PREHOSPITAL and DISASTER MEDICINE

Volume 39, Number 2

April 2024





The Official Journal of the World Association for Disaster and Emergency Medicine

Cambridge Core

Access leading journals in your subject

Explore today at cambridge.org/core

Cambridge Core



Table of Contents

EDITORIAL Purposeful Sampling: Advantages and Pitfalls
ORIGINAL RESEARCH
DISASTER MANAGEMENT AND MEDICINE Development of Flood Preparedness Behavior Scale: A Methodological Validity and Reliability Study
Pulmonary Evaluation of Earthquake Victims Followed Up in the Intensive Care Unit After the 2023 Turkey Kahramanmaras Earthquakes
PREHOSPITAL CARE Emergency Medical Services Protocols for Assessment and Treatment of Patients with Ventricular Assist Devices 13 Emily L. Larson, BS; Ji Won Woo; Gyeongtae Moon; Kathy Liu; Matthew Vergel; Reed Jenkins, BA; Kelly Jiang, MS; Zachary Darby, MD; Asa Margolis, DO, MPH; Ahmet Kilic, MD
Comparative Analysis of META and SALT Disaster Triage in an Adult Trauma Population: A Retrospective Observational Study Gawin Tiyawat; J. Marc Liu; Thongpitak Huabbangyang; Cesar Luis Roza-Alonso; Rafael Castro-Delgado
Early Vital Sign Thresholds Associated with 24-Hour Mortality among Trauma Patients: A Trauma Quality Improvement Program (TQIP) Study
Bleeding Control Protections Within US Good Samaritan Laws. Matthew J. Levy, DO, MSc; Christopher M. Wend, MD; William P. Flemming, BS; Antoin Lazieh, BS; Andrew J. Rosenblum, MSPH; Candace M. Pineda, MBA, BSN, RN; Douglas M. Wolfberg, Esq; Jennifer Lee Jenkins, MD, MSc; Craig A. Goolsby, MD, Med; Asa M. Margolis, DO, MPH, MS
MASS-GATHERING MEDICINE Interorganizational Knowledge Transfer in Mass Gatherings: Exploring the Health and Safety Stakeholders' Perceptions Participating in the Athens Marathon
Glastonbury Festival: Medical Care at the World's Largest Greenfield Music Festival
EMERGENCY MEDICINE The Relationship Between Lactate and Lactate Clearance with In-Hospital Mortality in Unselected Emergency Department Patients
SYSTEMATIC REVIEWS Paramedics' Success and Complications in Prehospital Pediatric Intubation: A Meta-Analysis
Quantitative Metrics in Mass-Gathering Studies: A Comprehensive Systematic Review

ii Table of Contents

ŀ	RESEARCH REPORTS
	Comparing Doppler Ultrasonography and Computerized Tomography Angiography in Emergency Department Evaluation of Earthquake-Related Crush Injuries: A Case Series Analysis
	Adverse Effects After Prehospital Administration of Naloxone by Bystanders: A Preliminary Study
	Components of an Updated Disaster Medicine Curriculum Included in Emergency Medicine Residency and Emergency Medical Services Fellowship in the United States
I	FIELD REPORT Secondary Ambulance Transfers During the Mass-Casualty Terrorist Attack in Israel on October 7, 2023
(COMMENTARIES Disaster Preparedness and Safety Curriculum for Early Childhood Education in Indonesia
	Dhikr and Qur'an Recitation Therapy: An Idea to Recover the Mental Health of Families of the Death Victims of Mount Marapi Eruption in West Sumatra, Indonesia

EDITORIAL BOARD

Prehospital and Disaster Medicine

EDITOR-IN-CHIEF Samuel J. Stratton, MD, MPH

University of California-Los Angeles Los Angeles, California, USA

EMERITUS EDITOR-IN-CHIEF

Marvin L. Birnbaum, MD, PhD University of Wisconsin-Madison Madison, Wisconsin, USA

DEPUTY EDITOR Jeffrey M. Franc, MD, MS(Stat), MSc, FCRP (EM), DSportMed

University of Alberta, Alberta, Canada

MANAGING EDITOR Ellen Johnson, MS

SECTION EDITORS

Emergency Medical Services

Darren Walter, FRCS(Ed) FCEM, FIMC

University Hospital South Manchester Manchester, UK

Mass Gathering Medicine Paul Arbon, PhD

School of Nursing and Midwifery Flinders University Adelaide, South Australia Nursing

Elaine Daily, RN, BSN, FCCM, FAHA

Madison, Wisconsin, USA

ASSOCIATE EDITORS David A. Bradt, MD, MPH

Royal Melbourne Hospital Melbourne, Australia

Kimball Maull, MD, FACS

Department of Surgery Hamad General Hospital Doha, Qatar

Steven Rottman, MD

University of California-Los Angeles Los Angeles, California, USA

Geert Synaeve, MD

Brussels, Belgium

EDITORIAL BOARD Bruria Adini, PhD

Sackler Faculty of Medicine Tel Aviv University Tel Aviv, Israel

Carol Amaratunga, PhD

School of Child and Youth
Development
University of Victoria Research
Association of the Justice Institute
of British Columbia

