
THIRD EDITION

DISASTER NURSING AND EMERGENCY PREPAREDNESS

**FOR CHEMICAL, BIOLOGICAL,
AND RADIOLOGICAL TERRORISM
AND OTHER HAZARDS**

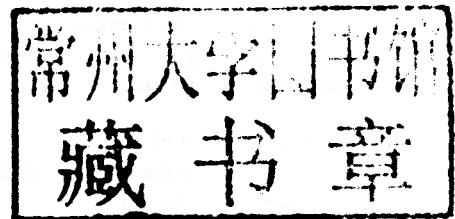
Tener Goodwin Veenema

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AND OTHER HAZARDS**

Third Edition

Tener Goodwin Veenema, PhD, MPH, MS, RN, FAAN

EDITOR



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**DISASTER NURSING AND
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RADIOLOGICAL TERRORISM
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Third Edition

Tener Goodwin Veenema, PhD, MPH, MS, RN, FAAN, is an internationally recognized expert in disaster response and emergency health services, and in public health emergency preparedness. As President and Chief Executive Officer of the Tener Consulting Group, LLC, Dr. Veenema has served as senior consultant to many agencies of the United States Government, including the Department of Health and Human Services, Department of Homeland Security, Department of Veterans Affairs, and most recently FEMA and the Administration for Children and Families. She has received numerous awards and research grants for her work, and is an elected Fellow in both the National Academies of Practice and the American Academy of Nursing. Veenema is a member of the National American Red Cross Scientific Advisory Board, Disaster and Mental Health Services subcommittee, and has been a volunteer American Red Cross nurse for many years.

As Senior Consultant for Disaster Preparedness to the Office of Human Services Emergency Preparedness and Response, Administration for Children and Families at the U.S. Department of Health and Human Services, Dr. Veenema was advisor to the *FEMA/ACF Disaster Case Management Program* from 2009 to 2012 and lead author for the *Interim Report of the National Commission on Children and Disasters* (2010). While at the University of Rochester, Dr. Veenema developed the curriculum for a 30-credit master's program entitled "Leadership in Health Care Systems: Disaster Response and Emergency Management," the first program of its kind in the country to be offered at a school of nursing.

A highly successful author and editor, Dr. Veenema has published textbooks, handbooks, decision support software and multiple articles on emergency nursing and disaster preparedness. She is the author and developer of two nationally award winning Disaster e-Learning Courses, *Red Cross ReadyRN Disaster and Emergency Preparedness for Health Services* (American Red Cross, 2007) and *ReadyRN* (Elsevier, MC Strategies, 2008). These interactive, e-learning programs have trained thousands of nurses and other disaster health services responders in caring for victims of disasters, terrorist events, and public health emergencies. A highly motivated, energetic self-directed leader with a high degree of creativity and innovation, Dr. Veenema is in high demand as a speaker and her decision-support software and information technology applications for disaster response have been presented at conferences around the globe.

Dr. Veenema received her Bachelor of Science degree in Nursing from Columbia University in 1980, a Master of Science in Nursing Administration (1992), post-Master's degree in the Care of Children and Families (1993) from the University of Rochester School of Nursing, and a Master's in Public Health (1999) and PhD in Health Services Research and Policy (2001) from the University of Rochester School of Medicine and Dentistry. A nationally certified Pediatric Nurse Practitioner, Dr. Veenema was the recipient of the 2010 Distinguished Alumni Leadership Award from her high school alma mater Suffield Academy, in Suffield, Connecticut.

Our world is not safe. Fraught with peril, it continues to be a dangerous place in which to live. And yet we know that our children need safe homes, safe schools, and safe communities to live in if they are to grow to be healthy, happy, and secure adults. They are counting on us to be there for them—no matter what the circumstances. They are counting on us to provide love, protection, and a safe harbor in the storm. They are counting on us to be prepared. They are counting on us to rescue them when they need rescuing. This textbook is dedicated to our nation's children—four in particular. To Kyle, Kendall, Blair, and Ryne—you are everything to me. Always know how much I love you and how proud I am of you. Know that no matter how far away life takes you, home is always a safe harbor. And know that I tried to make the world a safer place.

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FOREWORD

In this third edition of *Disaster Nursing and Emergency Preparedness for Chemical, Biological, and Radiological Terrorism and Other Hazards*, Dr. Veenema continues her mission to help our nation's nurses develop the knowledge and skills needed to efficiently and effectively respond to disasters. As the nation's largest health care workforce, it is essential to ensure that all nurses understand the implications of natural and man-made disasters, so they are prepared to respond if required. This edition builds on the solid foundation of the first two editions with an expanded focus on human services, the mental health aspects of disasters, and the needs of those who are most vulnerable during disasters, such as children. It also includes more of an international focus.

As we commemorate the 11th anniversary of the terrorist attacks of September 11, 2001, it is time to reflect on how far we have come in our preparedness to respond not only to natural disasters, but also the threat of terrorism. The National Health Security Strategy was published in December 2009 and is intended to galvanize efforts to minimize the health consequences of disasters (www.phe.gov/Preparedness/planning/authority/nhss/strategy/Documents/nhss-final.pdf). The vision for this strategy is built on a foundation of community resilience—healthy individuals, families, and communities with access to health care and the knowledge and resources to know what to do to care for themselves and others in both routine and emergency situations.

