Tener Goodwin Veenema, PhD, MPH, MS, RN, FAAN, is Professor of Nursing and Public Health at the Johns Hopkins School of Nursing and the Center for Humanitarian Health at the Johns Hopkins Bloomberg School of Public Health. As an internationally recognized expert in disaster nursing and public health emergency preparedness, she has served as senior scientist to the U.S. Department of Health and Human Services (HHS) Office of Human Services Emergency Preparedness and Response (OHSEPR), Department of Homeland Security (DHS), Department of Veterans Affairs (VA), Veterans Affairs Emergency Management Evaluation Center (VEMEC), and the Federal Emergency Management Agency (FEMA). An accomplished disaster researcher, Dr. Veenema has received significant career funding and numerous awards for her work. She is a member of the American Red Cross National Scientific Advisory Board and is an elected fellow in the American Academy of Nursing, the National Academies of Practice, and the Faculty of Nursing and Midwifery at the Royal College of Surgeons, Dublin, Ireland. In 2013, Dr. Veenema was awarded the Florence Nightingale Medal of Honor (International Red Crescent), the highest international award in nursing, for her professional service in disasters and public health emergencies. She was awarded a Fulbright U.S. Scholar Award (2017) and was selected as the 2017–2018 Distinguished Nurse Scholar-in-Residence at the National Academy of Medicine (Washington, DC).

A highly successful editor and a prolific author, Dr. Veenema has published textbooks, handbooks, decision support software, and over 90 articles on emergency nursing and disaster preparedness. She has taught public health preparedness for over 25 years and has authored four highly successful national e-learning courses in disaster and public health preparedness for healthcare providers (Coursera, Elsevier, MC Strategies, American Red Cross). 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 motivated, energetic, and self-directed leader with an impressive degree of creativity and innovation, Dr. Veenema is in high demand as a speaker and her information technology applications for disaster response have been presented at conferences around the globe. Dr. Veenema is the developer of Disaster Nursing, an innovative technology application (“App”) for the smartphone and tablet (Unbound Medicine).

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 alma mater Suffield Academy (Suffield, CT).
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 and grandchildren 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 the children of the world—and to Kyle, Kendall, Blair, and Ryne in particular—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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Contributors

Mahshid Abir, MD, MSc
Director, Acute Care Research Unit
Institute for Healthcare Policy & Innovation
Assistant Professor, Emergency Medicine
University of Michigan Medical School
Natural Scientist and Affiliated Adjunct,
RAND Corporation
Ann Arbor, Michigan

Gary Ackerman, PhD
Associate Professor
College of Emergency Preparedness, Homeland Security, and Cybersecurity
University at Albany, State University of New York
Albany, New York

Janice B. Griffin Agazio, PhD, CRNP, RN, FAANP, FAAN
Assistant Dean
Professor
PhD and DNP Program Director
School of Nursing
The Catholic University of America
Washington, District of Columbia

Eileen M. Amari-Vaught, PhD, RN, MSN, FNP-BC
Clinical Assistant Professor
School of Nursing and Health Studies
University of Missouri-Kansas City
Kansas City, Missouri

Paul Arbon, RN, BSc, DipEd, Grad Dip Health Ed, MEd (Studies) PhD (Sydney), FACN, FAAN
Matthew Flinders Distinguished Professor
College of Nursing and Health Sciences
Director
Torrens Resilience Institute
Flinders University
Adelaide, Australia

Michael Beach, DNP, ACNP-BC, PNP, FAAN
Assistant Professor
University of Pittsburgh School of Nursing
Pittsburgh, Pennsylvania

Sue Anne Bell, PhD, FNP-BC, NDHP-BC
Clinical Associate Professor
School of Nursing
University of Michigan
Ann Arbor, Michigan

John G. Benitez, MD, MPH, FAACT, FACMT, FACPM, FAAEM
Medical Director
Emergency Preparedness Program
Tennessee Department of Health
Professor of Medicine and Emergency Medicine
Vanderbilt University School of Medicine
Nashville, Tennessee

Kelly J. Betts, EdD, MNSc, RN, CNE
Assistant Professor
University of Arkansas for Medical Sciences
College of Nursing
Little Rock, Arkansas

Joanne Bosanquet, MBE Queen’s Nurse, RN, RHV, HonDUniv (Greenwich)
Deputy Chief Nurse
Public Health England
London, United Kingdom

Jody Bryant, MSN, RN
Clinical Nurse Educator
Central Arkansas Veterans Healthcare System
Little Rock, Arkansas

Frederick M. Burkle, Jr., MD, MPH, DTM, FAAP, FACEP
Professor (Ret.)
Senior Fellow and Scientist
Harvard Humanitarian Initiative
Harvard School of Public Health and T. C. Chan School of Public Health
Cambridge, Massachusetts
Senior International Public Policy Scholar
Woodrow Wilson International Center for Scholars
Washington, District of Columbia
Member, National Academy of Medicine, elected 2007
Alicia R. Gable, MPH  
Senior Project Director  
Veterans Emergency Management Evaluation Center  
Office of Patient Care Services  
Veterans Health Administration  
U.S. Department of Veterans Affairs  
North Hills, California

Kristine M. Gebbie, DrPH, RN  
Adjunct Professor, University of Adelaide and Flinders Universities  
Associate Director, Torrens Resilience Institute  
Adelaide, South Australia

Anne Griffin, MPH, BSN, RN, CNOR  
Clinical Investigator and Senior Program Manager  
Veterans Emergency Management Evaluation Center  
Office of Patient Care Services  
Veterans Health Administration  
U.S. Department of Veterans Affairs  
North Hills, California

Sheila R. Grigsby, PhD, MPH, RN, PHNA-BC  
Assistant Professor  
College of Nursing  
University of Missouri—St. Louis  
St. Louis, Missouri

Rebecca Hansen, MSW  
Managing Director  
EAD & Associates, LLC  
Inclusive Emergency Management Consultants  
Brooklyn, New York

Kevin D. Hart, JD, MPH, PhD

Alison Hutton, RN, DipAppSc (Nsg), Paediatric Certificate, BNg, MNg, PhD, FACN  
Professor  
School of Nursing and Midwifery  
University of Newcastle  
Newcastle, Australia

Joy Jennings, MSN, RN-BC  
Clinical Assistant Professor  
Arkansas State University-Beebe Campus  
College of Nursing  
Beebe, Arkansas

P. Andrew Karam, PhD, CHP  
Karam Consulting  
New York, New York

Ziad N. Kazzi, MD, FAAEM, FACEP, FACMT, FAECT  
Associate Professor  
Medical Toxicologist  
Department of Emergency Medicine  
Emory University  
Assistant Medical Director  
Georgia Poison Center  
Atlanta, Georgia

Sean J. Kice, MS  
Strategic National Stockpile Coordinator  
Emergency Preparedness Program  
Tennessee Department of Health  
Nashville, Tennessee

Joanne C. Langan, PhD, RN, CNE  
Associate Dean, Undergraduate and Pre-Licensure Education  
Professor  
Coordinator, Disaster Preparedness & RN Return to Practice  
Saint Louis University School of Nursing  
St. Louis, Missouri

Roberta Proffitt Lavin, PhD, FNP-BC, FAAN  
Professor and Associate Dean for Academic Programs  
University of Missouri-St. Louis  
St. Louis, Missouri

E. Brooke Lerner, PhD, FAEMS  
Professor, Departments of Emergency Medicine and Pediatrics  
Co-Director, Comprehensive Injury Center  
Medical College of Wisconsin  
Milwaukee, Wisconsin

Karen Levin, RN, CCRN, CPHN, MPH, MCHES  
Adjunct Associate Professor of International and Public Affairs  
Columbia University  
New York, New York

Juliana Soares Linn, MD, MPH, MSc  
Deputy Director, Implementation Unit  
ICAP at Columbia University  
New York, New York

Justin K. Loden, PharmD, CSPI  
Director of Education  
Tennessee Poison Center  
Nashville, Tennessee

©Springer Publishing Company
Sarah Losinski, MPH, BSN, RN
Research Assistant
Community Public Health Nursing
Johns Hopkins School of Nursing
Baltimore, Maryland

Linda M. MacIntyre, PhD, RN
Chief Nurse, American Red Cross
Volunteer Services
American Red Cross National Headquarters
Washington, District of Columbia

Rishma Maini, BSc, MBChB, DTMH, MPH, MFPH
Senior Public Health Registrar in Global Disaster Risk Reduction
Public Health England
London, United Kingdom

David Markenson, MD, MBA, FAAP, FACEP, FCCM
National Chair
Scientific Advisory Council
American Red Cross

Elizabeth C. Meeker, PsyD
Director, Practice Transformation
Coordinated Care Services, Inc.
Rochester, New York

Susan Michaels-Strasser, PhD, MPH, RN, FAAN
Assistant Professor in Epidemiology
Columbia Mailman School of Public Health
Implementation Director of ICAP at Columbia University
New York, New York

Amanda Fuller Moore, PharmD
Pharmacist
Division of Public Health
North Carolina Department of Health and Human Services
Raleigh, North Carolina

