 2003, available at http://www.dhs.gov/interweb/assetlibrary/Initial_NRP_100903.pdf, accessed June 2004.

DoD, Deputy Secretary of Defense, "Strengthening the Medical Functions of the Department of Defense," memorandum, Washington, D.C.: U.S. Department of Defense, October 1, 1991.

DoD, *Doctrine for Planning Joint Operations*, DoD Joint Publication 5-0, April 13, 1995, available at http://www.dtic.mil/doctrine/jpplanningseriespubs.htm, accessed September 26, 2003.

DoD, *Annual Report to the President and Congress*, Appendix L, "Resources Allocated to Support and Mission Activities," Washington, D.C: U.S. Department of Defense, 2000, available at http://www.defenselink.mil/execsec/adr2000/appl.html, accessed July 29, 2003.

DoD, *Quadrennial Defense Review Report,* Washington, D.C.: U.S. Department of Defense, September 30, 2001, available at http://www.defenselink.mil/pubs/qdr2001.pdf, accessed September 25, 2003.

DoD, *Joint Doctrine for Campaign Planning*, DoD Joint Publication 5-00.1, January 25, 2002, available at http://www.dtic.mil/doctrine/jpplanningseriespubs.htm, accessed September 26, 2003.

DoD, *The National Disaster Medical System*, DoD Directive 6010.22, Washington, D.C.: U.S. Department of Defense, January 21, 2003a, available at http://www.dtic.mil/whs/directives/corres/html/601022.htm, accessed March 20, 2004.

DoD, "Rebalancing Forces," memorandum from the secretary of defense, Washington, D.C.: U.S. Department of Defense, July 9, 2003b.

DoD Directive 3025.1, *Military Support to Civil Authorities (MSCA)*, Washington, D.C.: Department of Defense, January 15, 1993, available at http://www.dtic.mil/whs/directives/corres/html/30251.htm, accessed September 3, 2003.

DoD Directive 3025.12, *Military Assistance for Civil Disturbances (MACDIS)*, Washington, D.C.: Department of Defense, February 4, 1994, available at http://www.dtic.mil/whs/directives/corres/html/302512.htm, accessed September 3, 2003.

DoD Directive 3025.13, *Employment of Department of Defense Resources in Support of the United States Secret Service,* Washington, D.C.: Department of Defense, September 13, 1985, available at http://www.dtic.mil/whs/directives/corres/html/302513.htm, accessed September 3, 2003.

DoD Directive 3025.15, *Military Assistance to Civil Authorities (MACA)*, Washington, D.C.: Department of Defense, Office of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict, February 18, 1997, available at http://www.dtic.mil/whs/directives/corres/html/302515.htm, accessed September 3, 2003.

DoD Directive 5525.5, *DoD Cooperation with Civilian Law Enforcement Officials*, Washington, D.C.: Department of Defense, January 15, 1986, available at http://www.dtic.mil/whs/directives/corres/html/55255.htm, accessed September 3, 2003.

DoD Directive 6010.22, *National Disaster Medical System (NDMS)*, Washington, D.C.: Department of Defense, January 21, 2003, available at http://www.dtic.mil/whs/directives/corres/html/601022.htm, accessed September 3, 2003.

Dycus, S., et al., *National Security Law*, Jackson, Miss.: University of Mississippi School of Law, Spring 1997.

Elliot, L., "AF Hospital Leaves Houstonians Grateful, Points to Guard Medical Future," Houston: Texas National Guard Public Affairs Office, July 5, 2001, available at http://www.ngb.army.mil/news/2001/07/05/afhospital.shtml, accessed August 20, 2003.

Federal Emergency Management Agency, *Federal Response Plan,* "Emergency Support Function #8, Health and Medical Services Annex," n.d., available at http://www.fema.gov/txt/rrr/frp/frp_b_esfs.txt, accessed June 2004.

GAO, *Combating Terrorism: Observations on the Nunn-Lugar-Domenici Domestic Preparedness Program, Testimony Before the Subcommittee on National Security, International Affairs and Criminal Justice, Committee on Government Reform and Oversight, House of Representatives*, Washington, D.C.: U.S. General Accounting Office, GAO/T-NSAID-99-16, October 2, 1998, available at http://www.gao.gov/archive/1999/ns99016t.pdf, accessed September 2, 2003.

GAO, *Defense Health Care: Tri-service Strategy Needed to Justify Medical Resources for Readiness and Peacetime Care*, Washington, D.C.: U.S. General Accounting Office, GAO/HEHS-00-10, 1999.

GAO, *Hospital Preparedness: Most Urban Hospitals Have Emergency Plans but Lack Certain Capacities for Bioterrorism Response*, Washington, D.C.: U.S. General Accounting Office, GAO-03-924, 2003a.

GAO, *Defense Health Care: Oversight of the TRICARE Civilian Provider Network Should Be Improved*, Washington, D.C.: U.S. General Accounting Office, GAO-03-928, 2003b.