As such, the nation has strengthened community resilience and supported initiatives to prepare for a number of threats. For example, investments in hospital and public health emergency preparedness have provided funding to improve surge capacity and enhance community and health care preparedness to promote safer

and more resilient communities. To aid state and local responders in preparing and planning for public health incidents, plans and playbooks have been developed to address the broad range of threats—from terrorism to natural disasters. An all-hazards and whole-community approach is needed for our nation to be resilient in the face of disaster and this must include the nurses in our country.

Investments have been made to develop and procure medical countermeasures to treat the effects of chemical, biological, radiological, or nuclear (CBRN) agents and other emerging infectious diseases. Following any public health incident, it is critical that adequate response capabilities and personnel are available, including volunteer nurses who sign up in advance to respond if needed. Since 2001, we have also invested in detection capabilities and are better able to test and monitor public health threats. The U.S. Department of Health and Human Services, Office of the Assistant Secretary for Preparedness and Response now has Regional Emergency Coordinators (RECs) located throughout the country to promote coordination among federal, state, local, tribal, and territorial officials and health care representatives. As demonstrated during the events of September 11, 2001, effective coordination and communication are important to ensure all responders are effectively working together.

In this respect, federal partners, working with state and local officials, wrote the *National Response Framework*. This Framework presents the guiding principles that enable all response partners to prepare for and provide a unified national response to disasters and emergencies—from the smallest incident to the largest catastrophe. The Framework describes how communities, tribes, states, the

federal government, and private-sector and nongovernmental partners apply these principles for a coordinated, effective national response.

Many times nurses assume that they aren't emergency responders, so they don't need to understand how the system works. When a disaster strikes a community—whether a bus accident, a tornado, a hurricane, or terrorist attack—nurses will be on the front lines helping those who are in need. To protect themselves, their families, and their communities, nurses need to understand the

principles and content of this comprehensive textbook. I encourage all nurses to develop the knowledge and skills presented here that are needed to achieve the vision of resilient communities outlined in the National Health Security Strategy.

Ann R. Knebel, DNSC, RN, FAAN
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FOREWORD

Recent history has shaped our understanding of the health and medical impact of natural disasters, especially lessons learned from the January 2010 earthquake in Haiti and the powerful 9.0-magnitude earthquake that hit Japan on March 11, 2011, unleashing massive tsunami waves that crashed into Japan's northeastern coast of Honshu, the largest and main island of Japan. According to the Government of Japan, at least 25,000 people were confirmed dead. Japan's social, technical, administrative, political, legal, health care, and economic systems were tested to their limits by the nature, degree, and extent of the socioeconomic impacts of the earthquake, tsunami, and by the looming possibility of a "nightmare nuclear disaster." During April and May of last year, there was record flooding along the Mississippi River with displacement of tens of thousands and 2011 was the worst year on record for tornado-related deaths (both for an outbreak [375 deaths] and for a single event [130 deaths]), and food-borne disease outbreaks. With the incidence of such catastrophes of nature—and the number of people affected by such events—on the increase, the importance of disasters as a public health problem has captured the attention of the world. This situation represents an unprecedented challenge to medical and public health practitioners.

Ten years have now passed since the landmark first edition of *Disaster Nursing and Emergency Preparedness for Chemical, Biological, and Radiological Terrorism and Other Hazards* by Tener Goodwin Veenema, PhD, MPH, was published in the wake of the catastrophic events of September 11, 2001. The attack on the World Trade Center and ensuing anthrax releases in the U.S. Postal System registered the awareness and the recognition of the nursing professional in disaster management. Dr. Veenema correctly believed at the time that nurses

knew how to be nurses and were able to provide consistently high-quality clinical care but needed a better understanding of the structure of the health systems' response to disasters. Thus, the first edition of the textbook presented multiple topics such as disaster management, triage, leadership, allocation of scarce resources from a health systems perspective, with a broad focus that included public health emergency preparedness and also terrorism response. The second edition, published in 2007, presented proven management methods and practices essential for the security of our nation against domestic and foreign threats. It became by far the most up-to-date course textbook and desk reference available for nursing professionals and health managers to be ready to respond to disasters and other public health emergencies. Professional nurses and emergency managers found the book absolutely indispensable.

The first and second editions were so successful in part because the author was able to convey complex topics such as chemical, biological, and radiological terrorism, and other hazards in a very readable and understandable manner. It also provided a quick reference for nurses in both public health and clinical practice who required quickly available information in an easy-to-access "practice guide" format. The third edition of *Disaster Nursing and Emergency Preparedness* was confronted with the daunting task of both summarizing the many important new findings that have now become available through extensive research and the experience of public health practitioners, and yet maintain the convenience and user-friendliness of the first two editions. Dr. Veenema has succeeded in accomplishing this magnificently.

