



SECOND EDITION

DISASTER NURSING
and EMERGENCY
PREPAREDNESS

for Chemical, Biological,
and Radiological Terrorism
and Other Hazards

TENER GOODWIN VEENEMA
EDITOR

Tener Goodwin Veenema, PhD, MPH, MS, CPNP,

is an Associate Professor of Clinical Nursing, Assistant Professor of Emergency Medicine, and Program Director for Disaster Nursing and Strategic Initiatives at the Center for Disaster Medicine and Emergency Preparedness at the University of Rochester School of Nursing and School of Medicine and Dentistry. Dr. Veenema is also President and Chief Executive Officer of the Ten**ER** Consulting Group, LLC, which provides consultation and workforce development for emergency preparedness to federal, state agencies, and corporate organizations. She has received numerous awards and research grants for her work, and in June 2004, Dr. Veenema was elected into the National Academies of Practice and was selected as a 2004 Robert Wood Johnson Executive Nurse Fellow. In 2006, Dr. Veenema was the recipient of the Klainer Entrepreneurial Award in health care.

Dr. Veenema received her Bachelor of Science degree in Nursing from Columbia University in 1980 and went on to obtain a Master of Science in Nursing Administration (1992) and a Master in Public Health (1999) from the University of Rochester School of Medicine and Dentistry. In 2001, she earned a PhD in Health Services Research and Policy from the same institution. Dr. Veenema is a nationally certified Pediatric Nurse Practitioner, and worked for many years in the Pediatric Emergency Department at Strong Memorial Hospital (Rochester, New York).

A highly successful author and editor, Dr. Veenema has published books and multiple articles on emergency nursing and disaster preparedness. The first edition of this textbook, published in August 2003, received an *American Journal of Nursing* Book-of-the-Year Award.

Dr. Tener Goodwin Veenema, in her role as Chief Executive Officer of the Ten**ER** Consulting Group, LLC, is the author and developer of “ReadyRN: A Comprehensive Curriculum for Disaster Nursing and Emergency

Preparedness” and collaborated with the American Red Cross to customize the ReadyRN curriculum for use by the American Red Cross in educating and training American Red Cross health care professionals in providing health-related disaster and emergency response services.

Dr. Veenema’s ReadyRN *Comprehensive Curriculum for Disaster Nursing and Emergency Preparedness* was also published in 2007 as an innovative e-learning online course by Elsevier, and the companion ReadyRN *Handbook for Disaster Nursing and Emergency Preparedness* will be published in fall 2007.

While at the University of Rochester, Dr. Veenema developed the curriculum for a 30-credit Masters 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. The program offers course content on the Fundamentals of Disaster Management, Chemical, Biological and Radiological Terrorism, Global Public Health and Complex Human Emergencies, Leadership and Strategic Decision Making, and Communication in Disaster Response and Emergency Preparedness.

Dr. Veenema has served as a reviewer to the Institute of Medicine Committee on the Review Panel for the Smallpox Vaccination Implementation, Jane’s *ChemBio Handbook*, 2nd Edition, and serves on the editorial board for the journal *Disaster Management and Response*, sponsored by the Emergency Nurses Association. Dr. Veenema is an Associate Editor for the *Journal of Disaster Medicine and Public Health Preparedness*, sponsored by the American Medical Association.

Dr. Veenema frequently serves as a subject-matter expert for the National American Red Cross, multiple state health departments and nurses associations, as well as the Registered Nurses Association of Ontario, Canada. She is a member of the World Association of Disaster Medicine (WADEM).

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It is quite probable that at some time in the future, nurses may be called upon to respond to a mass casualty event or disaster outside of the hospital. Advance preparation of our national nursing workforce for such an event is predicted on the belief that mastery of the knowledge and skills needed to respond appropriately to such an event can improve patient outcomes.

