

DISASTER MEDICINE and PUBLIC HEALTH PREPAREDNESS

An Official Publication of the Society for Disaster Medicine and Public Health, Inc



IN THIS ISSUE:

Characteristics of Effective Disaster Responders and Leaders

Yemen's Humanitarian Crisis

Quarantine for Zika Virus? Where is the Science?

Usage Patterns of the American Red Cross Hurricane App During Hurricane Sandy

Insights Into French Emergency Planning

Evaluation of Hospital Disaster Preparedness

SDMPH
SOCIETY FOR DISASTER MEDICINE & PUBLIC HEALTH

CAMBRIDGE
UNIVERSITY PRESS

VOLUNTEER
 Community Events Heart Health Emergency Sheltering Pet Preparedness
 Emergency Response Trainings Responder Rehab Tobacco Cessation
 Vaccination Clinics Outreach to Underserved Community Members Obesity Reduction
 First Aid During Healthy Living Health Screenings



Medical Reserve Corps

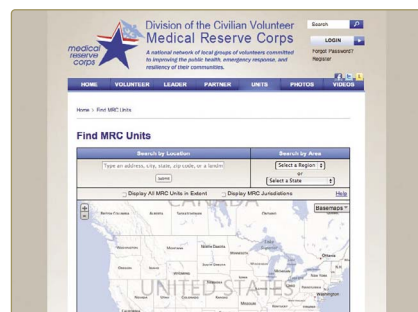
The Medical Reserve Corps (MRC) is a national network of community-based groups of volunteers—medical and public health professional and others—who assist their communities in activities that promote and strengthen public health, emergency response, and community resiliency.

Whether you wish to volunteer, be a partner, or just learn more, you simply need to locate and contact the MRC unit nearest you. Here's how to find your MRC:

1. Visit the MRC national Web site at:

<http://www.medicalreservecorps.gov>

2. Click on the map at the lower left-hand side of the homepage, where it says, "Find a Unit."
3. On the following page, you may search for your MRC by entering your address or zip code.
4. Once you have located the MRC unit nearest you, click on the MRC's name to read their profile and access contact information.
5. Call and/or email your local MRC Leader to get started!



Connect with the MRC

Consider learning more about starting an MRC in your community—or find out who to talk to in your local government to see that happen! Contact the Medical Reserve Corps Program for more information and additional guidance.

Phone: 202-692-4724
 E-Mail: MRCcontact@hhs.gov
 FaceBook: <http://www.facebook.com/medicalreservecorps>
 Twitter: @MRC_ASPR



Disaster Medicine and Public Health Preparedness

Editor-in-Chief

James J. James, MD, DrPH, MHA

Chief Executive Officer,
Society for Disaster Medicine and
Public Health, Inc., USA

Deputy Editor

David Markenson, MD, MBA

Chief Medical Officer
Sky Ridge Medical Center
Senior Fellow and Medical Director
Center for Disaster Medicine
New York Medical College

Associate Editors

Elizabeth Ablah, PhD, MPH

Associate Professor, University of
Kansas-Wichita, School of Medicine

Daniel J. Barnett, MD, MPH

Associate Professor,
Department of Environmental
Health Sciences, Johns Hopkins
Bloomberg School of Public Health

Charles W. Beadling, MD, FAAFP, IDHA, DMCC

Director, Center for Disaster and Humanitarian
Assistance Medicine Uniformed Services
University of the Health Sciences

Sandra C. Bibb, DNSc, RN, FAAN

Dean and Professor, College of Health Professions,
Wichita State University, Wichita, Kansas

Rita V. Burke, PhD, MPH

Assistant Professor of Research Surgery
and Preventive Medicine Pediatric Surgery,
Children's Hospital Los Angeles

Laura J. Cavanaugh, MD, FAAP

Pediatrician, Private Practice, USA

Jennifer L. Chan, MD, MPH

Assistant Professor, Department
of Emergency Medicine, Northwestern
Feinberg School of Medicine

Mike Clarke, PhD

Professor, Queens University,
All Ireland Methodology Hub, Belfast, UK

Linda C. Degutis, DrPH, MSN

Executive Director, Defense Health Horizons
Chief Science Officer, The Awielle Foundation,
Atlanta, GA

