

EMERGENCY PUBLIC HEALTH

Preparedness and Response

Edited by

G. Bobby Kapur, MD, MPH

Associate Chief for Educational Affairs
Residency Program Director
Section of Emergency Medicine
Baylor College of Medicine
Houston, Texas

Jeffrey P. Smith, MD, MPH

Co-Director
Ronald Reagan Institute of Emergency Medicine
The George Washington University
Washington, DC



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Dedication

For Jayne, Arjun, and Dylan. My strength and peace amidst all of life's complexities.

—G. BOBBY KAPUR

Contents

Preface ix

Foreword xiii

Contributors xv

About the Editors xix

Introduction 1

1 Public Health Security: Protecting Populations from Emergencies 3
G. Bobby Kapur and Jeffrey P. Smith

Section 1 Government and Public Health Emergencies 11

2 Government Capacity: Federal, State, and Local Agencies and Responsibilities 13
Cedric Dark and Janice Blanchard

3 Public Health Law 31
Carl Hacker and Katherine Wingfield

4 National Response Plan 45
Mark E. A. Escott

- 5** Emerging Public Health Systems: Post-conflict and Post-disaster Settings 63
C. James Holliman
- Section 2 Private-Sector and Nongovernmental Organizations 81**
- 6** Public–Private Partnerships During Emergencies 83
Jennifer L. Chan and Christian Theodosis
- 7** Nongovernmental Organizations’ Response to Crises 103
Jeffrey P. Smith and Steven M. Anderscavage
- 8** Technology and Public Health Crises 131
Ali Pourmand and Janelle Rios
- Section 3 Public Health Tools During Emergencies 151**
- 9** Epidemiological Studies 153
Junaid A. Razzak and Uzma Rabim Khan
- 10** Surveillance and Monitoring 167
Gregg Greenough and Satchit Balsari
- 11** Rapid Needs Assessment 185
Hilarie H. Cranmer and Mary Pat McKay
- Section 4 Infectious Diseases Emergencies 199**
- 12** Contagious Diseases Epidemics 201
Terry Mulligan and G. Bobby Kapur
- 13** Pandemic Influenza 227
Terry Mulligan and G. Bobby Kapur
- 14** Emerging and Re-emerging Infectious Diseases 251
Larissa May

Section 5 Terrorism 283

15 Bombing Events 285
G. Bobby Kapur

16 Biological Agents 305
L. Kristian Arnold

17 Chemical Agents 335
Katherine Douglass and Rodney Omron

18 Radiological Agents 357
Hamid Shokoobi, Mohammad Reza Soroush, and G. Bobby Kapur

Section 6 Natural Emergencies 377

19 Earthquakes 379
Christopher N. Mills

20 Hurricanes, Tsunamis, and Cyclones 403
Elizabeth DeVos

21 Extreme Temperature Emergencies: Heat Waves and Cold Storms 425
Joy Crook and Alexander Vu

Section 7 Industrial Emergencies 445

22 Hazardous Materials 447
Terry Mulligan

23 Nuclear Energy Reactors 473
Y. Veronica Pei and Angela Lee

Section 8 Special Populations and Issues 491

24 Mental Health Emergencies and Post-traumatic Stress Disorder 493
Siddharth Ashvin Shah

25 Children and Public Health Emergencies 517
Heather Machen

26 Public Health Emergencies and Substance Abuse 531
Deborah Podus, Jane Carlisle Maxwell, and M. Douglas Anglin

Index 545

Preface

After the SARS outbreak in 2003, Hurricane Katrina in 2005, and the Haitian earthquake in 2010, public health professionals, first responders, and medical providers questioned the effectiveness of preparedness and response activities for these large-scale emergencies, and almost everyone asked, “Is this the best we can do?” Recent domestic and international events have revealed the complex issues that arise from public health emergencies such as natural disasters, infectious disease epidemics, and terrorist events. Although international organizations, countries, or local governments may possess the emergency supplies and personnel for a region in crisis, on many occasions they are unable to deliver this assistance in a timely or coordinated manner. During an emergency, public health professionals face specific challenges: to conduct rapid needs assessments for matching resources with actual needs on the ground, to make critical decisions based on limited data, and to implement monitoring and surveillance techniques for tracking the results of the assistance. Recognizing these challenges and responding to public health crises with the appropriate knowledge and skills will increase the effectiveness of interventions made by public health and healthcare infrastructures.