I wrote these words in the spring of 2002 as I finished the summary section of chapter 9 (p. 199) in the first edition of this book—3 1/2 years before Hurricane Katrina would wreak its devastation on the communities of the Gulf Coast. When the first edition of the book was released, our country was still reeling from the 9/11 attacks and fearful of another outbreak of anthrax. These two events had resulted in an immediate awareness of our lack of national emergency preparedness and heightened vulnerability to disaster events. Health care providers were barraged by an onslaught of information from numerous sources (of varying quality) regarding topics such as disaster planning and response, biological agents, hazardous materials accidents, the dangers of radiation, therapeutics, and so forth. Resources on the Internet alone had increased exponentially. My own research on these topics had revealed that the existing disaster textbooks were written by and for physicians and public health officials. There was a major gap in the literature for nurses. Given the approximately 2.7 million nurses in this country, I found this to be not only unacceptable but a *major threat to population health outcomes*. Therefore, the genesis of the book was the desire to fill this gap in the literature and to provide nurses with a comprehensive resource that was evidence based whenever possible, and broad in scope and deep in detail. We were very successful and the first edition was extremely well received, garnering an AJN Book of the Year award along with multiple additional accolades, and for that I am eternally grateful. The book is currently being used nationwide by universities and schools of nursing, hospitals, public health departments, and multiple other sites where nurses work.

The second edition of this textbook has an equally ambitious goal—to once again provide nurses and nurse practitioners with the most *current, valid, and reliable* information available for them to acquire the knowledge

and skill set they will need to keep themselves, their patients, and families safe during any disaster event. Once again, we have held ourselves to the highest standards possible. Every chapter in the book has been researched, reviewed by experts, and matched to the highest standards for preparing health professions' students for terrorism, disaster events, and public health emergencies.

The framework of the book is consistent with the United States National Response Plan, the National Incident Management System, and is based on the Centers for Disease Control and Prevention's (CDC) Competencies for public health preparedness and the CDC Guidelines for response to chemical, biological, and radiological events. This textbook will provide nurses with a heightened awareness for disasters and mass casualty incidents, a solid foundation of knowledge (educational competencies) and a tool box of skills (occupational competencies) to respond in a timely and appropriate manner.

Since September 11, 2001, our national concerns for the health and safety of our citizens has expanded to include additional hazards such as emerging infectious diseases (SARS, West Nile virus, avian influenza), the detonation of major explosive devices, and the use of nuclear weapons by countries unfriendly to the United States. We possess a heightened awareness of the forces of Mother Nature and the health impact on communities affected by natural disasters. We continue to face a growing national shortage of nurses and nurse educators, a health care system that is severely stressed financially, and emergency departments that are functioning in disaster mode on a daily basis. We have reason to believe that these challenges for the profession will only intensify in the coming years. Nurses are challenged to be prepared for all hazards—to plan for pandemic influenza, chemical, biological, radiological/nuclear, and explosive (CBRNE) events, mass casualty incidents involving major burns, and surge capacity to accommodate a sudden influx of hundreds, possibly thousands, of patients. In response to these concerns and the requests of nurses across the country, I have added several new chapters in the second edition that serve to strengthen the health systems focus of the book and to add a strong clinical presence.

Since 2003, the Department of Homeland Security, the Federal Emergency Management Administration (FEMA), the CDC, and other federal and nonfederal agencies have devoted significant resources to increasing our level of national emergency preparedness. We had made significant progress on certain fronts, but with regard to our level of workforce preparedness in the health professions, we have a long way to go. In the years since the first edition of this textbook was published, other nursing texts and educational resources have been developed and published, and this author applauds these initiatives. There is much work to be done, and it is personally rewarding to witness increased interest in disaster nursing as more nurses get involved.

As an emergency nurse and pediatric nurse practitioner, I have worked in the field of disaster nursing and emergency preparedness for many years, with a focus on promoting the health of the community and the health of the consumer by structuring, developing, and fostering an environment that is prepared for any disaster or major public health emergency. I have lobbied for the advancement of the profession of nursing in the disaster policy and education arena, and I remain personally committed to my work in preparing a *national nursing workforce that is adequately prepared* to respond to any disaster or public health emergency. This includes working to establish sustainable community partnerships that foster collaboration and mutual planning for the health of our community. It includes looking at innovative applications of technology to enhance sustainable learning and disaster nursing response. It means giving reflective consideration of the realities of the clinical demands placed on nurses during catastrophic events and the need for consideration of altered standards for clinical care during disasters and public health emergencies.