Virginia Murray, FFPH, FRCP, FFOM, FRCPath
Public Health Consultant in Global Disaster Risk Reduction
Public Health England
Visiting Professor, UNU-International Institute of Global Health
Member of the WHO Collaborating Centre on Mass Gatherings and Global Health Security
London, United Kingdom

Sarah D. Nafziger, MD, FACEP, FAEMS
Professor of Emergency Medicine
University of Alabama at Birmingham
Birmingham, Alabama

Susan M. Orsega, MSN, FNP-BC, FAANP, FAAN
Chief Nurse Officer
United States Public Health Service
Washington, District of Columbia

Lori Peek, PhD
Professor, Department of Sociology
Director, Natural Hazards Center
University of Colorado
Boulder, Colorado

Marilyn M. Pesto, JD, MSN, RN
Director and Assistant Professor
Sriridge Office of Medical Humanities and Bioethics
School of Medicine
University of Missouri-Kansas City
Kansas City, Missouri

Brenda Phillips, PhD
Dean, College of Liberal Arts and Sciences
Professor of Sociology
Indiana University South Bend
South Bend, Indiana

David C. Pigott, MD, RDMS, FACEP
Professor and Vice Chair for Academic Development
Co-Director of Emergency Ultrasound
Department of Emergency Medicine
University of Alabama at Birmingham
Birmingham, Alabama

Kathleen Coyne Plum, PhD, RN, NPP
Adjunct Faculty
Wegmans School of Nursing
St. John Fisher College
Rochester, New York

Robbie Prepas, CNM, MN, NP, JD
Adjunct Professor, UCLA School of Nursing
Los Angeles, California
Co-Chairperson, Disaster Preparedness Caucus
American College of Nursing
Consultant, CDC Pandemic Flu Planning
Member, Disaster Preparedness Medical Team
Silver Spring, Maryland

Erica Rihl Pryor, PhD, RN
Associate Professor (retired)
School of Nursing
University of Alabama at Birmingham
Birmingham, Alabama

Lisa Puett, BSN, RN
Coordinator, Pediatric Trauma & Burn Programs
Division of Pediatric Surgery
John Hopkins Children’s Center
Baltimore, Maryland

Kristine Qureshi, PhD, RN, FAAN, CEN, PHNA-BC
Professor
Associate Dean for Research and Global Health Nursing
School of Nursing and Dental Hygiene
University of Hawaii at Manoa
Honolulu, Hawaii
Adam B. Rains, MSc
Lead PHM Analyst
Center for Population Health Outcomes and Informatics
Department of Population Health Management
Informatics
University of Rochester Medical Center
Rochester, New York

Richard Ricciardi, PhD, NP, FAANP, FAAN
Director, Division of Practice Improvement
Senior Advisor for Nursing
Agency for Healthcare Research and Quality
Rockville, Maryland

Susan Roettinger Ritchie, MN, RN (retired)

J. Christie Rodgers, LICSW
Senior Associate
Disaster Mental Health, Program Development
American Red Cross National Headquarters
Fairfax, Virginia

Lou E. Romig, MD, FAAP, FACEP
Medical Director
After Hours Pediatrics Urgent Care Clinics
Tampa, Florida

Tara L. Sacco, MS, RN, CCRN-K, AGCNS-BC, ACCNS-AG
Visiting Assistant Professor
Wegmans School of Nursing
St. John Fisher College
Clinical Nurse Specialist
Adult Critical Care Nursing
University of Rochester Medical Center
Rochester, New York
PhD Student & Jonas Scholar 2016–2018 Cohort
M. Louise Fitzpatrick College of Nursing
Villanova University
Villanova, Pennsylvania

Juliana Sadovich, PhD, RN
Director of Quality Management
Indian Health Service
U.S. Department of Health and Human Services
Rockville, Maryland

Cheryl K. Schmidt, PhD, RN, CNE, ANEF, FAAN
Clinical Professor
College of Nursing and Health Innovation
Arizona State University
Phoenix, Arizona

Manish N. Shah, MD, MPH
Associate Professor
The John & Tashia Morgridge Chair of Emergency Medicine Research
Vice Chair for Research
BerbeeWalsh Department of Emergency Medicine
University of Wisconsin School of Medicine & Public Health
Madison, Wisconsin

CAPT. Lynn A. Slepski, PhD, RN, PHCNS-BC, FAAN
Senior Public Health Advisor
United States Public Health Service
Office of the Secretary, U.S. Department of Transportation
Washington, District of Columbia

Janice Springer, DNP, RN, PHN
Volunteer Partner to Vice President International Services
Disability Integration Advisor
Disaster Health Services Manager
American Red Cross
Foley, Minnesota

Kandra Strauss-Riggs, MPH
Education Director
National Center for Disaster Medicine and Public Health
Uniformed Services University of the Health Sciences
Bethesda, Maryland

Susan Sullivan, MS, RN-BC
Public Health Nursing Consultant
Vaccine Preventable Disease Program
Communicable Disease Branch
Raleigh, North Carolina

Devin Terry, MSN, RN, ACNS-BC, CQHQ
Advanced Practice Partner for Ambulatory Services
University of Arkansas for Medical Sciences Medical Center
Little Rock, Arkansas

Clifton P. Thornton, MSN, RN, CNMT, CPNP
Pediatric Nurse Practitioner
Johns Hopkins University School of Medicine
Johns Hopkins Bloomberg Children’s Hospital
Baltimore, Maryland

Sarah Tuneberg, MPH
Chief Executive Officer
Geospiza, Inc.
Denver, Colorado
Tener Goodwin Veenema, PhD, MPH, MS, RN, FAAN
2018 Distinguished Nurse Scholar in Residence
National Academy of Medicine
Washington, District of Columbia
Professor of Nursing and Public Health
Johns Hopkins School of Nursing
Center for Humanitarian Health
Johns Hopkins Bloomberg School of Public Health
Baltimore, Maryland

Jonathan D. White, PhD, LCSW-C, CPH (Commander, USPHS)
Chief, Domestic Policy Branch
Office of the Assistant Secretary for Preparedness and Response
U.S. Department of Health and Human Services
Washington, District of Columbia
Reviewers

Lavonne Adams, PhD, RN, CCRN
Associate Professor
Texas Christian University
Fort Worth, Texas

Mary Pat Couig, PhD, MPH, RN, FAAN
Program Manager, Emergency Management and RN Transition-to-Practice Residency
Office of Nursing Services
U.S. Department of Veterans Affairs
Washington, District of Columbia

Sarah Schneider-Firestone, MSW
Research Associate
Johns Hopkins School of Nursing
Baltimore, Maryland

Roberta Proffitt Lavin, PhD, FNP-BC, FAAN
Professor and Associate Dean for Academic Programs
University of Missouri-St. Louis
St. Louis, Missouri

Mary Casey-Lockyer, MHS, BSN, RN, CCRN
Senior Associate
Disaster Health Services
American Red Cross National Headquarters
Fairfax, Virginia

Zoe Rush
Medical Editor
Johns Hopkins School of Nursing
Baltimore, Maryland

Janice Springer, DNP, RN, PHN
Volunteer Partner to Vice President International Services
Disability Integration Advisor
Disaster Health Services Manager
American Red Cross
Foley, Minnesota

With special gratitude for his review and oversight of the previous editions:

Adam B. Rains, MSc
Lead PHM Analyst
Center for Population Health Outcomes and Informatics
Department of Population Health Management Informatics
University of Rochester Medical Center
Rochester, New York

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Foreword

It is a humbling honor to be chosen to write this foreword for the Fourth Edition of Disaster Nursing and Emergency Preparedness, a scholarly compendium of the work of the most experienced practitioners and researchers involved in disaster and crisis nursing. As I write this foreword, I am fully aware that we collectively face, in this increasingly globalized world, an unprecedented number of major challenges to the preparation and protection of victims from an expanding array of threats to their safety and livelihood. While our knowledge base in the science of disasters has made great strides, especially in technical and communication innovations, this information has not always been successfully translated into improved preparedness and response capabilities. Nor has this evidence base been successfully translated into improved effectiveness and efficiency in meeting increasing healthcare challenges to the ever-changing variety of crisis events leading some humanitarian sector experts to claim that the “system is broken.” Admittedly, improvements will arise first from a commitment to scale up research in improving evidence for healthcare prevention, preparedness, and response, placing a priority on identifying research gaps, and finally translating these advances into educational and training priorities. The fourth edition speaks to those advances.

Nursing is the world’s largest health profession and consistently contributes 70% or more of professionals responding to local, national, regional, and global crises. Historically, nursing organizations and leadership have always considered disaster preparedness and response a vital role of nursing practice; however, it has been only in the last several decades that both professional and academic institutions have formally focused on preparing nurses with the required educational and operational competencies and courses for response and on implementing the vital roles the nursing profession has in advancing disaster research, policy, practice, and administration.

Research has shown that the nature of major crises and how the world responds to them have dramatically changed every 10 to 15 years or sooner. Whereas the first edition clearly met the challenge to be relevant to that era, subsequent editions have been remarkable in guaranteeing the most updated evidence-based information necessary to meet new educational and operational competencies—whether the crisis occurs in one’s community or demands a global workforce deployment of medical teams to sudden onset natural disasters, public health emergencies of international concern such as the Ebola epidemic, war, armed conflict, and complex humanitarian emergencies. Each edition historically chronicles the unique advances across the disaster cycle from prevention, preparedness, response to recovery, and rehabilitation. The diligent work of editor Dr. Tener Goodwin Veenema, a highly respected academic nursing scholar with firsthand field experience and solid policy credentials, has consistently focused on ensuring that each volume in the series has met the operational requirements facing the individual nurse and the profession at large.