The public health crises of the 21st century have demonstrated the need for enormous coordination among multiple entities for good outcomes. Historically, these preparedness and response activities have mostly been within the domain of local, state, and national government agencies. However, the private sector and nongovernmental organizations (NGOs) are playing larger roles in recent crises for multiple reasons. Often, the government may be limited in the immediate resources available to respond to an emergency or these agencies may not be able to provide assistance rapidly, and the private sector and NGOs may be able to deliver aid quickly through

well-established formal and informal networks. In addition, as was seen in the 2010 Haitian earthquake, the government facilities may be disrupted or destroyed during the event, and other organizations are needed to fill the void left by the lack of government capacity. Once the government, private sector, and NGOs enter the emergency setting, communication and clarity of responsibilities are fundamental for stabilizing the affected community and for beginning relief efforts.

Although multiple books have been written on the topic of disaster medicine, this is the first book in the growing field of emergency public health. Unlike disaster medicine that focuses primarily on the medical treatment of specific conditions that occur during disasters, emergency public health encompasses the broad components of preparedness, response, and mitigation through a public health perspective for communities and nations that are at risk for large-scale emergencies. In addition, emergency public health explores the interactions and contributions of multiple sectors such as the government, non-governmental organizations, private enterprises, and individuals before, during, and after a public health emergency.

Most of the contributing authors in this book are emergency medicine physicians with public health degrees. These experts combine their public health and clinical experiences to give the reader a balance of both theory and practice on how to prepare and respond to public health emergencies. The book is divided into eight sections to address the breadth and depth of emergency public health:

1. Government and Public Health Emergencies
2. Private Sector and Nongovernmental Organizations
3. Public Health Tools during Emergencies
4. Infectious Diseases
5. Terrorism
6. Natural Disasters
7. Industrial Emergencies
8. Special Populations and Issues

The chapters are structured to provide the reader with a systematic and case-based approach to the topics. Each chapter begins with a detailed case study and then follows with historical perspectives to learn from prior experiences. The chapter then provides valuable information on specific preparedness, response, and mitigation interventions. The chapter then reviews the case study to offer a detailed analysis. Each chapter concludes with a list of important on-line resources.

The primary objectives of this book are simple: to help improve how we prepare and respond to public health crises and to decrease the morbidity, mortality, and suf-

fering of those individuals affected by large-scale emergencies. As public health professionals, first responders, and healthcare providers, we possess the obligation to achieve the highest level of public health security within the communities we serve.

G. BOBBY KAPUR
Houston, Texas

JEFFREY P. SMITH
Washington, DC

Foreword

What Is Emergency Public Health?

The concept of emergency public health, while not new, is being defined and described in greater detail than in the past. In this book, the authors have focused on the nature of public health emergencies, as well as the role that various sectors have in responding to them. They describe tools that are common to public health, and identify some of the issues that are faced in preparing for and responding to public health emergencies. Defining emergency public health through the use of these examples provides a basis for understanding the concepts that are critical to the field—prevention, preparation, intervention, and recovery—as well as the critical need to take a multidisciplinary approach to public health emergencies.

In an environment in which we discuss public health emergencies, we need to discuss emergency public health as a specialty area within public health, much as environmental health, infectious disease, or injury prevention and control can be seen as public health specialty areas, and to provide a basis for its practice and research. Core competencies in emergency public health, currently under development, will take an all-hazard approach, and will cover the spectrum of prevention, protection, response and recovery, and will provide a foundation for advanced competencies in the specialty area of emergency public health. This multidisciplinary field will draw from the core values of the disciplines that contribute to it, and, at a minimum may serve the common mission of many of the disciplines: to improve health within the population. In addition, emergency public health can enhance the effectiveness with which health knowledge and technologies are applied in addressing public health emergencies. A core value of promoting equity in health will allow the field to decrease disparities in preventing, preparing for, intervening in, and recovering from public health emergencies.