This textbook continues to be a reflection of my love for writing and research, as well as a *deep desire to help nurses protect themselves*, their families, and their communities. Disaster nursing is a patient safety issue. Nurses can only protect their patients if they themselves are safe first. The second edition represents a substantive attempt to collect, expand, update, and include the most valid and reliable information currently available about various disasters, public health emergencies, and acts of terrorism. The target audience for the book is every nurse in America—*making every nurse a prepared nurse*—staff nurses, nurse practitioners, educators, and administrators. The scope of the book is broad and the depth of detail intricate. My goal is to produce a second edition that represents a well-researched and well-organized scholarly work that will serve as a major reference for all our nation's nurses on the topics of disaster nursing and emergency preparedness. It is my hope that nurse educators will be pleased to discover the expanded organization of the book and the inclusion of new chapters, case studies, and study questions. The insertion of Internet-based activities is designed to stimulate critical thinking in students and to provide them with the skill set to stay updated regarding these topics.

Ideally, this book represents the foundation for *best practice in disaster nursing and emergency preparedness*, and is a stepping stone for the discipline of disaster nursing research. Chapters in this book were based on empirical evidence whenever it was available. However, the amount of research in existence addressing disaster nursing and health outcomes is limited, and much work remains to be done. The editor welcomes constructive comments regarding the content of this text.

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Acknowledgments

As with the first edition of this book, I continue to profess that researching, revising, designing, and delivering this book was a true labor of love—I enjoyed every minute of it! And like any effective disaster response, this textbook was a coordinated team effort. The second edition is significantly larger than the first—several new chapters have been added, all of the content updated, and the clinical focus expanded. Additionally, the entire book has been mapped to the Centers for Disease Control and Prevention’s competencies for public health emergency preparedness—this represents nothing less than a Herculean effort. There are so many exceptional individuals, all over the country, who helped to make this book a reality.

My special thanks must first go to each of the wonderful chapter authors who researched, reviewed, and revised their manuscripts, assuring that the information contained within was valid, accurate, and reliable, and reflected the most current state of the science. This was a tremendous challenge given the highly transitional nature of many of the topic areas. The science was rapidly evolving (and continues to evolve) and as with the first edition, the structure of many disaster and emergency response systems was rapidly changing (and continues to change) during the year it was written.

I would like to first thank my fabulous colleagues who were chapter authors and/or contributors for the first edition and stayed committed to this project for the second edition. My *very sincere thanks* go to Kathleen Coyne Plum, PhD, RN, NPP (Monroe County Department of Human Services); Kristine Qureshi, RN, CEN, DNSc (University of Hawaii); Brigitte L. Nacos, PhD and Kristine M. Gebbie, DrPH, RN, FAAN (Columbia University); Lisa Marie Bernardo, RN, PhD, MPH (University of Pittsburgh); Erica Rihl Pryor, RN, PhD and Dave Pigott, MD, FACEP (University of Alabama); Linda Landesman, DrPH, MSW, ACSW, LCSW, BCD (NYC Health & Hospitals Consortium); Kathryn McCabe Votava, PhD, RN and Cathy Peters, MS, RN, APRN-BC (University of Rochester); P. Andrew Karam, PhD, CHP (MJW Corporation); Joan Stanley, PhD, RN, CRNP (American Association of Colleges of Nursing); Lt. Col. Richard Ricciardi, RN, FNP and Patricia Hinton Walker, PhD, RN, FAAN (Uniformed Services University of the Health

Services); Janice B. Griffin Agazio, PhD, CRNP, RN (The Catholic University of America); Eric Croddy, MA (Monterey Institute for International Studies); and Gary Ackerman, MA (Center for Terrorism and Intelligence Studies). Thank you so much for your wonderful contributions and for your ongoing support of this book.

Very special acknowledgments and many thanks go to my international colleagues at the University of Ulster—Pat Deeny, Kevin Davies, and Mark Gillespie, and welcome to Wendy Spencer. These wonderful individuals were committed to providing a broad and illustrative international perspective for the book. Their resultant chapter, *Global Issues in Disaster Relief Nursing*, is evidence of their expert knowledge, extensive experience in the field, and dedication to international collegiality. I will always remain grateful to each of them for their contributions to the field.