The fourth edition is unique in recognizing the rapid changes in both the causes of these crises and the latest attempts to provide timely multidisciplinary approaches to the practice of this growing specialty, as well as the inclusion of the rapidly growing influence of advances in science, technology, social sciences, international law and policy, and globalization, to name but a few. What we do as healthcare professionals in mitigating mortality and morbidity is most evident in new chapters that reflect the emerging operational vocabulary such as “public health emergencies”—one of the most crucial challenges of our time. Unfortunately, while we have embraced the fact that disasters possess the unique quality of defining the state of the public health and immediately exposing its deficiencies, collectively we have a poor history in overcoming political barriers to uncover and prevent the deficiencies in essential public health infrastructure: food, shelter, water, sanitation, access to and availability of health services, and energy that each disaster, once again, predictably reveals. Interestingly, energy was added to the list of essential infrastructure only after the 1988 Armenian earthquake resulted in an unprecedented rapid rise of preventable mortality as victims froze from the lack of heat during the following cruel winter months. Yet again, the loss of energy to posthurricane rehabilitation of Puerto Rico in 2017 was predictable and preventable and underscores societal failures in accepting that 1 U.S. dollar put to prevention can save 4 U.S. dollars in response—an economic fact rarely heeded by decision makers in the planning for disaster recovery and rehabilitation.

Additional new and timely chapters address the Sendai Agreement for Disaster Risk Reduction and the targets adopted by the United Nations (UN) Sustainable Development Goals (SDGs)
designed to both prevent public health crises and protect vulnerable populations; the consequences of climate-related disasters that have increased by over 50% in the last decade with loss of essential aquifers, major droughts, and loss of viable land, leaving developing countries unable to survive or participate in adapting, further resulting in unprecedented internal migration, escalation of internal conflicts, urban warfare, and massive numbers of refugees leaving the Middle East and Northern Africa; the rapidly escalating incidence of domestic civil unrest and community violence; active shooters and mass shootings and the burden that is creating for healthcare systems; and the ever-compelling importance of preparedness for radiation emergencies and blast injuries that leave no country unprotected. In many situations, public health interventions could have prevented the acceleration of governmental mismanagement, poverty, and the mass exodus of refugees, especially those in the health professions.

A persuasive argument of Dr. Veenema’s that is evident throughout this edition is the call to identify crisis leadership among the increasingly talented base of nurses who have responsibility to move the profession to recognize and accept that they can be advocates for better planning, coordination, education, and training. Whereas nursing duties today are extremely demanding, there remain unfilled requirements for those willing to be leaders in disasters, crisis nursing, and especially public health emergencies. There is no other option but for nurses to take ownership of their responsibility to be prepared.

Frederick M. Burkle, Jr., MD, MPH, DTM, PhD(Hon.), FAAP, FACEP
Professor (Ret.)
Senior Fellow and Scientist
Harvard Humanitarian Initiative, Harvard University and
T.C. Chan School of Public Health Boston, Massachusetts

Senior International Public Policy Scholar
Woodrow Wilson International Center for Scholars
Washington, District of Columbia
Member, National Academy of Medicine, elected 2007
The burden upon healthcare systems that disasters create is immeasurable and stretches across all levels of society and the capacities of both official and civilian responses. Regardless of the setting, nurses play a pivotal role in disaster management. In December 2016, the Johns Hopkins School of Nursing was pleased to host Society for the Advancement of Disaster Nursing: Nursing Administration and Leadership in an Emerging Clinical Arena, a 2-day national conference that brought together nurse leaders, hospital administrators, and public health and emergency management specialists from across the country who are committed to the advancement of national nurse readiness. Convening thought leaders was pivotal to sustaining our U.S. National Health Security Strategy, which 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.”

Little did we know that this system would be further tested in the natural disasters of 2017—from hurricanes, floods, and forest fires. While much has been accomplished over the past few years to increase awareness of nursing’s many roles and responsibilities during disasters and large-scale public health emergencies, much remains to be done. Nursing as a profession represents the largest sector of the healthcare workforce and a potentially untapped resource for achieving surge capacity goals and optimizing population health outcomes following these challenging events. Ensuring that our national nursing workforce has the knowledge, skills, and abilities needed to efficiently and effectively respond to disasters. In order to achieve the goal of Making Every Nurse a Prepared Nurse, 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 impressive edition builds upon the solid foundation of the first three award-winning editions with an expanded focus on climate change–related disasters, globalization and its implications for emerging and reemerging infectious diseases, the accommodation of high-risk, high-vulnerability populations, and the potential for disaster arising from a world witnessing increasing community violence and civil unrest. From her work at the National Academy of Medicine in medical and public health preparedness, Dr. Veenema has woven the current state of the science throughout the book.

Internationally regarded for her expertise in workforce development for disasters, mass gatherings, and public health emergency preparedness, Dr. Veenema has maintained a laser focus on the importance of the international relevance of the book, adding new chapters that address the landmark agreements: the Sendai Framework for Disaster Risk Reduction 2015–2030, the UN Sustainable Development Goals (SDGs), and the Paris Climate Agreement. Global disaster nursing leadership has never been more important and nursing’s voice across all continents can advocate for the achievement of these policies that will reduce and mitigate the impact of natural disasters and complex human emergencies.

Many times nurses assume that they are not emergency responders, so they do not need to understand how the emergency health system works. When a disaster strikes a community—whether a bus accident, an earthquake, a hurricane, terrorist attack, or riots and civil unrest—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. 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 and across the globe.

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1 Department of Health and Human Services Office of the Assistant Secretary for Preparedness and Response. Retrieved from https://www.phe.gov/Preparedness/planning/authority/nhss/Pages/default.aspx
Dr. Veenema has achieved a masterful accomplishment with the publication of this edition, and I encourage all nurses to develop the knowledge, skills, and abilities presented here, which are needed to achieve the vision of disaster preparedness locally, nationally, and internationally.

Patricia M. Davidson, PhD, MED, RN, FAAN
Professor and Dean
Johns Hopkins School of Nursing
Sigma Theta Tau International
Institute for Global Leadership Advisory Board
Council General International Council on Women’s Health Issues
Board Member Consortium of Universities for Global Health
Baltimore, Maryland
In the past, each new edition of Disaster Nursing and Emergency Preparedness seemed like the “best time” for the arrival of a new update. Today, more than ever before, is unquestionably the most propitious time for the fourth edition. What supports that observation? I believe it is the particular social, economic, technological, political, and environmental climate of our times. Natural and man-made disasters are not new, but the global nature, rate, type, and totality of the environments impacted are increasing. Complex human emergencies leading to population migration, violence, and infectious disease outbreaks now persist for years without resolution. These horrendous and tragic human situations are generating the urgency for a greater 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. Social media and the lightning transmission of reporting of these events and our responses make these happenings unique. Rather than separating us from the rest of the world, they may be a uniting factor with all of us sharing the same concerns, risks, threats, and consequences. They may require us to not only communicate more fully and swiftly but also plan strategies of information sharing, preventive designs, and positive promotional activities that will not only offer societies protection but also institute environments of problem solving that are more predictive, productive, and positive than we are experiencing today. Given the speed of global communications and cyberspace capacity, worldwide attention must be paid to our population’s mental as well as physical health, our communities’ resources and preparation, national polices and plans for prevention as well as response, and our commitment for everyone to be involved. Disasters are everyone’s problem and should not be left to the professional responders alone. Each and every one of us, as citizens and as nurses, has a responsibility for preparedness, not only for ourselves, but our neighbors and communities as well. We need to think of ourselves as “first responders,” not as standby observers or the last hope for survival.

This new and greatly expanded edition addresses all of these needs with an in-depth focus on the impact of climate change, the threat of growing civil unrest and community violence, the critical importance of planning for and accommodating vulnerable populations, and the design of disaster health services for those at high risk such as children, pregnant women, 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 policymakers 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 16 years, Disaster Nursing and Emergency Preparedness has been the hallmark text in its field, and this edition proves to be the best ever.

Loretta C. Ford, RN, PNP, EdD
Dean Emeritus
University of Rochester School of Nursing
Founder of the National Nurse Practitioner Program
Member, National Women’s Hall of Fame
Seneca Falls, New York

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Preface

Chance favors the prepared mind.

—Louis Pasteur

In the global community within which we live, concern for the sustainability of our environment, the health and well-being of our citizens, and the overall planetary health has rapidly accelerated. In light of recent world events and increasing geopolitical tensions, our concerns have now expanded to include the ubiquitous threat of terrorism; the potential detonation of thermonuclear weapons; acknowledgment of the devastating impact of climate change; emerging and reemerging infectious diseases such as Ebola, Zika, and coronavirus; and the increasing frequency and intensity of natural disasters such as hurricanes, floods, tsunamis, and earthquakes.