GAO, *Bioterrorism: Preparedness Varied Across State and Local Jurisdictions*, Washington, D.C.: U.S. General Accounting Office, GAO-03-373, 2003c.

GAO, *Homeland Defense: DoD Needs to Assess the Structure of U.S. Forces for Domestic Military Missions*, Washington, D.C.: U. S. General Accounting Office, GAO-03-670, 2003d.

Gray, E., senior emergency coordinator, U.S. Public Health Service, DHHS, interview with authors, April 15, 2002.

Haines, E. T., and Weidenbach B., "Planning for Medical Support of Disasters," *Military Medicine*, Vol. 158, No. 10, 1993.

Hosek, S. D.. and G. Cecchine, *Reorganizing the Military Health System: Should There Be a Joint Command?* Santa Monica, Calif.: RAND Corporation, MR-1350-OSD, 2001.

"Hospitals Hit Hard by Hurricane Andrew," *Medical News Report,* October 1992, available at http://www.medicalnewsreport.com/med9210.htm, April 15, 2003.

Hoyle, J. D., Sr., U.S. Public Health Service Office of Emergency Preparedness, telephone interview, April 24, 2002.

Kaplan, D. E., and A. Marshall, *The Cult at the End of the World: The Incredible Story of Aum*, London, UK: Hutchinson, 1996.

Kellman, B., *Managing Terrorism's Consequences: Legal Issues*, Oklahoma City: National Memorial Institute for the Prevention of Terrorism, March 2002.

Kleinberg, E., "State Learns from Mistakes in Andrew," *Palm Beach Post*, June 1, 2001, available at http://www.palmbeachpost.com/storm/content/weather/special/storm/getready/Andrew.html, accessed August 25, 2003.

Lezon, D., "Air Force Mobile Combat Hospital Relieves Flooded Facilities," *Houston Chronicle*, June 21, 2001, p. A25.

Lifton, R. J., *Destroying the World to Save It: Aum Shinrikyo, Apocalyptic Violence, and the New Global Terrorism*, New York: Metropolitan Books, 1999.

Macintyre, A. G., et al., "Weapons of Mass Destruction Events with Contaminated Casualties: Effective Planning for Health Care Facilities," *Journal of the American Medical Association*, Vol. 283, 2000, pp. 242–249.

Manning, F. J., and L. Goldfrank, eds., *Preparing for Terrorism: Tools for Evaluating the Metropolitan Medical Response System*, Washington, D.C.: National Academy Press, 2002.

McDonnell, J., *Hurricane Andrew: Historical Report*, Fort Belvoir, Va.: U.S. Army Corps of Engineers, Office of History, January 1993.

Millot, M. D., R. C. Molander, and P. Wilson, *The Day After . . . Study: Nuclear Proliferation in the Post-Cold War World,* Vol. I, Summary Report, Santa Monica, Calif.: RAND Corporation, MR-266-AF, 1993a.

Millot, M. D., R. C. Molander, and P. Wilson, *The Day After . . . Study: Nuclear Proliferation in the Post-Cold War World,* Vol. II, Main Report, Calif.: RAND Corporation, MR-253-AF, 1993b.

Millot, M. D., R. C. Molander, and P. Wilson, *The Day After . . . Study: Nuclear Proliferation in the Post-Cold War World,* Vol. III, Exercise Materials, Santa Monica, Calif.: RAND Corporation, MR-267-AF, 1993c.

Molander, R. C., A. S. Riddile, and P. Wilson, *Strategic Information Warfare: A New Face of War*, Santa Monica, Calif.: RAND Corporation, MR-661-OSD, 1996.

Molander, R. C., D. Mussington, and P. Wilson, *Cyberpayments and Money Laundering: Problems and Promise*, Santa Monica, Calif.: RAND Corporation, MR-965-CTI, 1998.

Molander, R. C., P. Wilson, D. Mussington, and R. Mesic, *Strategic Information Warfare Rising*, Santa Monica, Calif.: RAND Corporation, MR-964-OSD, 1998.

Morlang, W. M., "Dentistry's Vital Role in Disaster Preparedness," *Journal of the California Dental Association,* Vol. 24, No. 5, 1996, pp. 63–66.

Mussington, D., P. Wilson, and R. C. Molander, *Exploring Money Laundering Vulnerabilities Through Emerging Cyberspace Technologies*, Santa Monica, Calif.: RAND Corporation, MR-1005-OSTP/FinCEN, 1999.

National Commission on Terrorism, *Countering the Changing Threat of International Terrorism*, available at http://w3.access.gpo.gov/nct/, accessed September 3, 2003.

"Preparedness—Emergency Support Function (ESF) 13: Terrorism," Georgia Citizen Corp, n.d., available at http://rome.gema.state.ga.us/WebGema/prepare.nsf/0/96457dc72e84831885256cbd0074ed71?OpenDocument, accessed September 5, 2003.

Rohter, L., "Food and Shelter Crises Ease But Diseases Pose Dangers," *New York Times*, September 1, 1992, p. A13.