The third edition of *Disaster Nursing and Emergency Preparedness* has almost double the number of pages compared with the first edition including a much stronger

and expanded clinical management section to address clinical situations not frequently encountered by nurses (e.g., blast injuries, burn mass casualties management, and emerging infectious diseases). The reader is provided with substantially greater coverage of the needs of children and adolescents following the recommendations of the National Commission on Children and Disasters (2010) with updated and expanded chapters and pediatric case studies on children's mental health, Disaster Nursing in Schools and Congregate Child Care Settings. Completely new chapters have been added on Social Disruption, Individual Empowerment and Community Resilience; Climate Change and the Role of the Nurse; Global Complex Emergencies; Information Technology in Disaster Response; Care Settings; Care

of the Pregnant Woman and Newborn During Disasters; Hospital and Emergency Department Preparedness; Innovations in Disaster Nursing Education; Medical Countermeasures Dispensing; and Care of Patients with HIV/AIDS During Disasters.

Disaster Nursing and Emergency Preparedness for Chemical, Biological, and Radiological Terrorism and Other Hazards by Tener Goodwin Veenema will continue to serve as both a timely and comprehensive text for this nation's 2.7 million nurses and for educating the next generation of nursing professionals.

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FOREWORD

The auspicious arrival of this third edition of *Disaster Nursing and Emergency Preparedness* is a most opportune time in the history of local, national, and global catastrophes. Reports on the number and kinds of disasters in daily news media are almost overwhelming. The magnitude of these disasters, man-made or natural, have seemed to escalate in this past decade both in the United States and also in faraway places: like the tsunami that created the nuclear disaster in Japan, to the floods in the northeast United States and Thailand, to the oil spills in the Gulf of Mexico and the earthquakes in Haiti, China, and Turkey. These horrendous and tragic human situations are generating the urgency for a great need for awareness, preparedness, political prowess, and leadership, and, most of all, teamwork on all levels of governments, educational institutions, human services, environmental organizations, and many others.

This updated edition addresses all of these needs with an in-depth focus on the special physical and mental needs of children in various venues, on vulnerable populations, and those of high risk such as the elderly and chronically ill.

The contributing authors read like a “Who’s Who” of disaster leaders. They lend their special expertise and insights, which are supported and elucidated by cogent learning strategies in the use of case studies, student questions, and packed content in all areas of disaster participation, preparedness, policies, and research.

Many teachers, students, practitioners, and policy-makers will find this edition a treasure trove of new information, ideas and ideologies, and will use this volume as a text, a reference, and resource for the challenging work they do in disaster preparedness and practice. For over 10 years *Disaster Nursing and Emergency Preparedness for Chemical, Biological, and Radiological Terrorism and Other Hazards* has been the hallmark text in its field and this edition proves to be the best ever.

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FOREWORD

As a Robert Wood Johnson Executive Nurse Fellow, Dr. Veenema, a disaster nursing expert, has dedicated her professional career to ensuring that nurses, the largest segment of the health care workforce, have the knowledge and skills they need to respond to disasters and alleviate human suffering. *Disaster Nursing and Emergency Preparedness for Chemical, Biological, and Radiological Terrorism, and Other Hazards*, third edition, provides the nursing field with a phenomenally comprehensive textbook of best practices to help ensure that the nursing workforce is adequately prepared to respond to any disaster or public health emergency.

This book should be incorporated into the curriculum at every school of nursing to ensure that students develop the competencies to prepare for chemical, biological, and radiological attacks, as well as for public health emergencies, response, and recovery. Furthermore, this book should provide nurses at all stages of their careers with updated disaster preparedness training to enable them to provide the best care possible when disasters strike.

As nurses, we are uniquely trained to be able to give back to our society in times of greatest suffering and it is my firm belief that nurses, no matter what their chosen specialty, should be prepared to give back in this way. We have the compassion and ability to provide care and emotional and spiritual support to those who have lost family members and friends and seen their communities devastated, and we can refer survivors on to other professionals as needed. It is our duty to give back to society by using our gifts and skills in times of greatest need and

prepare ourselves for this role. The American Red Cross started the National Student Nurse Program to engage prelicensure nursing students as volunteers to jump start this process.

Volunteering as a Red Cross nurse myself following the tornadoes in Alabama in 2011, I met an inconsolable 21-year-old, who was swept up into the sky holding onto her baby for dear life, and whose hard landing back to the ground caused six broken ribs, a torn knee, a black eye, a broken collarbone, and pneumonia. I provided her with a doctor's visit, filled prescriptions, food and gas money to get to her doctor's appointments and pick up her baby (who was doing well) from her boyfriend's house many miles away. At the end of 2 hours she smiled and asked how she would ever repay me. I said simply, "pay it forward." She hugged me tightly, groaned from the pain of her broken ribs, and said she would. And I know she will.

It is my hope that all schools of nursing will use this book as part of a disaster preparedness curriculum and that all nurses will become familiar with its contents and inspired to volunteer when disaster strikes. Disaster victims and their families deserve nothing less from our nation's nurses.

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