Disaster Nursing and Emergency Preparedness has always evolved to meet the unique learning needs of nurses across the globe, and the fourth edition of this hallmark text promises to be the most comprehensive ever. As the leading textbook in the field approaches 20 years, I am extremely proud and excited to present our newest edition along with its sister “e-book” and companion digital instructor’s manual.

The fourth edition of this textbook holds us to our highest standards ever with an ambitious goal—to once again provide nurses, nurse midwives, nurse practitioners, and nurse executives with the most current, valid, and reliable evidence-based content available. The text presents a broad and comprehensive overview of existing domestic and international disaster health policy coverage. The genesis of the book was predicated on the belief that all nurses should possess the knowledge, skills, and attitudes (KSAs) to be able and willing to respond in a timely and appropriate manner to any disaster or major public health emergency and keep themselves and their patients safe. Our goal is simple—to improve population health outcomes following a disaster event or public health emergency.

Every chapter in this fourth edition has been carefully researched, fact-checked, reviewed by subject matter experts, and matched to the highest standards in disaster education. Whenever possible, we have mapped all content to published core competencies for preparing the health profession’s students for response to terrorism, disaster events, and public health emergencies. As with previous editions, this edition contains a significant amount of new content and strives to expand our focus as nurses to: (a) acknowledge anthropogenic climate change, (b) deepen our understanding of the importance of global disaster risk reduction and mitigation strategies, (c) continually expand the international scope of the book to meet the needs of our global nursing colleagues, (d) address the growing threat of pandemics, and (e) increase our awareness of the health implications of urban civil unrest and community violence.

We have remained vigilant to the release of relevant major policy recommendations by international organizations, congressionally convened commissions, panels, scientific advisory boards, and organizations such as the National Academy of Medicine (Washington, DC) to inform the evolution of our discipline. In 2015, several notable UN agreements were adopted and include: the Sendai Framework for Disaster Risk Reduction, the Sustainable Development Goals (SDGs), and the Conference of the Parties 21’s (COP21’s) Paris Climate Agreement. The policy areas pertaining to these landmark frameworks are closely interrelated, and their importance in protecting the future of human health is incalculable. For example, climate mitigation and adaptation strategies may contribute to reducing the frequency of disasters, which in turn supports sustainable development and healthy communities. We recognize the forces of globalization and the importance of addressing “One Health.”

The framework of the book relates directly to the 2015 UN agreements, the World Health Organization (WHO) Global Health Security Strategy, and the WHO and U.S. Centers for Disease Control and Prevention (CDC) Office of Emergency Preparedness and Response Guidelines for response to public health emergency events. The fourth edition aligns with the U.S. National Health Security Strategy and remains consistent with the five U.S. National Planning Frameworks and the National Incident Management System. It describes activation and deployment of the U.S. Strategic National Stockpile and the use of medical countermeasures. As with the previous editions, the overarching concepts of the book have been mapped to the Public Health Preparedness and Response Core Competency Model (www.asph.org), the Office of the Assistant Secretary for Preparedness and Response 2017–2022 Healthcare Preparedness and Response Capabilities, and the International Council of Nurses foundational competencies for disaster nursing practice. We have added several new chapters addressing critical topics such as (a) public health emergencies involving community violence and civil unrest; (b) nursing in disasters, catastrophes, and public health emergencies worldwide; (c) disaster nursing...
and the 2015 UN landmark agreements; and (d) national disaster nurse readiness. We have expanded our coverage of planning for and accommodating high-risk, high-vulnerability populations and have built upon our fundamental belief in a safe and clean environment as a foundational building block for health. We have updated and expanded existing chapters on natural disasters, environmental disasters, CBRNE events, and restoring public health following a disaster. We have addressed the importance of “One Health,” which recognizes that the health of people is connected to the health of animals and the environment. Nurses can advance the goal of One Health by working locally, nationally, and globally—to achieve the best health for people, animals, and our environment.

We live in an increasingly complicated world where our healthcare systems are severely taxed, financially stressed, and our emergency departments are functioning in disaster mode on a daily basis. The concept of accommodating a sudden, unanticipated “surge” of patients remains overwhelming. We have reason to believe that these challenges will continue and clinical demands on staff and the need for workforce preparedness will continue to grow in the future. We will need many nurses to get involved in efforts to increase both U.S. national and global nurse readiness. Working with colleagues at the U.S. Veterans Administration Emergency Management and Evaluation Center (VEMEC) and supported by nurses from major universities and professional nursing organizations, the recently established Society for the Advancement of Disaster Nursing (2017) is working to engage more U.S. nurses in this effort. Led by a dynamic group of nurses with an unwavering commitment to disaster nursing, this group is making major inroads in advancing disaster nursing practice, education, research, and policy. Several of these amazing nurses are chapter authors in this book, which brings me to note that this textbook, like the previous editions before it, represents a major “team” effort. I gratefully acknowledge the wonderful contributions of each of my coauthors and reviewers. Many of these nurse and physician colleagues have been authors in previous editions of this book. Several authors are former graduate students of mine, now trusted colleagues. There is no way to adequately express my gratitude for the time, talent, and treasure of their work and the friendship provided by these subject matter experts. Thank you most sincerely.

This textbook represents one step in my lifelong journey to contribute to building strength and safety in emergency health services and readiness within our nursing workforce. I remain personally committed to my work in preparing a global nursing workforce that is adequately prepared to respond to any disaster or public health emergency and I encourage you to join me and get involved. This work involves improving and expanding programs for interdisciplinary disaster education, lobbying for the advancement of nurses in federal and other key leadership positions to develop disaster-related policies, coalition building across key stakeholders, ensuring access to appropriate and sufficient supplies of personal protective equipment, and much more. This includes working to establish functional and ongoing community partnerships that foster collaboration and mutual planning for the health of our communities and the sustainability of our environment. It includes acknowledging and aggressively addressing climate change. It means giving reflective consideration to the realities of the clinical demands placed on nurses during catastrophic events and the need for consideration of crisis standards for clinical care during disasters and public health emergencies. It includes looking at innovative applications of technology to enhance sustainable learning and disaster nursing response. Take a look at Disaster Nursing (Unbound Medicine, at the App store), a digital app for the smartphones that includes just-in-time information and clinical guidelines for over 400 disaster and public health emergency events, designed specifically for nurses!

This fourth edition of 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 protect their patients only if they themselves are safe first. The fourth 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. As stated earlier, the target audience for the book is all nurses—making every nurse a prepared nurse—staff nurses, nurse practitioners, educators, and administrators.

This book continues to represent the foundation for best practice in disaster nursing and emergency preparedness, and is a stepping-stone for the discipline of disaster nursing research. There is much work to be done, and it continues to be very rewarding to witness increased interest in disaster nursing as more nurses get involved. The editor welcomes constructive comments regarding the content of this text.

Tener Goodwin Veenema
How to Use This Book

GUIDELINES FOR NURSING FACULTY AND STAFF DEVELOPMENT SPECIALISTS

Update on What Is New in the Fourth Edition

Greetings colleagues! The newest edition of this AJN Book of the Year is bigger and better than ever and continues to provide U.S. and international nurse educators with the high-quality evidence-based content needed to incorporate into both undergraduate and graduate course curricula for optimal student learning related to disaster nurse readiness. The book provides student nurses with the most comprehensive, current, and reliable information available so they can acquire the unique knowledge and develop the skills they need to efficiently and effectively respond to all types of disasters or public health emergencies. Meticulously researched and reviewed by the world’s foremost experts in preparedness for terrorism, natural disasters, and other unanticipated public health emergencies, the text has been revised, expanded, and updated with significant new content, including a new chapter.

The book provides comprehensive coverage related to leadership and management in disaster and emergency health systems as well as both basic and advanced disaster clinical nursing response. This new edition has strengthened its pediatric focus with updated and expanded chapters on caring for children’s physical, mental, and behavioral health following a disaster. Additional new chapters address 21st-century threats including climate change, emerging infectious diseases, global complex human emergencies, caring for patients with HIV/AIDS following a disaster, disaster information technology, and hospital and emergency department preparedness. The book provides a vast amount of evidence-based information on disaster planning and response for natural and environmental disasters and those caused by chemical, biological, and radiological elements, as well as disaster recovery. It also addresses leadership, management, and policy issues in disaster nursing and deepens our understanding of the importance of protecting mental health throughout the disaster life cycle. Each chapter is clearly formatted and includes key messages and learning objectives. Appendices present diagnosis and treatment regimens, creating personal disaster plans, a damage assessment guide, a glossary of terms, and more. Consistent with the National Response and Recovery Framework, the Centers for Disease Control and Prevention (CDC) Public Health Emergency Preparedness and Response Capabilities, and the National Health Security Strategy, the book promotes competency-based expert nursing care during disasters and positive health outcomes for small and large populations.

KEY FEATURES OF THE FOURTH EDITION

- Disseminates state-of-the-science, evidence-based information
- Provides a new chapter and new expanded content throughout the book
- Includes digital teacher’s guide with exercises and critical thinking questions
- Is consistent with current U.S. federal and international guidelines for disaster response
- Empowers nurses as leaders in disaster and public health emergency preparedness planning

DIGITAL INSTRUCTOR’S GUIDE

This edition of the textbook is accompanied by a digital adjunct teacher’s guide with PowerPoint presentations, student group exercises, and critical thinking questions. Faculty will find that the use of selected chapters from the text along with the digital instructor’s guide and supportive materials will allow easy integration of crucial disaster content into existing courses across programs.