For those who ask the question, “Why now? And why a new field of public health?” many of the answers are contained in the following chapters. The continued development of the science and practice of emergency public health through education, research and multidisciplinary collaboration is critical to ensuring health security, to responding to public health emergencies, and to ensuring that populations have access to prevention of, preparation for, intervention in and recovery from public health emergencies.

LINDA C. DEGUTIS, DRPH, MSN
Past President, American Public Health Association
Associate Professor of Emergency Medicine and Public Health
Yale University
New Haven, Connecticut

Contributors

Steven M. Anderscavage, DO, MPH

Fellow, International Emergency Medicine
Adjunct Instructor, Global Health
The George Washington University
Washington, DC

M. Douglas Anglin, PhD

Associate Director
Integrated Substance Abuse Programs
University of California at Los Angeles
Los Angeles, California

L. Kristian Arnold, MD, MPH, FACEP

ArLac Global Health Services
Lexington, Massachusetts

Satchit Balsari, MD, MPH

Instructor in Clinical Medicine, Division
of Emergency Medicine
Weill Cornell Medical College
New York, New York
Fellow, Harvard Humanitarian Initiative,
Harvard University
Cambridge, Massachusetts

Janice Blanchard, MD, MPH, PhD

Director of Health Policy Programs
Department of Emergency Medicine
The George Washington University
Washington, DC

Jennifer L. Chan, MD, MPH

Associate Faculty
Harvard Humanitarian Initiative
Cambridge, Massachusetts

Hilarie H. Cranmer, MD, MPH

Brigham and Women's Hospital
Harvard Medical School
Harvard School of Public Health
Harvard Humanitarian Incentive
Boston, Massachusetts

Joy Crook, MD, MPH

Instructor
Department of Emergency Medicine
John Hopkins School of Medicine
Baltimore, Maryland

Contributors**Cedric Dark, MD, MPH**

Department of Emergency Medicine
The George Washington University
Washington, DC

Elizabeth DeVos, MD, MPH, FACEP

Department of Emergency Medicine
The University of Florida College of
Medicine—Jacksonville
Jacksonville, Florida

Katherine Douglass, MD, MPH

Assistant Professor
Department of Emergency Medicine
The George Washington University
Washington, DC

Mark E. A. Escott, MD, MPH

Assistant Professor/Assistant Director
Division of EMS and Disaster Medicine
Baylor College of Medicine
Houston, Texas
Instructor
Master's Degree in Homeland Security
Program
Pennsylvania State University

Gregg Greenough, MD, MPH

Assistant Professor of Medicine
Harvard Medical School
Boston, Massachusetts
Research Director, Harvard Humanitarian
Initiative
Harvard University
Cambridge, Massachusetts
Attending Physician, Division of
Emergency Medicine
Brigham & Women's Hospital
Boston, Massachusetts

Carl Hacker, PhD, JD

School of Public Health
University of Texas
Houston, Texas

C. James Holliman, MD

Professor of Military and Emergency
Medicine
Uniformed Services University of the
Health Sciences
Bethesda, Maryland
Clinical Professor of Emergency Medicine
The George Washington University
Washington, DC

Uzma Rahim Khan, MBBS, MSc

Department of Emergency Medicine
Aga Khan University
Karachi, Pakistan

Angela Lee, MD, MPH

Department of Emergency Medicine
The George Washington University
Washington, DC

Heather Machen, MD, MPH

Attending Physician
Emergency Center
Texas Children's Hospital
Assistant Professor of Pediatrics
Baylor College of Medicine
Houston, Texas

Larissa May, MD, MSPH

Department of Emergency Medicine
The George Washington University
Washington, DC

Jane Carlisle Maxwell, PhD

University of Texas at Austin
Austin, Texas

Mary Pat McKay, MD, MPH

The George Washington University
Washington, DC

Christopher N. Mills, MD, MPH

Affiliate Clinical Instructor of Surgery
Division of Emergency Medicine
Stanford School of Medicine
Palo Alto, California

Terry Mulligan, DO, MPH

Director Emergency Medicine Residency
Co-director, Department of
Emergency Medicine
Universitair Medisch Centrum Utrecht
Utrecht, The Netherlands
Assistant Professor of Emergency
Medicine
Department of Emergency Medicine
University of Maryland School of
Medicine
Baltimore, Maryland