Victoria, British Columbia, Canada Yaron Bar-Dayan, MD, MHA

Israeli Defense Forces Home Front Command Or-Yehuda, Israel

Sue Anne Bell, PhD, FNP-BC

School of Nursing University of Michigan Ann Arbor, Michigan, USA

Tareg Bey, MD

The University of Texas MD Anderson Cancer Center Houston, Texas, USA

Joost Bierens, MD, PhD

Amsterdam, The Netherlands

Richard A. Bissell, PhD

Center for Emergency Education and Disaster Research University of Maryland-Baltimore Baltimore, Maryland, USA

Stuart A. Bradin, DO, FAAP, FACEP

University of Michigan/Michigan Medicine Ann Arbor, Michigan, USA

Felipe Cruz-Vega, MD

Office of Social Security Mexico City, Mexico

Joe Cuthbertson, MPH, MSc, MEH

Disaster Resilience Initiative Monash University Australia

Robert A. DeLorenzo, MD, MSM, FACEP

Medical Corps United States Army San Antonio, Texas, USA

Romeo R. Fairley, MD

University of Texas Health San Antonio, Texas, USA

R. Paul Farrell, CD, MB, BCH, BAO, DA, LMCC

Kamloops, British Columbia, Canada

Erik S. Gaull

George Washington University Washington, DC, USA

Michael Gunderson

Center for Systems Improvement Lakeland, Florida, USA

Pinchas Halpern, MD

Critical Care and Emergency Medicine Tel Aviv University Tel Aviv, Israel

Keith Holtermann, MD

George Washington University Washington, DC, USA

Mark Keim, MD

Centers for Disease Control and Prevention Atlanta, Georgia, USA

Todd J. LeDuc, EMT-P

Broward Sheriff Fire Rescue Ft. Lauderdale, Florida, USA

Lidia Mayner, PhD

School of Nursing and Midwifery Flinders University Adelaide, South Australia

Andrew Milsten, MD, MS, FACEP

University of Massachusetts Emergency Medicine Worcester, Massachusetts, USA

Jerry Overton

IAED Emergency Clinical Advice System & Standards Board Salt Lake City, Utah, USA

Lynda Redwood-Campbell, MD, MPH

Department of Family Medicine McMaster University Hamilton, Ontario, Canada

Edward Ricci, PhD

Behavioral and Community Health Sciences University of Pittsburgh Pittsburgh, Pennsylvania, USA

Leonid Roshal, MD

Institute of Pediatrics Academy of Medical Sciences Moscow, Russia

Don Schramm

Disaster Management
Center
University of Wisconsin-Madison
Madison, Wisconsin, USA

Carl Schultz, MD, FACEP

Center for Disaster Medical Sciences University of California, Irvine Irvine, California, USA

Erin Smith, PhD, MPH, MClinEpi

DART Centre Asia Pacific C/O Phoenix Australia Centre for Posttraumatic Mental Health Carlton, Victoria, Australia

Wayne Smith, BSC, MBChB, EMDM, FCEM(SA)

Division of Emergency Medicine University of Cape Town Cape Town, South Africa

Knut Ole Sundnes, MD

Baerum Hospital Solo, Norway

Angelika T. Underwood, PA-C, MScDM

Bassett Healthcare Cooperstown, New York, USA

Darren Walter, MB, ChB, MPH

International Emergency Medicine, University of Manchester, UK

Richard Zoraster, MD, MPH Kaneohe, Hawaii, USA

Editorial Office

World Association for Disaster and Emergency Medicine, 3330 University Avenue, Suite 130, Madison, WI 53705 USA Telephone: (+1) (608) 819-6604; Facsimile (+1) (608) 819-6055; E-mail: pdm@wadem.org

> Editor-in-Chief Samuel J. Stratton, MD, MPH

> > Managing Editor Ellen Johnson, MS

Editorial Assistant Kelly Hutchinson, ND

Publishing and Production Office

Cambridge University Press One Liberty Plaza New York, NY 10006 USA

Advertising Sales

M. J. Mrvica Associates, Inc. 2 West Taunton Avenue Berlin, NJ 08009 (856) 768-9360 mjmrvica@mrvica.com

Copyright © 2024 by the World Association for Disaster and Emergency Medicine. 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. Policies, request forms, and contacts are available at: http://www.cambridge.org/rights/permissions/permission.htm.

Printed by Sheridan, a CJK Group Company. Printed in United States of America on acid-free paper.