My thanks go once again to Jonathan Tucker, my special contributor, for allowing me to reprint a portion of his work from his wonderful book *Scourge: The Once and Future Threat of Smallpox*. It continues to be the perfect segue into the Chemical and Biological Terrorism section of the book.

I wish to thank each of the case study authors and welcome the following new authors to the second edition of the book. Thanks go to Ziad N. Kazzi, MD, FAAEM, along with his colleagues Dave Pigott, MD, FACEP and Erica Pryor, RN, PhD at the University of Alabama at Birmingham Center for Disaster Preparedness. The quality of their work is incredible, as is their generosity in sharing it.

Another very special welcome and thanks go to Roberta Lavin (Health and Human Services) and Lynn Slepski (Department of Homeland Security). Roberta and Lynn made sure that the descriptions of the National Response Plan and all components of the federal disaster program were as accurate as possible up to the time of publication. They are also two of the nicest and most generous individuals one would ever want to meet.

Welcome and thanks go to Christopher Lentz, MD, FACS, FCCM; Dixie Reid, PA; Brooke Rea, MS, RN; and Kerry Kehoe, MS (University of Rochester) for their chapter addressing the recognition and management of burns and guidelines for disaster planning for a surge of

burn patients. Dr. Lentz, as the Director of the regional Burn/Trauma Center at the University of Rochester Medical Center, along with his wife Dixie Reid, are burn experts and tireless advocates for clinical excellence in the care of the severely burned patient. Both Brooke Rea (Burn Program Manager) and Kerry Kehoe (former Administrator Division of Trauma & Burn) are graduates of the Leadership in Health Care Systems in Disaster Response and Emergency Health Care Systems, and so it is an even greater pleasure to be able to include them in this edition of the book. Brooke's talents and leadership skills were clearly evident in her effort to produce this chapter, and I send her my special thanks.

A sincere welcome and thanks go out to two new authors and former students of mine, Tara Sacco, MS, BS, RN and Jennifer Byrnes, MLS, MPH (University of Rochester). Tara is a graduate of the Leadership in Health Care Systems program in Health Promotion and Health Education; Jennifer is a graduate of the Master's in Public Health program. Both are talented researchers and writers, and it is my guess that you will be hearing more from them in the future. Their chapters on Traumatic Injuries Due to Explosions and Blast Effects, and Emerging Infectious Diseases (respectively) broadly expanded the clinical focus of the book and provided valuable new clinical resource information for nurses.

Welcome and thanks go to Amy T. Campbell, JD, MBE (University of Rochester, Division of Medical Humanities) for her detailed legal review and update of the chapter on Legal and Ethical Issues in Disaster Response and to Joy Spellman (Burlington County College, New Jersey) for her contributions on preparing and promoting the role of the public health nurses during disasters. Both of these authors were so gracious and generous with their expertise. Thank you.

A very special warm welcome and thanks go to Elizabeth A. Davis, JD, Ed.M and her colleagues Alan Clive, PhD, Jane A. Kushma, PhD, and Jennifer Mincin, MPA. Elizabeth is the Founder and President of Elizabeth Ann Davis Associates (<http://www.eadassociates.com/>) and is a nationally recognized expert/advocate for vulnerable populations. It was extremely important to me to add a substantive piece on planning for and responding to the needs of high-risk, high-vulnerability populations in this edition of the book, and Alan, Elizabeth, Jane, and Jennifer provided a superb chapter on this topic (and in a relatively short time frame). My sincere thanks and admiration go out to each of you for your work.

Welcome and gratitude go to Manish Shah, MD, MPH, FACEP; Jeremy Cushman, MD, MS; Charles Maddow, MD, FACEP; and Jonnathan Busko, MD, MPH, EMT-P (University of Rochester, Department of Emergency Medicine), and to my colleague John Benitez, MD, MPH at the Center for Disaster Medicine and

Emergency Preparedness (University of Rochester, Department of Emergency Medicine). Manish Shah, along with his colleagues Jeremy, Charles, and Jonnathan, contributed a comprehensive overview of Emergency Medical Services as it currently exists in this country. This well-designed and well-organized chapter was a wonderful new addition to the book. John Benitez is Director of the Western New York Regional Poison Control Center, who along with Sharon Benware, RN, contributed to the chapter addressing chemical agents of concern.