Betty Duggan

Director, NYC Medical Reserve Corps, Office of
Emergency Preparedness and Response, NYC
Department of Health and Mental Hygiene

Anat Gesser-Edelsburg, PhD

Head of Health Promotion Program, School of
Public Health, Faculty of Social Welfare and
Health Science, University of Haifa

Shinichi Egawa, MD, PhD

Division of International Cooperation for
Disaster Medicine, IRIDeS, Tohoku University,
Sendai, Japan

Dan Hanfling, MD

Inova Health System, Falls Church, VA

Edbert B. Hsu, MD, MPH

Director of Training,
Johns Hopkins Office of Critical Event
Preparedness and Response

Stephanie Kayden, MD, MPH

Director, International Emergency
Medicine Fellowship, Brigham and
Women's Hospital

Stephen S. Morse, PhD

Professor of Epidemiology & Director,
Infectious Disease Epidemiology Certificate,
Mailman School of Public Health,
Columbia University, New York, NY

Frederick C. Nucifora Jr., DO, PhD, MHS

Department of Psychiatry and
Behavioral Science, Johns Hopkins
University School of Medicine

Michael J. Reilly, DrPH, MPH, NREMT-P, CEM

Director, Center for Disaster Medicine
Associate Professor of Environmental Health
Science and Emergency Medicine New York
Medical College

Managing Editor

Alice O'Donnell

HJF, National Center for Disaster Medicine and
Public Health
Editorial support provided by the National Center
for Disaster Medicine and Public Health

Copyeditor

Jennifer Holmes

Editorial Board

John Armstrong, MD, FACS

Associate Professor of Surgery,
USF Health, University of South Florida

Frederick M. Burkle Jr., MD, MPH, DTM, FAAP, FACEP

Senior Fellow, Harvard Humanitarian
Initiative, Harvard School of Public Health

Cham E. Dallas, PhD

Director, Institute for Health Management
in Mass Destruction Defense, University of
Georgia & Medical College of Georgia

Linda C. Degutis, DrPH, MSN

Director, National Center for Injury
Prevention and Control, Centers for Disease
Control and Prevention

Lewis R. Goldfrank, MD

Herbert W. Adams Professor and Chair,
Department of Emergency Medicine,
New York University
Medical Director, New York City Poison Center

John L. Hick, MD

Associate Professor of Emergency
Medicine, Hennepin County Medical
Center, University of Minnesota

James G. Hodge, Jr., JD, LLM

Lincoln Professor of Health Law and Ethics
Director, Public Health Law and Policy Pro-
gram, Sandra Day O'Connor College of Law,
Arizona State University

Gabor Kelen, MD, FRCP(C), FACEP

Professor and Chair, Department of Emergency
Medicine, Johns Hopkins University

Thomas D. Kirsch, MD, MPH, FACEP

Associate Professor, Director of the
Center for Refugee and Disaster
Response, The Johns Hopkins
School of Medicine/Bloomberg
School of Public Health

William Lanier, MD

Professor of Anesthesiology, Mayo Clinic

Yasuhiro Otomo, MD, PhD

Director, Trauma and Acute Critical
Care Medical Center
Professor and Chairman,
Tokyo Medical and Dental University
Hospital of Medicine, Japan

Betty Pfefferbaum, MD, JD

Chairman, Department of Psychiatry
and Behavioral Sciences, University of Okla-
homa Health Sciences Center

Irwin Redlener, MD

Director, National Center for Disaster
Preparedness, Columbia University

Charles L. Rice, MD

President, Uniformed Services University
of the Health Sciences

Hou Shi-ke, MD

Institute for Disaster & Emergency
Medicine of PAPF
Affiliated Hospital of Logistic University, Tianjin
City, China

W. Craig Vanderwagen, MD

RADM, US Public Health Service, retired
Senior Partner, Martin, Blanck,
and Associates

Statistical Editors

Guohua Li, MD, DrPH

M. Finster Chair in Anesthesiology
and Epidemiology, Columbia
University College of Physicians and
Surgeons

Michael A. Stoto, PhD

Professor, Health Services Administration
and Population Health, Georgetown University
School of Nursing and Health Studies