The goal of all nursing education programs as it relates to disaster preparedness is to ensure that all nurses possess a minimum knowledge base and skill set before graduation to ensure that they will be able to participate in a disaster response in a timely and safe manner. Both patient safety and nurse safety are critical elements in any disaster response effort. The optimization of population-based health outcomes will be achieved only if nurse responders are safe and prepared to meet the demands of a sudden surge of victims from a disaster event or major public health emergency.

In order to meet the Essentials in Baccalaureate Education for population-based healthcare:
Assess the health, healthcare, and emergency preparedness needs of a defined population.
Use clinical judgment and decision-making skills in appropriate, timely nursing care during disaster, mass casualty, and other emergency situations.

For the Essentials for Master’s Education topic areas in disaster preparedness and management, faculty are strongly encouraged to first read the following chapter before teaching this content:

Chapter 36: U.S. National Disaster Nurse Readiness: Practice and Education for a Prepared Workforce

Nurse educators may find it extremely helpful to use the following rubric in determining what components of the book and course materials they wish to integrate into their courses.

DISASTER CONTENT RUBRIC

1. Nurse educators are encouraged to include the following chapters and digital instructor’s materials to present a basic CORE clinical/health systems disaster nursing overview:
   - Essentials of Disaster Planning
   - Leadership and Coordination in Disaster Healthcare Systems: The U.S. National Preparedness System
   - Hospital and Emergency Department Preparedness
   - Disaster Management
   - Disaster Triage
   - Legal and Ethical Issues in Disaster Response
   - Understanding the Psychosocial Impact of Disasters

2. Nurse educators are encouraged to include the following chapters and digital instructor’s materials to present a program for ADVANCED clinical disaster nursing:
   - Decontamination and Personal Protective Equipment
   - Chemical Agents of Concern
   - Radiological Incidents and Emergencies
   - Management of Burn Casualty Incidents
   - Traumatic Injury Due to Explosives and Blast Injuries
   - Management of the Psychosocial Effects of Disasters

3. Nurse educators are encouraged to include the following chapters and digital instructor’s materials to present content for Maternal & Child Health programs:
   - Identifying and Accommodating High-Risk High-Vulnerability Populations in Disasters
   - Unique Needs of Children During Disasters and Other Public Health Emergencies
   - Disaster Nursing in Schools and Other Child Congregate Care Settings
   - Care of the Pregnant Woman and Newborn Following a Disaster
   - Human Services Needs Following Disaster Events and Disaster Case Management

4. Nurse educators are encouraged to include the following chapters and digital instructor’s materials to present content related to Public Health Outbreak Management:
   - Surveillance Systems for Detection of Biological Events
   - Biological Agents of Concern
   - Infectious Disease Emergencies
   - Medical Countermeasures Dispensing
   - Role of the Public Health Nurse in Disaster Response

5. Nurse educators are encouraged to include the following chapters and digital instructor’s materials to present content related to global disaster nursing and humanitarian response:
   - Disaster Nursing and the United Nations 2015 Landmark Agreements—A Vital Force for Change in the Field of Disaster Nursing
   - Natural Disasters
   - Complex Human Emergencies
   - Nursing in Disasters, Catastrophes and Complex Humanitarian Emergencies Worldwide
   - Restoring Public Health Under Disaster Conditions: Basic Sanitation, Water and Food Supply, and Shelter
   - Human Services in Disasters and Public Health Emergencies: Social Disruption, Individual Empowerment, and Community Resilience
   - Climate Change and Health: The Nurse’s Role in Policy and Practice

My hope is that you find this information valuable, facilitating your adoption of the book and supportive materials into your educational setting. Let us work together to Make Every Nurse a Prepared Nurse. We owe it to our patients, our families, and our communities for they are counting on us as a profession to be there when they need us.

Most sincerely,

Tener Goodwin Veenema
Editor
2017–2018 Distinguished Scholar in Residence
National Academy of Medicine
Washington, District of Columbia
The information presented in this book has been verified up to the date of submission for publication; however, this field is dynamic and the science and relevant health policies related to disasters and public health emergencies are constantly changing. References, clinical guidelines, and resources frequently change to reflect new knowledge. Readers are strongly encouraged to use this textbook as a resource and as a guide, and to frequently visit web links at the WHO and the U.S. federal websites (ASPR, CDC, FEMA, DHS, EPA, etc.) for updates. Visit the ASPR website at www.phe.gov, the CDC website at www.cdc.gov, the DHS website at www.dhs.gov/index.shtm, the FEMA website at www.fema.gov, and the preparedness page of the ASPR at www.phe.gov/preparedness/pages/default.aspx for the most current, available information.
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Disaster Nursing and Emergency Preparedness: For Chemical, Biological, and Radiological Terrorism, and Other Hazards, Fourth Edition
PUBLIC HEALTH EMERGENCIES INVOLVING COMMUNITY VIOLENCE AND CIVIL UNREST: TAKING PLANNED ACTION

Roberta Proffitt Lavin, Wilma J. Calvert, Sue Anne Bell, Sheila R. Grigsby, and Anne F. Fish

LEARNING OBJECTIVES

When this chapter is completed, readers will be able to:

1. Define civil unrest.
2. List the conditions in Ferguson, MO that contributed to civil unrest in 2014.
3. Describe the social issues that are foundational elements in civil unrest.
4. List the types of active shooters.
5. Discuss the types of preparedness activities in which a healthcare facility should engage for active shooters.
6. Describe the preparedness activities that will help a hospital or healthcare facility in relation to civil unrest.

KEY MESSAGES

Civil unrest is disharmony, expressive dissatisfaction, and/or disagreement between members of a community that leads to a situation of competitive aggression that may find expression as disruption of organization, conflicts, damage to property, and injuries.

Civil unrest peaked in the 1960 to 1970 era during the Vietnam War, but never returned to the infrequency prior to that period. Since 2010, the number of incidents has been increasing largely in response to police-involved deaths of unarmed Black men.
CHAPTER OVERVIEW

This chapter explores two distinct issues in the United States. The chapter begins with an overview of civil unrest in the United States with special attention given to the time period since 2010. An emphasis is placed on the preparedness and response necessary by healthcare systems. A brief review of the civil unrest and related social issues; a detailed overview of the incidents of Ferguson, MO; action steps for nurse administrators; types of active shooters; and actions to take during an active shooter incident are addressed. Definitions of civil unrest and active shooter are provided along with a discussion of each of the healthcare challenges they create. Nurses’ skills that aid in preparedness and planning for both civil unrest and an active shooter incident are discussed. The chapter concludes with essentials for nursing leadership and suggestions for working in community health, an outpatient setting, or at the bedside for every setting.

There is no continent in the world safe from civil unrest and violence. One can debate the causes of societal discontent and the belief that the only way to address the underlying issues is through civil unrest and violence. What is not debatable is that both exist and historically have had periods of exacerbation. Most increases in civil unrest are related to racial and socioeconomic inequality and discontent with governmental policy. Mass shooting and active shooters, however, are more closely related to religious and political extremism and mental illness. The world appears to be in a period of discontent that has resulted both from an increase in civil unrest and from an increase in mass shootings.

Ideally, civil unrest and violence should be wholly distinct. Civil unrest, by design, is not violent, but designed to express discontent with social or political events. All too often it results in violence as it did in Ferguson, MO in 2014 and more recently in Charlottesville, VA in 2017. Mass shootings are a form of violent extremism, which is “the beliefs and actions of people who support or use violence to achieve ideological, religious, or political goals” (Australian Government, 2016, para. 1). Pinker (2011) famously argued that the level of violence in the world is decreasing. He speculates that the decline stems from multiple factors, including a judiciary with a “monopoly on the legitimate use of force,” commerce, feminization, the rise of literacy and mobility, and finally the rise of reason. He further speculates that the rise of mass media makes it less likely that we will return to more violent times and will continue to grow ever more intolerant of violence.

CIVIL UNREST

Inequalities in society, culture, and finance have resulted in community uprisings that are placing a greater burden on healthcare systems and nursing leaders to respond in a timely and appropriate manner. How we define civil unrest impacts how we prepare and the seriousness with which we prepare. Civil unrest is “disharmony, expressive dissatisfaction and/or disagreement between members of a community, which leads to a situation of competitive aggression that may find expression as disruption of organization, conflicts, damage to property and injuries” (Ballantyne, 2006, p. 155). The level of civil unrest in the United States had been relatively consistent until the 1960s when there was a significant increase with the onset of the Vietnam War. After the end of the war the civil unrest declined, but has been steadily increasing since 1980 (see Figure 24.1).

The relatively recent events of civil unrest in cities across the United States have raised the awareness of injustice in our society and the need to recognize the human dignity of every person. While nursing has been acknowledged as more trusted than many other public services, nursing has largely failed to address the impact of civil unrest on both nurses, the organizations we lead, and the communities we represent. It is essential to recognize that while our roles will be similar to those we take during a disaster event, not all of the circumstances are the same. For example, because of heightened tension between police and the general population, the presence of police may not be possible and, even if possible, may not be desirable (Kotora et al., 2014).