I want to express my continued appreciation and sincere gratitude to Lisa Bernardo, Erica Pryor, Kristine Qureshi, and Kathy Plum for their elegant contributions, for their ongoing support and encouragement, and for their willingness to make recommendations that strengthened the content of the book. I have the ultimate respect for each of you, and I am sincerely grateful for our ongoing relationships!

Special thanks go out to my wonderful friends and colleagues, Diane Yeater, Associate Director for Disaster Health Services and to Nancy McKelvey, Chief Nurse at the American Red Cross, National Headquarters in Washington, DC. Thank you for your contributions and your insight into national disaster preparedness and response initiatives.

I am so fortunate to call the University of Rochester School of Nursing my academic home. This phenomenal school is a **leader in excellence in nursing education** and in entrepreneurship for nurses, and I have learned something from every one of my talented colleagues. I wish to once again thank Dean Patricia Chiverton for creating an environment that supports new and visionary initiatives and for supporting and encouraging me to do the work that I want to do. I am eternally grateful to Pat and to each of my fellow faculty members in the Leadership in Health Care Systems Master's Program.

As I finish the second edition of this book, I would also like to acknowledge 19 wonderfully talented individuals and **very special, terrific friends**—my colleagues in the **2004 Robert Wood Johnson Executive Nurse Fellowship**: Carla Baumann, Suzanne Boyle, Kathleen Capitulo, June Chan, Theresa Daggi, Kathryn Fiantt, Margaret Frankhauser, Mary Hooshmand, Paul Kuehnert, Mary Joan Ladden, Joan Marren, Marcia Maurer, Marcella McKay, Wanda Montalvo, Kathleen Murphy, Cheri Rinehart, Mary Lou de Leon Siantz, Kristen Swanson, and Bonnie Westra. We have shared an amazing experience in this wonderful program, and they have provided me with insight and guidance for my work, of which this book represents a portion of the overall project—*ReadyRN: Making Every Nurse a Prepared Nurse*. Their incredible work inspired me. But mostly I am grateful for the fun, friendship, and support they offered. They believed in my vision for disaster

nursing and for this book, and they are always there for me when I need them. Thank you.

Special thanks to Loretta Ford, former Dean and Professor Emeritus at the University of Rochester School of Nursing, and founder of the nurse practitioner role. I have had the amazing good fortune of having Lee as my mentor in the Robert Wood Johnson Executive Nurse Fellowship Program. There are no words to describe this feisty, energetic, phenomenally talented nurse and scholar. She is a role model to the entire profession of nursing, and my life is richer for having known her. Her wisdom and guidance have played a pivotal role in much of my work the past few years. Her kindness and support have sustained me. Thank you so much Lee.

I wish to thank all of my reviewers and those who provided valued commentary and recommendations. Special thanks to Lori Barrette (University of Rochester), Janice Springer (American Red Cross), and Lou Romig, MD, FAAP, FACEP. Just as there is no perfect research study, there is also not a perfect textbook or reference manual. This fact, however, did not dissuade us from seeking to make this book and every section in it the very best it could be. Many thanks to all who shared their wisdom and expertise during the preparation of the book.

I would like to acknowledge Sally Barhydt and her colleagues at Springer Publishing Company in New York City. I sincerely thank you, Sally, for all your hard work in assisting with the publication of the second edition, and for your ongoing commitment to me as an author.

I will be eternally grateful to my colleague and research assistant Adam B. Rains for his assistance with the preparation of this very large manuscript. Adam's intelligence, humor and wit—and limitless talent—were a gift to this project.

Many thanks go to three very special women who are the *best friends* anyone could ask for—Katherine Lostumbo, Barbara Wale, and Maryanne Townsend. The warmth of your friendship continues to sustain me.