Chair of Global Committee

Raymond E. Swienton, MD, FACEP

Co-director of EMS, Disaster Medicine and
Homeland Security Section, University of Texas
Southwestern

Associate Board

Erik Auf der Heide, MD, MPH, FACEP

Agency for Toxic Substances
and Disease Registry,
US Department of Health and
Human Services

Joseph A. Barbera, MD

Co-director, Institute for Crisis,
Disaster, and Risk Management,
The George Washington
University

Donna F. Barbisch, DrHA, MPH

Director, Institute for Global and Regional
Readiness

Steven M. Becker, PhD

Professor, College of Health Sciences
Old Dominion University

Georges Benjamin, MD, FACP

Executive Director, American Public Health
Association

John Brownstein, PhD

Associate Professor, Clinical and Public Health
Informatics, Boston Children's Hospital

Arthur Cooper, MD, MS, FACS, FAAP, FCCM

Director of Trauma & Pediatric Surgical
Services, Harlem Hospital Center

Asha Devereaux, MD, MPH

Chair, American College of Chest
Physicians Disaster Response
Network

Edward Eitzen, MD, MPH

Senior Partner, Biodefense and Public
Health Programs, Martin, Blanck and
Associates

Mikael Eliasson, MD, PhD

Strategic Marketing Leader,
General Medicine, GE Healthcare

Joshua Epstein, PhD

Director, Center on Social and
Economic Dynamics, The Brookings Institution

J. Christopher Farmer, MD, FCCM

Associate Dean, Critical Care Medicine,
Mayo Clinic College of Medicine

Richard Garfield, RN, DrPH

Henrik H. Bendixen Professor of Clinical
International Nursing, Columbia University

Jeffrey Hammond, MD, MPH

Clinical Professor of Surgery, Robert Wood
Johnson Medical School

D.A. Henderson, MD, MPH

Center for Biosecurity, University of
Pittsburgh Medical Center

David Joyner, MD

Vice Chairman/CMO, Salus Healthcare
International

David Lakey, MD

Commissioner, Texas Department of State
Health Services

E. Brooke Lerner, PhD

Department of Emergency Medicine,
Medical College of Wisconsin

Jonathan Links, PhD

Director, Center for Public Health
Preparedness, Johns Hopkins Bloomberg
School of Public Health

Craig H. Llewellyn, MD, MPH, MSTMH, FACPM

Emeritus Professor of Military Medicine,
Emergency Medicine, Preventative
Medicine & Surgery, Uniformed Services Uni-
versity School of Medicine

Darrell E. Lovins, DO, MPH, FACOFF

Associate Dean, Clinical Sciences,
William Carey University

Anthony Macintyre, MD

Visiting Associate Professor,
Institute for Crisis, Disaster, and
Risk Management, The George
Washington University

John Mutter, PhD

Professor of International and
Public Affairs, The Earth Institute
at Columbia University

Kobi Peleg, PhD, MPH

Director, Israel National Center for Trauma and
Emergency Medicine

Cheryl Peterson, RN, MSN

Senior Policy Fellow, American Nurses
Association

Steven J. Phillips, MD

Director, Specialized Information Services,
Associate Director, National Library of
Medicine, US Department of Health
and Human Services

Louis Rowitz, PhD

Professor, Community Health Sciences,
School of Public Health, University of Illinois at
Chicago

Joseph Scanlon

Professor Emeritus and Director,
Emergency Communications and
Research Unit, Carleton University

R. Tom Sizemore III, MD

Principal Deputy Director, Office of
Preparedness and Emergency Operations,
US Department of Health and Human Services

Robert Ursano, MD

Professor/Chair, Department of Psychiatry,
Uniformed Services University of the Health
Sciences

Jeb Weisman, PhD

Director of Strategic Technologies,
National Center for Disaster Preparedness,
Columbia University

Kevin Yeskey, MD

Senior Advisor for Emergency Public Health,
MDB, Inc.