Rodney Omron, MD, MPH

Clinical Assistant Professor
Department of Emergency Medicine
University of Michigan
Ann Arbor, Michigan

Y. Veronica Pei, MD, Med, MPH

Assistant Professor
Department of Emergency Medicine
University of Maryland School of
Medicine
Baltimore, Maryland

Deborah Podus, PhD

UCLA Integrated Substance Abuse
Programs
Associate Research Sociologist
University of California at Los Angeles
Los Angeles, California

Ali Pourmand, MD, MPH

Assistant Professor
The George Washington University
Washington, DC

Junaid A. Razzak, MD, PhD, FACEP

Associate Professor
Chair, Department of Emergency
Medicine
Aga Khan University
Karachi, Pakistan

Janelle Rios, PhD

Public Health Consultant
Houston, Texas

Siddharth Ashvin Shah, MD, MPH

Greenleaf Integrative Strategies, LLC
Arlington, Virginia

Hamid Shokoohi, MD, MPH, RDMS

Assistant Professor
Department of Emergency Medicine
The George Washington University
Medical Center
Washington, DC

Mohammad Reza Soroush, MD

Janzaben Medical and Engineering Research
Tehran, Iran

Christian Theodosios, MD, MPH

Director of Global Health Programs
Emergency Medicine
University of Chicago
Chicago, Illinois

Alexander Vu, DO, MPH

John Hopkins School of Public Health
Baltimore, Maryland

Katherine Wingfield, JD, MPH

Center for Biosecurity and Public Health
Preparedness
University of Texas School of Public
Health
Houston, Texas

About the Editors

G. Bobby Kapur, MD, MPH, is the Associate Chief for Educational Affairs for the Section of Emergency Medicine at Baylor College of Medicine (BCM). Dr. Kapur developed and launched the new emergency medicine residency training program at BCM that began in July 2010, and he currently serves as the director of the residency program. Dr. Kapur also serves as the Director of Educational Affairs for the Emergency Center at Ben Taub General Hospital in Houston, Texas.

From 2005 to 2009, Dr. Kapur was the Director of the International Emergency Medicine and Global Public Health Fellowship Program for the Department of Emergency Medicine at The George Washington University. During this time, Dr. Kapur designed and taught one of the nation's first courses in emergency public health for law enforcement officials from local and national agencies. In addition, he developed and implemented emergency medicine and public health training programs for international physicians, nurses and primary healthcare workers.

Dr. Kapur's research has focused on the preparedness and response to terrorist bombing events. Collaborating with the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF), he authored one of the most comprehensive assessments of bombing events in the United States, analyzing 20 years of ATF bombing data, and he has recently published a pre-hospital care algorithm for the management of bombing victims.

Dr. Kapur's projects have included establishing emergency medicine training programs in Beijing, New Delhi, and Kolkata. Dr. Kapur also provided leadership and oversight for a three-year program with the Emergency Medicine Association of Turkey to train nearly 2,500 physicians across Turkey in evidence-based medicine. He

has also worked with partners globally on the development of emergency public health systems with an emphasis on low-cost, high-yield strategies.

Dr. Kapur has served as the Chair of the Section of International Emergency Medicine for the American College of Emergency Physicians and as Chair of the Committee of International Emergency Medicine for the Society of Academic Emergency Medicine.

Dr. Kapur earned his Bachelor of Arts degree in English Literature and Policy Studies from Rice University, his Doctor of Medicine degree with a concentration in medical ethics from Baylor College of Medicine, and his Master of Public Health in Global Health from Harvard University. Dr. Kapur completed his Emergency Medicine residency training at Yale University and his International Emergency Medicine fellowship at Harvard University and Brigham and Women's Hospital.

Jeffrey P. Smith, MD, MPH, earned his Doctor of Medicine degree from the University of Maryland, and his Master of Public Health degree from The George Washington University. In addition to serving as Co-Director of the Ronald Reagan Institute of Emergency Medicine at The George Washington University, Dr. Smith has also taught courses in emergency medicine.