Finally, the people to whom I owe the most are my family. To my mother, thank you for all you have done for me and for thinking that I am much more capable than I really am. You often told me, “to thine own self be true,” when making my life's decisions—great advice that I have often passed down to my children. Thanks to my dad—I love you lots.

To my four children, I sincerely thank you for the joy you have brought to my life. *You* are my greatest accomplishment. My sons Kyle, Blair, and Ryne—I love you so much. A huge and *especially special thank you* goes to my wonderful daughter Kendall, who has been a terrific help to me for many, many years. Her words of encouragement (and the sound of her laughter) have always kept me going! She is my very best friend and the most incredible person I know.

And to my husband and partner in all life's adventures, my deepest thanks. I could not have done any of this without you. You have helped me in too many ways to mention, and I am so appreciative of each and every moment we have shared. Thank you.

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Dedication

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 that home is a safe harbor. And know that I tried to make the world a safer place.

Most doctors, nurses, and other health workers look forward to a life pursuing their chosen career in relative order, peace, and tranquility. However, the unexpected, by its very nature, can strike anywhere, at any time, and involve anybody or everybody, including those who are unprepared. A disaster can happen in any community at any time. It is an inescapable fact brought into focus by the calamitous events we have seen befall our fellow citizens in just the past 5 years. From the four hurricanes that hit our coastal regions in just one 6-week period in 2004 to the twin shocks of the South Asia tsunami and Hurricane Katrina; earthquakes in Indonesia; floods; terrorist bombings in the London subway and Iraq (an everyday phenomenon in Baghdad); and a humanitarian crisis of unimaginable horror in Sudan, it is clear that no community is immune. Nurses have a primary role in preparing for and managing medical care during these episodic, but catastrophic, events. On a global scale, nurses are active participants in caring for victims of a wide variety of disasters that take place on an almost daily basis.

The second edition of *Disaster Nursing and Emergency Preparedness for Chemical, Biological, and Radiological Terrorism and Other Hazards* has been designed to provide emergency caregivers with a concise reference for managing specific disaster-preparedness and response issues while providing the prerequisite background necessary to begin an in-depth study of the health consequences of the most common types of disasters. The experience of the editor and many of the chapter authors is unique. The organizations for which they work cover the range of disasters that strike this world. We owe an enormous debt of gratitude to them all for their unstinting efforts to update this classic work.

Postdisaster evaluations conducted by nurses of the management of disasters by health professionals have provided critical data for mitigating the human impact of these events and enhancing future responses to disasters. This has been especially true regarding Hurricane Katrina. As a result, disaster management is well recognized as far more than just triage and mass casualty management. Since the first edition of this book was published, we have seen significant changes in the health management of disasters, whether natural

or man-made. It is increasingly appreciated that the phenomenon goes far beyond the punctual provision of relief to the population affected and extends from advanced preparedness to the problems of long-term rehabilitation. While always emphasizing the use of proven management methods and practices, Dr. Veenema challenges nursing health professionals with questions that must still be answered in order for them to respond effectively in emergency situations. I know that decision makers at the highest echelons of government have increasingly relied on the nursing profession to address the myriad problems facing a disaster-affected community.

In the relatively short period of time that has elapsed since September 11, 2001, it is remarkable that a considerable body of new knowledge and experience related to the adverse health effects of disasters has already accumulated. In fact, disaster research has accelerated to such an extent that we probably need to update the results of this research at a minimum of every year so that we can apply the lessons learned during one disaster to the management of the next. Conveying so much information in so few pages, with the right mix of scientific data and human concern, in a practical and clear format, is no mean task. As the most comprehensive textbook on disaster nursing ever published (except for the groundbreaking first edition published in 2003), *Disaster Nursing and Emergency Preparedness for Chemical, Biological, and Radiological Terrorism and Other Hazards* does exactly that and more. With years of experience, Dr. Veenema and co-authors give the reader ample technical descriptions of each kind of disaster (particularly chemical, biological, radiological terrorism, and other hazards), an examination of the kinds of issues and problems that arise in planning hospital and emergency department disaster response, and an up-to-date review of the more common medical and management issues that might face a nurse involved in a local disaster. Unique chapters include those addressing the legal and ethical issues in disaster response, the role of the media, effective communication with the public (a major deficiency during Hurricane Katrina and the South Asia tsunami), the special needs of children during disasters and public health emergencies, and the evolving

priorities of the Departments of Health and Human Services and Homeland Security.