If we approach civil unrest as another type of disaster, we must recognize that the efforts of many health professionals, especially nurses, are needed. During such times, it is likely that both hospitals and public health organizations will change their preparedness posture and may have increased staffing or ready call rosters for healthcare professionals. What is
less clear is the extent to which healthcare organizations are working to recognize that the dynamics in civil unrest are more complex than a natural disaster and may be more like complex humanitarian emergencies in the sense that there is an internal breakdown at the local level that may require outside intervention to regain order.

The American Organization of Nurse Executives (AONE), in response to what they refer to as a “changing world” filled with “volatility, uncertainty, complexities, and ambiguities,” convened a working group to address the role of the nurse leader in a crisis. The AONE gave much of its highest priority to good communication, projecting calm, understanding how people react, prioritizing the crisis plan, and being trusted patient advocates (Edmonson, Sumagaysay, Cueman, & Chappell, 2016). This is all consistent with what was seen on the ground during recent events in Ferguson, MO and Baltimore, MD.

FERGUSON, MO

On Saturday, August 8, 2014, Michael Brown was shot and killed in Ferguson, MO during an altercation with a police officer related to jaywalking. After being killed, his body laid out on the pavement for several hours in the sun, unattended without any processing by Ferguson officials. With the ability of people to communicate quickly through smartphones and social media, it provided the perfect medium for communities to share injustices in real time and unfiltered. In a matter of hours, the image of a young man’s body lying in the street was shared around the world. Across the world including China, people were asking the question, “Where is Ferguson, MO?”

The history of the St. Louis region is clear in that systemic racism continues to be an active part of the culture. Dating back to the 1900s, citizens from this region have a history of being complacent when dealing with segregation and challenging the status quo. While there were some famous actions in the region like the Fairgrounds Park Riot of 1949 due to the integration of a public pool or the Jefferson Bank civil rights protests, it is not known for civil unrest. The practice of the press was not to provide any media coverage of such actions. This conscious effort to deny visibility of these occurrences was a systematic way of not recording history; therefore, not acknowledging the race problem in the region. White residents in the region did not understand nor did the public health infrastructure.

The historical context, as just outlined, provides a snapshot of why there are so many systemic problems in the area. This context helps to describe how public confidence in the Ferguson justice system had eroded to a critical level (Norwood, 2016). The movement in Ferguson was about more than the killing of an 18-year-old male for jaywalking. The movement was sparked by police force against Black people; excessive tickets for traffic, as well as quality of life–related issues and housing code violations that preyed on the most vulnerable; unemployment and underemployment; inadequate healthcare and public health concerns; inadequate housing; and substandard schools.

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**FIGURE 24.1** Civil unrest incidents in the United States.

Civil unrest in response to oppressive conditions imposed upon the vulnerable in the United States is not a new phenomenon. The unrest was not uncommon during the civil rights movement of the 1960s. As someone who espoused nonviolence in response to the blatant oppression and segregation occurring in the United States during the 1960s, when interviewed by Mike Wallace during a particularly violent summer in 1966, the Reverend Dr. Martin Luther King, Jr. did not condemn the violence or the “Black Power” movement espoused by other civil rights leaders:

I contend that the cry of “black power” is, at bottom, a reaction to the reluctance of white power to make the kind of changes necessary to make justice a reality for the Negro. I think that we’ve got to see that a riot is the language of the unheard. (King, M. L., Jr. (1966). Interview by M. Wallace. 60 Minutes Overtime.)

The Rev. Dr. King used similar words in 1968, when asked to address the violence and looting that occurred, as well as escalation of instances of civil unrest throughout the United States, as Blacks and others fought for civil rights. This time, though, he elaborated on the issue, explaining that it would be inappropriate and “morally irresponsible” for him to condemn the riotous acts without “…condemning the contingent, intolerable conditions that exist…. These conditions…cause individuals to feel that they have no other alternative…. And I must say tonight that a riot is the language of the unheard” (Farrell, 2011, para. 2). The 1960s provided a call to examine the social issues associated with civil unrest; similar conditions persist in the 21st century.

Too often in the United States, and most recently after the police-involved shootings of unarmed Black men such as Michael Brown and Freddie Gray, the protest led to acts by those participating that meet the definition of civil unrest (Ballantyne, 2006). Observers lay the blame for the events leading up to the civil unrest and any resultant negative effects of the unrest (e.g., burned-out businesses, an increased law enforcement presence, arrests) squarely on the shoulders of the demonstrators. It is easy, when civil unrest occurs, to attempt to solve the immediate unrest and even the long-term consequences solely through law enforcement efforts. This includes hiring additional law enforcement personnel, implementing trainings such as sensitivity, de-escalating, and deciding how to limit the use of excessive force and community policing (Rothstein, 2015). However, such a myopic perspective negates societal and governmental influences that had influenced and continue to influence the communities experiencing civil unrest. Contributing factors for civil unrest are frequently imposed upon economically disadvantaged groups through formal laws and practices steeped in tradition. With the advent of technology such as cell phone cameras, social media including Facebook and Twitter, YouTube videos, and 24-hour news cycles, some observers, instead of blaming the demonstrators, responded in shock and disbelief to the social issues that led to the demonstrations and incidents of civil unrest.

A myriad of social issues contributed to the unrest affecting predominantly Black urban areas such as St. Louis, MO (of which Ferguson, MO is an inner-ring suburb) and Baltimore, MD. July 1, 2016 population estimates for Blacks residing in Ferguson is 67% and 64% for Baltimore (U.S. Census Bureau, 2016). Many of the race-related governmental policies of segregation at the local, state, and federal levels that led to the civil unrest in Ferguson are like those in Baltimore (Rothstein, 2015). These issues include discriminatory housing policies that, although deemed illegal, continue to influence the economic status of those residing in such communities; perceived lack of power by community residents; limited educational and economic opportunities and the resultant persistent and high levels of poverty in the community; and citizen mistrust of law enforcement.

“White flight,” known as the phenomenon of upper- and middle-class Whites relocating further and further away from the urban core into the suburbs, and other races (in this case Blacks) moving into urban neighborhoods, partially explains the racial makeup of Ferguson and Baltimore; but, the role of the government cannot be overlooked. Both cities have a history of segregated housing practices that effectively created racially segregated communities. Federal, state, and local laws, policies, and regulations were enacted to ensure that Blacks, including those in St. Louis and Baltimore, would be forced to live in communities separate from Whites (Rothstein, 2015). Such practices are now deemed illegal, but their deleterious effects persist in many urban communities. Closely related to the housing segregation is the economic segregation experienced by some of the Blacks residing in these communities. Often, those residing in these racially segregated cities work in low-paying jobs that limit their ability to relocate to neighborhoods that may have more resources and, as Rothstein (2015) describes, economic inequities prohibited some Blacks from relocating to single-family homes on large lots further out in the suburbs.

Racially segregated cities, such as St. Louis and Ferguson, not only experience the vestiges of legalized segregated housing, but also experience other disadvantages, such as limited political influence. Although Ferguson is approximately 67% Black (U.S. Census Bureau, 2016), the majority of the City Council members, including the mayor, were White; after the death of Michael Brown, half of the six elected City Council members were Black (City of Ferguson, n.d.; Ferguson Commission, 2015). Likewise, Black Ferguson residents had limited representation on the Ferguson-Florissant School Board, the primary public school district serving the area. In 2010, Dr. Art McCoy was elected superintendent of the Ferguson-Florissant School District, the first Black to occupy the position (FlovValley News, 2017). However, in the latter part of 2013, the predominantly White school board placed Dr. McCoy on administrative leave for undisclosed reasons (Crouch, 2013); he ultimately resigned early in 2014, despite vocal community support (Lloyd & Singer, 2014). At the time of Michael Brown’s death in 2014, only one of the seven elected school board members was Black (R. Perry, personal communication, July 4, 2017; St. Louis Post-Dispatch, n.d.). Positive changes are occurring in the leadership serving the Ferguson community: Three of the current seven elected school board members are Black (Ferguson-Florissant School District, 2017). This is important when considering emergency preparedness. Having trusted community members during times of civil unrest is essential.
If the elected officials do not represent the community, it will impact the ability to communicate with the public.

Housing segregation and limited economic opportunities, along with the resultant poverty, also served to ignite the Ferguson and Baltimore civil unrest. Segregated housing influences an individual’s economic status through the availability of quality educational and employment opportunities. We earlier discussed the evolving nature of the once predominantly White composition of the Ferguson-Florissant school board to one that is more diverse, thus better representing the student population. Unlike Ferguson, the 2015 Baltimore School Board, whose members are appointed jointly by the governor of Maryland and the mayor of Baltimore, has five of 10 school board members who are Black (Baltimore City Board of School Commissioners, 2015). Both school districts serve predominantly Black students. Education is important to consider in any discussion on civil unrest because educational and economic opportunities are inextricably intertwined. Schools serving the most disadvantaged Black students, which describes many of the school-aged population in Ferguson and Baltimore, are often racially segregated and in economically disadvantaged communities.