Global Committee

Michael Christian, MD, FRCP(C)

Department of Medicine, University of
Toronto, Canada

Herman Deloof, MD, PhD, FCCM, FCEM (dist)

Research Group on Disaster Medicine,
Free University of Brussels

Natalia Gudzenko, MD

Laboratory for Cancer Epidemiology, Research
Center for Radiation Medicine, Ukraine

Keqin Rao, MD, MPH

Director, National Center for Health Statistics and
Information, Ministry of Health, China

Alessandra Rossodivita, MD EMDM

San Raffaele Hospital Scientific Foundation,
Milan, Italy

Nobhojit Roy, MD, MPH

Bhabha Atomic Research Center Hospital,
Mumbai, India

Disaster Medicine and Public Health Preparedness

OCTOBER 2016

Vol 10/No 5

On the Cover

- 699** Have Lessons Been Learned? Applications From Ebola to Zika Virus
Rita V. Burke

Editorial

- 700** Reflections
James J. James

Commentary

- 701** Yemen's Unprecedented Humanitarian Crisis: Implications for International Humanitarian Law, the Geneva Convention, and the Future of Global Health Security
Alba Ripoll Gallardo, Frederick M. Burkle, Jr., Luca Ragazzoni and Francesco Della Corte
- 704** Quarantine for Zika Virus? Where is the Science?
Kristi L. Koenig

Policy Analysis

- 707** Zika Virus: A Basic Overview of an Emerging Arboviral Infection in the Western Hemisphere
Kelly G. Vest

Rapid Report

- 713** Zika Virus and Global Implications for Reproductive Health Reforms
James G. Hodge, Jr, Alicia Corbett, Ashley Repka and P. J. Judd

Brief Reports

- 716** 2015 Nepal Earthquake: Analysis of Child Rescue and Treatment by a Field Hospital
Jun Wang, Hui Ding, Qi Lv, Jin-hong Chen, Yan-feng Sun, Hao-jun Fan and Qiu-ling Liu
- 720** Characteristics of Effective Disaster Responders and Leaders: A Survey of Disaster Medical Practitioners
Richard V. King, Gregory Luke Larkin, Raymond L. Fowler, Dana L. Downs and Carol S. North
- 724** When Health Diplomacy Serves Foreign Policy: Use of Soft Power to Quell Conflict and Crises
Nasim Sadat Hosseini Divkolaye, Mohammad Hadi Radfar, Fariba Seighali and Frederick M. Burkle, Jr
- 728** Learning Outcome Measurement in Nurse Participants After Disaster Training
Sharon L. Farra, Sherrill Smith and Marie A. Bashaw
- 734** Evaluation of an International Disaster Relief Team After Participation in an ASEAN Regional Forum Disaster Relief Exercise
Jeong IL Lee, Kang Hyun Lee, Oh Hyun Kim, Yong Sung Cha, Sung Oh Hwang, Hyun Kim and Kyung Chul Cha

Original Research

- 739** Interpersonal Trust and Ability of Elderly Victims to Perform Activities of Daily Living in the Ya'an Earthquake Reconstruction Area, China
Ying Liang and Wei Ju

TABLE OF CONTENTS

- 746** Prevalence and Risk Factors for Post-Traumatic Stress Reaction Among Resident Survivors of the Tsunami That Followed the Great East Japan Earthquake, March 11, 2011
Chieko Matsubara, Hitoshi Murakami, Koubun Imai, Tetsuya Mizoue, Hidechika Akashi, Chiaki Miyoshi and Tamotsu Nakasa
- 754** Supporting Community Health Workers After a Disaster: Findings From a Mixed-Methods Pilot Evaluation Study of a Psychoeducational Intervention
Tara Powell and Paula Yuma-Guerrero
- 762** "Just-in-Time" Personal Preparedness: Downloads and Usage Patterns of the American Red Cross Hurricane Application During Hurricane Sandy
Thomas D. Kirsch, Ryan Circh, Richard A. Bissell and Matthew Goldfeder