Schrader, J. Y., L. Lewis, and R. A. Brown, *Quadrennial Defense Review 2001, Lessons on Managing Change in the Department of Defense*, Santa Monica, Calif.: RAND Corporation, DB-379, 2003, available at http://www.rand.org/publications/DB/DB379/DB379.pdf, accessed September 25, 2003.

Sharp, T. W., et al., "Medical Preparedness for a Terrorist Incident Involving Chemical or Biological Agents During the 1996 Atlanta Olympic Games," *Annals of Emergency Medicine,* Vol. 32, No. 2, 1998, pp. 214–223.

Slevin, P., and D. Filkins, "We Need Help: Bush Sends in 2,000 Troops Metro Blames Feds for Failure of Relief Efforts 'More Destruction than Any Disaster' Ever in America," *Miami Herald,* August 28, 1992, available at http://www.miami.com/mld/miamiherald/news/special_packages/Andrew/3848523.htm, accessed August 19, 2003.

Smith, Col. D., U.S. Army (ret.), *The 2001 Quadrennial Defense Review: Here We Go Again—Or Do We?*, Washington, D.C.: Center for Defense Information, 2001, available at http://www.cdi.org/issues/qdr/again.html, accessed September 25, 2003.

Stamp, G. L., "Hurricane Andrew: The Importance of a Coordinated Response," *Journal of the American Veterinary Medical Association,* Vol. 203, No. 7, 1993, pp. 989–992.

State of Georgia, Office of Homeland Security Web site, available at http://www.gahomelandsecurity.com/, accessed September 21, 2003.

Stolberg, S., "Battlefield Medicine Lifts Up a Weary South Florida; Storm: A Loose Group of Doctors, Nurses Is Trying to Cope with Sweeping Health Problems After Hurricane," *Los Angeles Times*, September 19, 1992, p. A1.

Stringer, L., M.D., commanding officer, Special Operations Response Team, telephone interview, March 27, 2003.

Teeter, D. S., "Illnesses and Injuries Reported at Disaster Application Centers Following the 1994 Northridge Earthquake," *Military Medicine*, Vol. 161, No. 9, 1996, pp. 526–530.

Trebilcock, C. T., "The Myth of Posse Comitatus," *Journal of Homeland Security*, October 2000, available at http://www.homelandsecurity.org/journal/Articles/Trebilcock.htm, accessed September 3, 2003.

Tucker, E., director, DVA Medical Center, personal interview, April 16, 2002.

U.S. Army Field Manual 8-55, *Planning for Health Services Support*, Washington, D.C.: Headquarters, Department of the Army, September 1994.

U.S. Army War College, *How the Army Runs: A Senior Leader Reference Handbook, 2001–2002*, Carlisle, Pa.: U.S. Army War College, 2001, available at http://www.carlisle.army.mil/usawc/dclm/linkedtextchapters.htm, accessed September 5, 2003.

U.S. Commission on National Security/21st Century, *Roadmap for National Security: Imperative for Change, Phase III Report*, February 15, 2001, available at http://www.nssg.gov/PhaseIIIFR.pdf, accessed September 3, 2003.

U. S. Northern Command, "Who We Are—Civil Support," NORTHCOM Web site, http://www.northcom.mil/index.cfm?fuseaction=s.who_civil, accessed September 3, 2003.

USNS *Comfort* fact sheet, available at http://www.msc.navy.mil/factsheet/comfort.htm, accessed August 27, 2003.

Waller, S. G., *Memorandum for HQ USAF SG: Medical After-Action Report for Visit of Senior Medical Leaders to 591st Expeditionary Medical Squadron (deployed), Houston, Texas, 20 Jun 01*, Washington, D.C.: Headquarters United States Air Force Surgeon General HQ USAF/SGX2, August 3, 2001.

Weddle, M., "Health Sector Military-Civilian Cooperation in Disaster Response: A Case Study of the Response to Hurricane Marilyn in the U.S. Virgin Islands," 1998, unpublished document.

Weddle, M., and H. Prado-Monje, "Utilization of Military Support in the Response to Hurricane Marilyn: Implications for Future Military-Civilian Cooperation," *Prehospital Disaster Medicine,* Vol. 14, No. 2, 1999, pp. 81–86.

Weddle, M., and H. Prado-Monje, "The Use of Deployable Military Hospitals After Hurricanes: Lessons from the Hurricane Marilyn Response," *Military Medicine,* Vol. 165, No. 5, 2000, pp. 411–417.

The White House, "Homeland Security Presidential Directive/HSPD-5: Management of Domestic Incidents," Washington, D.C.: The White House, February 28, 2003, available at http://www.whitehouse.gov/news/releases/2003/02/20030228-9.html, accessed March 15, 2003.

The White House, *National Strategy for Homeland Security,* Washington, D.C.: U.S. White House Office of Homeland Security, July 2002*,* available at http://www.whitehouse.gov/homeland/book/nat_strat_hls.pdf, accessed February 3, 2003.