Additional social factors contributing to civil unrest are high levels of unemployment and poverty, both of which are present in Ferguson and Baltimore. The national unemployment rate in May 2017 was 3.7%, compared to 7.5% for Blacks (U.S. Department of Labor Bureau of Labor Statistics, 2017). For White men, it was 3.4%, yet 6.5% for Black men (U.S. Department of Labor Bureau of Labor Statistics, 2017). The 2015 poverty rate (based on the U.S. Census Bureau’s poverty threshold) for Blacks nationally was 24%, compared to 9% for Whites (Henry J. Kaiser Family Foundation, 2017). For Blacks in Maryland, the rate is 17% and 6% for Whites, and the poverty rate for Blacks in Missouri is 25%, compared to 7% for Whites (Henry J. Kaiser Family Foundation, 2017).

Focusing specifically on households living below the U.S. poverty threshold, results from the 2011-2015 American Community Survey 5-Year Estimates indicate that 28% of Blacks in Baltimore lived below the poverty threshold, compared to 14% of Whites (U.S. Census Bureau, n.d.). Results are even more disparate for Blacks and Whites in Ferguson living below the poverty threshold: 27% versus 7%, respectively (U.S. Census Bureau, n.d.). At $31,214, the median household income of Blacks in the St. Louis region was half the median household income for Whites, which was $61,254 (U.S. Census Bureau, n.d.). The economic-related disparities are stark for Blacks in the United States.

The strained relationship between the residents and law enforcement can also lead to civil unrest. The shooting of Michael Brown in Ferguson, MO and the death of Freddie Gray, who suffered a spinal injury while in the custody of the Baltimore, MD police department, were enough to fuel unrest in those communities. In 2014, the Ferguson police department had limited Black representation on its force; only three of the 53 officers were Black at the time of Michael Brown’s death. St. Louis County is unique in that instead of being policed by one police department, it has more than 81 municipal courts and 60 independent municipal police departments (Ferguson Commission, 2015). With some of the small municipalities struggling financially because of a low tax base, police officers and municipal courts become revenue-generating bodies, bringing revenue to the municipalities (Better Together, 2014). Even though Ferguson has a large Black population, Blacks experience a disproportionate number of traffic stops. Police militarization, including armored vehicles, was brought into Ferguson to help quell the unrest. Without a doubt, the situation in Ferguson was volatile on both sides, but militarization did not lessen the volatility. In retrospect, some believe this militarization served to widen the gulf between the residents, protesters, and law enforcement.

The strained relationship is not unique to Ferguson: Baltimore has a history of tenuous relationships between residents and the local police department. One way it differs is the racial makeup of those in leadership positions in Baltimore. At the time of Freddie Gray’s death in 2015, the mayor, president of the City Council, police commissioner, and almost half of the police department were Black. So, while race may have fueled the tensions in Ferguson, in Baltimore, residents believed police officers treated them harshly because of their socioeconomic status. Tim Lynch of the Cato Institute is quoted as saying Blacks residing in Baltimore’s poorer neighborhoods believe the police treat them as second-class citizens, and are quick to resort to extreme policing to prevent criminal acts (Howell, 2015). Militarization of the Baltimore police department also occurred during the civil unrest after Gray’s death (Cato Institute, 2015). As in Ferguson, the presence of a police department with military-type weapons, including an armored tank, reinforced preexisting tensions between residents and the police department, and shocked people observing the unrest on television or via social media.

Limited resources in economically challenged neighborhoods, including a lack of positive relationships with law enforcement and limited representation in governing bodies, foster a climate of hostility and mistrust between residents and societal institutions. Residents of these communities often feel marginalized and isolated. So, when a perceived insult or wrong occurs, sometimes residents harrenk to use the only “voice” they know: civil unrest.

According to Forward Through Ferguson, A Path Toward Racial Equity (Ferguson Commission, 2015), specific steps needed to move the region forward to lessen citizen mistrust of law enforcement include police and court reform, along with a consolidation of police departments and municipal courts. Among the changes cited in Forward Through Ferguson (2015) are eliminating incarceration for minor, nonviolent offenses, primarily driving offenses. There is certainly the need for hiring more Black police officers, especially in communities serving a largely Black population, and additional training focused on police tactics that help dispel negative images and perceptions of law enforcement. Forward Through Ferguson (2015) details priorities if Ferguson, Baltimore, and similar communities are to move forward, decreasing the likelihood of civil unrest.

Separately, the issues described in this chapter are disconcerting. The cumulative effect, though, makes conditions ripe for civil unrest, and it is the cumulative effects that helped to fuel the unrest in Ferguson, MO, Baltimore, MD, and other urban areas plagued by these social issues.
ACTIVE SHOOTER

Active shooter incidents cause devastating and long-lasting impact on communities, first responders, and the receiving healthcare facilities. These unpredictable events are on the rise in the United States. Between 2000 and 2013, the Federal Bureau of Investigation recorded 160 active shooter incidents, with an increase from 6.4 incidents per year between the years 2000 and 2006 to 16.4 per year between 2007 and 2013 (U.S. Department of Justice Federal Bureau of Investigation, 2013). Another study found that active shooter incidents increased from an average of 9 per year between 2000 and 2005 to an average of almost 17 shootings per year between 2006 and 2011 (Kelen, Catlett, Kubit, & Hsieh, 2012). Likewise, the number of mass shootings has increased (Figure 24.2). Nurses must be prepared to protect patient safety and provide nursing care in the event of an active shooter incident.

TYPES OF ACTIVE SHOOTERS

Intentional killing of civilians or bystanders can fall into several different categories. These include active shooter, mass shooting, mass killings, terrorism, and active shooter in healthcare settings.

Active Shooter

Multiple definitions for an “active shooter” exist. The most accepted one, and the one used by U.S. federal agencies, including the Department of Homeland Security, defines active shooter as “an individual actively engaged in killing or attempting to kill people in a confined and populated area” (U.S. Department of Justice Federal Bureau of Investigation, 2013). In most cases, active shooters use a firearm. In most circumstances, victims are targeted at random, as there is no pattern or reason for the selection of victims.

Mass Shooting

Several definitions for “mass shooting” exist as consensus has not been reached. A mass shooting is defined as any incident in which four or more people are shot, whether injured or killed (Global Terrorism Database, 2017). Mass shootings can be carried out by an individual or a group.

In 2017, there have been 311 mass shootings in the first 10 months of the year. While all are horrible, two specific shootings drew national attention. The first occurred on October 1, 2017 in Las Vegas when a single gunman fired from the 32nd floor of the Mandalay Bay Hotel into a crowd of 22,000 concert goers killing 58 and injuring 546 (Bui, 2017). The second occurred on November 5, 2017 at the First Baptist Church in Sutherland Springs, TX. A single gunman killed 26 people and injured 20 others (Weill, 2017). In both cases the gunmen had high-powered assault rifles and other weapons. The victims were unable to escape and in both cases were in environments where they felt safe.

Mass Killings

The Investigative Assistance for Violent Crimes Act of 2012 defined a “mass killing” as three or more people killed in a single event (U.S. Department of Justice Federal Bureau of Investigation, 2013). It is important to note that this explanation is not limited to use of firearms, but also includes any non-gun–related killings. This definition is potentially flawed as it does not include persons who were injured but did not die as a result of the incident. It also does not include the death of the assailant in the event of being killed by the police or by his or her own hand.

Terrorism

Active shooter events differ from “terrorism.” Although multiple definitions exist for terrorism, the Global Terrorism Database (2017) describes three criteria:

Criterion I: The act must be aimed at attaining a political, economic, religious, or social goal.
Criterion II: There must be evidence of an intention to coerce, intimidate, or convey some other message to a larger audience (or audiences) than the immediate victims.
Criterion III: The action must be outside the context of legitimate warfare activities.

Active Shooter Incidents in the Healthcare Setting

An “active shooter incident in the hospital setting” is not only a threat to personal and public safety but also a serious public health threat. The potential for violence in the healthcare setting is particularly high because it is a high-stress environment for patients who may have unstable mental health conditions and families coping with their medical needs (Kotera et al., 2014). While most hospital-based shooting incidents have involved the deaths of a small number of persons (Kelen et al., 2012), 67% of healthcare facility-based
shootings occurred before police arrived and could engage the shooter (U.S. Department of Justice Federal Bureau of Investigation, 2013).

MITIGATION AND PREPAREDNESS

Preparedness activities for healthcare providers should focus on six key points (The Joint Commission, 2014):

- Involve local law enforcement in plans
- Develop and prepare a communication plan
- Assess and prepare the building
- Establish processes and procedures to ensure patient and employee safety
- Train and drill employees
- Plan for postevent activities

Many resources now exist to address active shooter preparedness, including law enforcement agencies, hospital associations, and healthcare systems. Ready-made drills and training materials are widely available.

An emergency action plan (EAP) is a systems-level approach to preparedness. A written EAP is mandated by the Occupational Safety and Health Administration for the purpose of defining and guiding actions during a workplace emergency (U.S. Department of Labor, n.d.). Understanding and being able to carry out the activities and plan in the EAP forms the basis of preparedness activities. Development of a comprehensive EAP requires careful and advanced coordination of healthcare systems alongside community partners, local emergency services, and law enforcement. An inclusive approach that involves planning, education, training, and preparation by all partners to maximize survival of staff and patients is the focus.