Like the first edition, the second edition includes well-designed case studies that provide realistic, hands-on experiences that challenge the reader to apply information provided in the chapters. Dr. Veenema's inclusion of "Key Messages" and "Learning Objectives" that introduce each major section of the book, plus unique case studies addressing natural, industrial, and terrorism disasters, has resulted in the creation of a major resource that will serve as a timely, comprehensive, and structured text for the education of hospital, community, state, and national health and medical emergency managers, as well as nursing students who will assume major mass emergency preparedness responsibilities immediately after graduation.

It is incumbent that all health care workers, and nurses in particular, react professionally, efficiently, rationally, and effectively when disaster strikes. To do so, they need some fundamental principles and knowledge

on which to base their activities. This highly topical book will serve as the most up-to-date course textbook and desk reference available not only for nursing professionals responsible for preparing their hospitals for responding to disasters and other public health emergencies but also for emergency managers and other decision makers charged with ensuring that disasters are well managed.

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In the years since the first edition of this book was published, the complexity of terrorism has continued to increase. We now are very aware that terrorists exist, not only outside our country trying to get in, but also inside our country in small towns and large cities where some of our own citizens are plotting our downfall.

I have always said that nurses are the glue that holds our health care delivery system (as fragmented as it is) together. Once a nurse, always a nurse! Nurses in our communities are also expected to be able to respond to the natural and man-made disasters that we will surely encounter in the next few years. Our response must be evidence based, as is so well exemplified by these chapters. This text gathers together the best thoughts about evidence-based response wherever possible and identifies where the evidence is spotty and slim.

As the founder of the International Nursing Coalition for Mass Casualty Education in March 2001 (now the Nursing Emergency Preparedness Education Coalition), which now represents over 80 nursing organizations, friends of nursing, and subject matter experts, I was not privy to any special vision. I knew that our public health infrastructure was rickety—at best—and that, in the event of any kind of mass casualty event, nurses would be expected to be in the forefront. I also

knew that disaster nursing had virtually disappeared from our curricula, although we still incorporated basic population-based public health principles. If one good thing comes out of the tragedy of 9/11, it will be that monies granted from Congress to address terrorism will serve a dual role and also help strengthen our public health infrastructure.

The book you are about to read offers a comprehensive analysis of a broad range of disasters possible in today's world—both those wreaked by humans as well as by nature. This text is the next generation of information needed by nurses to be informed about and responsive to the needs of our citizens in a disaster. Katrina was a wake-up event. The roles that nurses and nurse assistants played in that disaster were selfless and inspiring. Katrina only served to undergird our awareness that we must be vigilant and prepared!

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Special Foreword

As a Robert Wood Johnson Executive Nurse Fellow, Dr. Veenema, a disaster nursing expert, chose to pursue a lofty fellowship goal of “creating a national nursing workforce adequately prepared to respond to a disaster or any major public health emergency.” This monumental undertaking sounds and is formidable. Still, this second edition of her highly successful earlier publication, *Disaster Nursing*, convinces me she is well on the way toward that goal.

This expanded and updated edition is all encompassing and forms the basis for all her other efforts in developing printware and software and educational forums, coordinating and collaborating with volunteer and governmental agencies, and encouraging educational and professional organizations to help prepare nurses and other health professionals for natural and man-made disasters. The breadth and depth of this publication are phenomenally comprehensive and practical as well as theoretically and scientifically sound. Its

expanded scope ranges from preparedness and management to specific types of disasters, ending with chapters on nursing education, research, and global connections.

I would find this edition particularly useful for its teaching/learning framework that focuses the learner on goals and expected outcomes. Case studies expedite discourse and critical thinking as do references and Internet sources.

In its expanded form and extensive content, this second edition is indeed required reading as a textbook, a reference, a compendium of comprehensive topics, and foundational to “making every nurse a prepared nurse.”

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