POSTMASTER: Send address changes in the USA, Canada, and Mexico to *Prehospital and Disaster Medicine*, Cambridge University Press, Journals Fulfillment Department, One Liberty Plaza, 20th floor, New York, NY 10006. Send address changes elsewhere to Prehospital and Disaster Medicine, Cambridge University Press, Journals Fulfillment Department, UPH, Shaftesbury Road, Cambridge CB2 8BS, England.

Prehospital and Disaster Medicine (Print ISSN 1049-023X; Electronic ISSN 1945-1938) is published bimonthly in the months of February, April, June, August, October, and December for the World Association for Disaster and Emergency Medicine. by Cambridge University Press, One Liberty Plaza, 20th floor, New York, NY 10006. Periodicals postage rate paid at New York, NY, and at additional mailing offices. PDM incorporates the Journal of the World Association for Emergency and Disaster Medicine and the Journal of Prehospital Medicine.

Aims and Scope: The principal mission of Prehospital and Disaster Medicine is the distribution of information relevant to the practice of out-of-hospital and in-hospital emergency medical care, disaster medicine, emergency public health and safety, and disaster mental health and psychosocial support.

Submissions: All manuscripts must be submitted through the Journal's online submission platform, ScholarOne Manuscripts, at http://mc.manuscriptcentral.com/pdm. Please review the Author Instructions and Author Checklist available online before finalizing a submission. All studies that include human subjects must be submitted for review or exemption to a formal human subjects ethics committee.

2024 Subscription Information: Institutions print and electronic: US\$996.00 in the USA, Canada, and Mexico; UK£608.00+VAT elsewhere. Institutions electronic only: US\$712.00 in the USA, Canada, and Mexico; UK£437.00+VAT elsewhere. Individuals print and electronic: US£291.00 in the USA, Canada, and Mexico; UK£178.00+VAT elsewhere. Individuals electronic only: US\$205.00 in the USA, Canada, and Mexico; UK£118.00+VAT elsewhere. Single Part: US\$191.00 in the USA, Canada, and Mexico; UK£117.00+VAT elsewhere. Prices include postage and insurance. Airmail or registered mail is extra. Back volume prices are available upon request. Claims of non-receipt or damaged issues must be filed within three months of cover date.

Indexing: PDM is covered by Clarivate Analytics services and indexed and abstracted in the Science Citation Index (also known as SciSearch®) and the Journal Citation Reports/Science Edition. PDM is comprehensively indexed by the US National Library of Medicine (MEDLINE), Scopus®, Cumulative Index to Nursing and Allied Health (CINAHL), and Health Star Cumulative Index. Abstracts and search capability available at https://www.cambridge.org/core/journals/prehospital-and-disaster-medicine.

Statement of Peer Review Policy: PDM is a signatory with the International Committee of Medical Journal Editors (ICMJE) and the Committee On Publication Ethics (COPE). All scientific papers published in PDM are submitted to subject content and methods experts for peer review. Authors and reviewers are blinded (not aware of the identity of each other). Peer reviewers must declare that there is not a conflict of interest with any manuscript they agree to review. Peer review is accomplished by means of a standard scoring system and specific comments, the results and contents of which are returned to authors for their review.

Prehospital and Disaster Medicine Peer Reviewers for 2023

Original research, systematic review, research report, and field report manuscripts published in *Prehospital and Disaster Medicine* are peer reviewed in a traditional double-blind manner such that the author(s) and reviewers are not aware of each other. Reviewers are expert and experienced researchers in their areas of prehospital medicine and disaster health.

The Editorial Staff of *Prehospital and Disaster Medicine* appreciates the generous support of the Journal and the time and expertise provided by the following Reviewers:

Jonathan Abrahams, MPH, BSc Paul Arbon, RN, Med, PhD Tareg Bey, MD Joost Bierens, MD, PhD Richard Bissell, PhD Frederick Burkle, Jr., MD, MPH, DTM Stuart Bradin, DO Jeff Clawson, MD Jonathan Cuervo, NREMTP Robert De Lorenzo, MD, MSM Romero Fairley, MD, MPH Jeffrey Franc, MD, MS(Stat), MSc Goeff Glenfiddich, PhD, MSc Pinchas Halpern, MD Jennette Joslin, RN, BSN Mark Keim, MD Yusuf Koksal, MD

Todd LeDuc, EMT-P John Longstreet, MD, MPH Lidia Mayner, RN, PhD Jerry Overton, IAED Asim Enes Ozbek, MD Luca Ragazzoni, MD, PhD Steve Rottman, MD Carl Schultz, MD Thomas Shea, MD Wayne Smith, MB, ChB, EMDM Susan Street, DNP, MPH Derrick Tin, MD, MDM Denise Tyler, RN, MSN Angelika Underwood, PA-C, EMDM Darren Walter, MB ChB, MPH Susan Williams, RN, BSN Richard Zoraster, MD, MPH