Conducting regular training exercises is another core component of preparedness for an active shooter incident (U.S. Department of Homeland Security, 2008). To be most effective, active shooter training activities should include a video or classroom component in addition to a hands-on community-based drill that involves both local law enforcement and emergency medical services. The drill should be an integral part of preparedness activities in all healthcare facilities, schools, and universities.

RESPONSE

The Run-Hide-Fight Active Shooter protocol (Table 24.1) is a well-known and advocated response for any individual involved in an active shooter incident (Houston Police Department, 2013). Run-Hide-Fight was originally produced by the City of Houston with the support of the Department of Homeland Security. It is based on the three central ideas to support users to immediately choose the best way to protect their lives by making the quickest and best assessment of what is occurring and which of the three options will have the safest and best outcome.

ACTIVE SHOOTER MANAGEMENT IN THE PREHOSPITAL SETTING

Most active shooter incidents are first managed in the prehospital setting, involving local law enforcement and emergency medical services as the first responders on the scene. Table 24.2 details the acronym THREAT, which stands for Threat suppression, Hemorrhage control, Rapid Extrication at the scene, Assessment by medical providers referring to triage, and then Transport to definitive care (Jacobs, 2014).

A rapid response can promote lifesaving interventions, provided the scene is safe. Remaining on the scene during dynamic events must be carefully evaluated. A recent National Academy of Medicine (NAM; Hick, et al., 2016) recommendation suggests that implementing mass casualty triage systems, such as START (Simple Triage and Rapid Treatment), along with staging and casualty collection points, may be detrimental as they may potentially delay the transport of injured patients to more definitive care. If patient transportation is in place, further assessment and usual trauma care, triage color coding, and interventions can safely be performed en route to a trauma center.

| TABLE 24.1 Run, Hide, Fight—Active Shooter Protocol |
| Run • Have an escape route and plan in mind  
Leave your hands visible |
| Hide • Hide in an area out of the shooter’s view  
Block entry to your hiding place and lock the doors  
Silence your cell phone and/or pager |
| Fight • As a last resort and only when your life is in imminent danger  
Attempt to incapacitate the shooter  
Act with physical aggression and throw items at the active shooter |


| TABLE 24.2 Concept to Action—THREAT Acronym |
| T Threat suppression  
H Hemorrhage control  
RE Rapid extrication to safety  
A Assessment by medical providers  
T Transport to definitive care |

RECOVERY

Immediate after-action discussion (called a “hot wash”) should be conducted after each training session and especially after an incident, to identify what went well and what needs to be improved. Best practices for planning for active shooter after-action planning are essential. Recommended resources may include:

- Active Shooter Plan Template available at www.cdse.edu/documents/toolkits-physical-active-shooter-plan-template.docx

COMMUNITY RESILIENCE

Community resilience activities after an active shooter incident should focus on recovery. After an active shooter event, the effects on the community can be broad and profound. Efforts to promote “community recovery,” defined as “the ability to collaborate with community partners to plan and advocate for the rebuilding of public health, medical and mental health systems” (Centers for Disease Control and Prevention, 2011), should be put in place through a collaborative process with all stakeholders involved. Because the impact of an active shooter incident extends well beyond the primary victims to encompass the bystanders, families, the healthcare facility, and the community, open communication postincident can build the foundation for community recovery.

MENTAL HEALTH SUPPORT

The mental health effects of an active shooter incident on both providers and victims cannot be underestimated (NAM, 2016). These events have both individual- and community-level effects. Immediate availability of mental health services is important for all involved in order to prevent psychological sequelae (American Psychological Association, 2016). For example, patients and employees should be referred to appropriate mental health resources offered by the hospital’s Employee Assistance Program or other available services in the community.

Psychological first aid (PFA) is an evidence-based approach to supporting and assisting individuals across the life span after a traumatic event such as an active shooter incident. Intervening with PFA early postincident can promote adaptive coping through debriefing, calm reassurance, and community assistance so those impacted can feel safe and supported (U.S. Department of Health and Human Services, 2014).

ETHICS

Many ethical dilemmas exist surrounding any active shooter incident. As patient advocates, nurses may be placed in the difficult situation of choosing between protecting their own personal safety and protecting the life and health of their patients. One way to address this is through preparedness, by having open discussions during trainings and drills about these challenging and difficult decisions (U.S. Department of Health and Human Services, 2014). Nurses should carefully consider their personal values surrounding such situations as part of preparedness planning and be given the opportunity to process their experiences.

CONSIDERATIONS FOR NURSES IN MASS SHOOTINGS

With standardization and the establishment of best practices, nurses working in healthcare organizations can effectively mitigate how you will play during a crisis.

1. Can you respond?
2. Do you have family responsibilities that must take priority (dependent elder, young children)?
3. Will your job allow you time off?
4. Are you physically able to respond?
5. Are you psychologically prepared?
6. Are you trained?
7. Are you prepared for the possibility of being arrested?

CONSIDERATIONS FOR NURSES IN CIVIL UNREST

Disaster preparedness and response is a cycle that begins with planning and continues through recovery. As in disaster response, there is the initial desire of the public to respond. As the recovery drags on, the enthusiasm of the larger community and healthcare professionals diminishes long before the recovery is complete. Likewise, during civil unrest, there are many who want to go out and protest and support the protesters. As nurses, we must remember that long after the celebrities and the cameras have gone, the community and our nurses living in the community need our constant presence and assurance that we are there to support them through their recovery.

Whether you are in nursing leadership, working in community health, an outpatient setting, or at the bedside, there are some essentials for every setting. All healthcare facilities and staff must be prepared. These are the 10 musts of preparedness for civil unrest.

1. Hospital security trained in crowd control during riots
2. Local leaders identified and trained in emergency management and as street medics
3. Local leaders and students included in drills that demonstrate how to stay safe during a riot
4. A communication plan established by local leaders, street medics, and hospitals (Kotora et al., 2014)
5. What is expected from other organizations modeled by nurse leaders (Kotora et al., 2014 [They are chosen for the role because they manage the largest workforce in the hospital and are trusted members of the community.])
6. The intersection of complex issues and the need to intervene with staff when there is a lack of understanding recognized by nurse managers
7. Orderly triage supported by previously trained local and prominent community leaders within the crowd (Kotora et al., 2014)
8. Mobile clinics used or home visits planned for and then provided during the crisis
9. Hospital and community partnerships designed to help heal young people impacted by violence with case management, mentorship, and evidence-based trauma interventions (Jacobs et al., 2014)
10. All nurses trained in trauma-informed care

**Summary**

This chapter presented two all too common situations—civil unrest and active shooters. The frequency of both has shown a steady increase since the 1980s. In both civil unrest and active shooter situations there is both a role for community and for healthcare preparedness with the nurse taking a significant leadership position in both.

In civil unrest it is the community that is thrown into a state of disequilibrium and faces a situation that is perceived as threatening; the unrest disrupts the normal functioning of the community and infrastructure. Yet, the threat that resulted in the civil unrest is infrequently dealt with during the crisis period, but the underlying societal issues may impact the relationship between nurses, staff, and patients. Instead, authorities focus on crowd control preventing the loss of life or damage to property. Nurses must focus on interpersonal relationships and the provisions of services to the community during the crisis. Before and after the crisis, the focus should be on security training, building relationships, and understanding societal issues that impact people differently.

Like civil unrest, active shooters are becoming a frequent sight in the United States. An active shooter is any individual actively engaged in killing or attempting to kill people in a confined and populated area. Four primary types of active shooters were covered: mass shooters, mass killings, terrorism, and active shooters in a healthcare setting. Preparedness and active shooter drills can help individuals and facilities prepare. The most common training includes knowing when to run, hide, or fight. Unlike many facilities, hospitals are meant to have easy access to the public and, because nurses have a responsibility as the patients’ advocates, the option to run and hide may cause an ethical conflict for nurses. Each person must know what he or she is willing to do and when personal safety must be considered.

Regardless of whether one is faced with civil unrest or an active shooter, there are helpful steps one can take to help ensure the safe functioning of the healthcare setting. Assessing one’s own willingness to engage in civil discussions about underlying social issues and one’s willingness to risk personal safety helps the nurse to be prepared. Each nurse can begin by evaluating his or her own priorities and beliefs. Evaluation of the safety plans of a facility and getting to know key community partners gives the nurse important data to assist in planning and response.

**Study Questions**

1. Consider your own community. If faced with the shooting of an unarmed teenager and rising tension within the community, what are the steps you as a nurse leader could take within a healthcare facility to prepare and who should be considered vital community partners?

2. A code is called indicating an active shooter is in the hospital. As the charge nurse on a unit during visiting hours, what are the actions that can be taken to protect both patients and visitors?

**Useful Links**

Active Shooter Plan Template. www.cdsse.edu/documents/toolkits-physical/active-shooter-plan-template.docx
Better Together. www.bettertogetherstl.com
Forward Through Ferguson. forwardthroughferguson.org/report/executive-summary/clarifying-our-terms
Gun Violence Archive. www.gunviolencearchive.org
How to Prepare for and Respond During and After an Active Shooter Incident. www.fema.gov/media-library-data/1472672897352-d28bb197db5389e4ddecf335d3d867/FEMA_ActiveShooter_OnePager1d15_508_FINAL.pdf
My Nursing Education. mynursingeducation.org/category/violence

**References**