Concepts in Disaster Medicine

- 768** Using Insights From Behavioral Economics to Strengthen Disaster Preparedness and Response
Sebastian Linnemayr, Claire O'Hanlon, Lori Uscher-Pines, Kristin Van Abel and Christopher Nelson
- 775** Integrating Social Media Monitoring Into Public Health Emergency Response Operations
Tamer A. Hadi and Keren Fleshler

Systematic Review

- 781** Tools and Checklists Used for the Evaluation of Hospital Disaster Preparedness: A Systematic Review
Mahmood Nekoie-Moghadam, Lisa Kurland, Mahmood Moosazadeh, Pier Luigi Ingrassia, Francesco Della Corte and Ahmadreza Djalali

From the Field

- 789** Insights Into French Emergency Planning, Response, and Resilience Procedures From a Hospital Managerial Perspective Following the Paris Terrorist Attacks of Friday, November 13, 2015
Ali Ghanchi

CONTACT INFORMATION

Editorial Office

NCDMPH
11300 Rockville Pike, Suite 1000
Rockville, MD 20852
P: 240-833-4429
E: dmpjournal@gmail.com

Edited from the Offices of the National Center for Disaster Medicine and Public Health (NCDMPH) located at the Uniformed Services University of the Health Sciences (USUHS) under a cooperative enterprise agreement between USUHS and The Society for Disaster Medicine and Public Health. The views expressed in each article are those of the author and do not necessarily reflect the official policy or position of NCDMPH, USUHS, the Department of Defense, or the United States Government.

Manuscript Submission and Instructions for Authors

May be found online at <http://mc.manuscriptcentral.com/dmp>

DMPHP Reprints & Permissions

Article Reprints/E-prints Inquiry

For use by commercial entities or educational institutions:
special_sales@cambridge.org

Permissions Inquiry

For rights and permissions inquiries, please visit www.cambridge.org/about-us/rights-permissions

Advertising

For details about advertising rates and opportunities in *Disaster Medicine and Public Health Preparedness*, or to request a media pack, please contact M. J. Mrvica Associates, 2 West Taunton Avenue, Berlin, NJ 08009; Phone: 856-768-9360; Fax: 856-753-0064; Email: mjmrvica@mrsvica.com.

Subscription Rates and Service

Subscription Information

Disaster Medicine and Public Health Preparedness (ISSN: 1935-7893; EISSN: 1938-744X) is published bi-monthly by Cambridge University Press, One Liberty

Plaza, New York, NY 10006. Copyright © 2016 by the Society for Disaster Medicine and Public Health, Inc.

Annual Subscription Rates

Annual institutional print and electronic subscription rates: US \$630.00 in the USA, Canada and Mexico; UK £394.00 + VAT elsewhere. Institutional electronic rates only: US \$483.00 in the USA, Canada and Mexico; UK £301.00 + VAT elsewhere. Prices include surface postage and insurance.

Information on *Disaster Medicine and Public Health Preparedness* and all other Cambridge journals is available at <http://www.cambridge.org/>. Full text for this journal may be found at <http://journals.cambridge.org/dmp>.

When citing this journal, please abbreviate as *Disaster Med Public Health Preparedness*.

Indexed in MEDLINE.

Disaster Medicine and Public Health Preparedness participates in the Health InterNetwork Access to Research Institute Initiative (HINARI), which provides free or very-low-cost online access to major journals in biomedical and related social sciences to local, nonprofit institutions in developing countries. Please visit www.who.int/hinari for more information.

Copyright ©2016 Society for Disaster Medicine and Public Health, Inc.

All rights reserved. No part of this publication may be reproduced, in any form or by any means, electronic, photocopying or otherwise, without permission in writing from Cambridge University Press, except when permission is obtained through a bona fide copyright clearinghouse, such as the Copyright Clearance Center (USA) or the Copyright Licensing Agency (UK). For further information please visit <http://us.cambridge.org/information/rights/> or <http://www.cambridge.org/uk/information/rights/>.

Periodicals postage paid at New York, NY, and additional mailing offices. Return Postage Guaranteed. **Postmaster:** Send address changes in the USA and Canada to: *Disaster Medicine and Public Health Preparedness*, Cambridge University Press, Journals Fulfillment Dept., One Liberty Plaza, New York, NY 10006.