# PREHOSPITAL and DISASTER MEDICINE

Volume 35, Number 4

August 2020



**CAMBRIDGE**UNIVERSITY PRESS

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



### **AUGUST 2020**

# Table of Contents

| GUEST EDITORIAL 50 States or 50 Countries: What Did We Miss and What Do We Do Now?  |
|---|
| ORIGINAL RESEARCH Six-Hour Manual Ventilation with a Bag-Valve-Tube Device by Briefly Trained Non-Medical Personnel is Feasible 35 Nana Maklada, MD; Malka Katz Shalhav, DMD; Emanuele Lagazzi, MD; Pinchas Halpern, MD |
| Comparing Training Techniques in Personal Protective Equipment Use  |
| Impact of Dispatcher-Assisted Bystander Cardiopulmonary Resuscitation with Out-of-Hospital  Cardiac Arrest: A Systemic Review and Meta-Analysis   |
| Remaining Cervical Spine Movement Under Different Immobilization Techniques   |
| The Effect of Implementation of the American Heart Association Mission Lifeline PreAct Algorithm for Prehospital Cardiac Catheterization Laboratory Activation on the Rate of "False Positive" Activations              |
| Effect of Road Safety Laws on Deaths and Injuries from Road Traffic Collisions in Colombia  |
| SYSTEMATIC REVIEWS  Spinal Immobilization in Disasters: A Systematic Review   |
| Systematic Review and Evaluation of Mathematical Attack Models of Human Inhalational Anthrax for Supporting Public Health Decision Making and Response  |
| SPECIAL REPORTS  Report from the COVID-19 Virtual Summit, Disaster Experts Speak Out, March 31, 2020  |
| Political Intrusions into the International Health Regulations Treaty and Its Impact on Management of Rapidly Emerging Zoonotic Pandemics: What History Tells Us  |

ii Table of Contents

|   | Critical Care Surge Capacity to Respond to the COVID-19 Pandemic in Italy: A Rapid and Affordable Solution in the Novara Hospital   |
|---|---|
|   | Gianmaria Cammarota, MD, PhD; Luca Ragazzoni, MD, PhD; Fabio Capuzzi, DNP; Simone Pulvirenti, DNP;<br>Nello De Vita, MD; Erminio Santangelo, MD; Federico Verdina, MD; Francesca Grossi, MD; Rosanna Vaschetto, MD, PhD;<br>Francesco Della Corte, MD |
|   | A Positive-Pressure Environment Disposable Shield (PEDS) for COVID-19 Health Care Worker Protection 434<br>Li-Chien Chien, MD, DrPH, MBA; Christian K. Beÿ, BS; Kristi L. Koenig, MD  |
|   | An Insight into the Sex Differences in COVID-19 Patients: What are the Possible Causes?   |
|   | Common Domains of Core Competencies for Hospital Health Care Providers in Armed Conflict Zones:  A Systematic Scoping Review  |
|   | Zakaria A. Mani, RN, MN, PhD Candidate; Lisa Kuhn, RN, PhD; Virginia Plummer, RN, PhD   |
|   | Consular Crisis Management Operations: Special Considerations and Challenges  |
| C | CASE REPORTS  Feedback to Prepare EMS Teams to Manage Infected Patients with COVID-19: A Case Series  |
|   | Daniel Aiham Ghazali, MD, PhD; Amina Ouersighni, RN; Matthieu Gay; Virginie Audebault; Thomas Pavlovsky, MD; Enrique Casalino, MD, PhD  |
|   | Erector Spinae Block for Chest Trauma in Aeromedical Prehospital and Retrieval Medicine   |
|   | TIELD REPORT The Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Outbreak at King Abdul-Aziz Medical City-Riyadh from Emergency Medical Services Perspective  |
| L | ETTERS TO THE EDITOR  |
|   | Lactose Dehydrogenase in Patients with Severe COVID-19: A Meta-Analysis of Retrospective Study  |
|   | COVID-19 and Unfinished Mourning  |
|   | Hospital Emergency Management of Emerging Infectious Disease using Instant Communication Technology 465<br>Chih-Hao Lin, MD; Chih-Chia Hsieh, MD; Chih-Hsien Chi, MD  |
|   | Protecting the Prehospital Professional First Aid Teams from Airborne Viral Particles in the Case of Out-of-Hospital Pediatric Cardiac Arrest during the COVID-19 Pandemic  |
|   | The Double-Edged Sword of Iranian Social Media Against COVID-19   |
|   | Cultural Challenges: The Most Important Challenge of COVID-19 Control Policies in Iran  |

Table of Contents iii

| ERRATUM  Comparing Training Techniques in Personal Protective Equipment Use – ERRATUM  |     |  |
|--|-----|--|
| Bonnie Arquilla, MD  Hospital Emergency Management of Emerging Infectious Disease using Instant Communication  Technology – ERRATUM4 | 73  |  |
| Chih-Hao Lin MD: Chih-Chia Hsieh MD: Chih-Hsien Chi MD   | , 3 |  |

# 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

### MANAGING EDITOR Ellen Johnson, MS

### **SECTION EDITORS**

Emergency Medical Services
Darren Walter, FRCS(Ed)
FCEM, FIMC

University Hospital South Manchester Manchester, UK

### Humanitarian Affairs Frederick M. Burkle, MD, MPH, DTM

Harvard Humanitarian Initiative Harvard University Cambridge, Massachusetts, USA

### 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

### Oceania

Graeme McColl

Christchurch, New Zealand

### Psychosocial

Gloria Leon, PhD

University of Minnesota Minneapolis, Minnesota, USA

### ASSOCIATE EDITORS David A. Bradt, MD, MPH

Royal Melbourne Hospital Melbourne, Australia

Wolfgang F. Dick, MD, PhD Mainz, Germany

### 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

### Frank Archer, MD

Department of Community Emergency Health & Paramedic Practice Monash University Melbourne, Australia

### Jeffrey Arnold, MD

Department of Emergency Medicine Santa Clara Valley Medical Center San Jose, California, USA

### 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** Saudi Arabia

Saudi Mabia

### 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

### 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

### Claude de Ville de Goyet, MD

Brussels, Belgium

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

Kamloops, British Columbia, Canada

### Judith Fisher, MD

Edgbaston, Birmingham, UK

### 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 Johnson, MPA

Juneau, Alaska, 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

### Paul Paris, MD

Center for Emergency Medicine University of Pittsburgh Pittsburgh, Pennsylvania, 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

### James M. Shultz, PhD

Center for Disaster & Extreme Event Preparedness University of Miami Miami, Florida, USA

# Erin Smith, PhD, MPH, MClinEpi

Edith Cowan University Joondalup, Western Australia

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

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

### Caroline Spencer, BA, PhD

Accident Research Centre Monash University Melbourne, Australia

### Knut Ole Sundnes, MD

Baerum Hospital Solo, Norway

### Takashi Ukai, MD

Hyogo Emergency Medical Center Hyogo, Japan

### Michael Van Rooyen, MD

Harvard Humanitarian Initiative and Department of Emergency Medicine, Brigham and Women's Hospital Boston, Massachusetts, USA

### 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 Sara Vega

### **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 © 2020 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 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.

2020 Subscription Information: Institutions print and electronic: US\$844.00 in the USA, Canada, and Mexico; UK£515.00+VAT elsewhere. Institutions electronic only: US\$622.00 in the USA, Canada, and Mexico; UK£382.00+VAT elsewhere. Individuals print and electronic: US\$246.00 in the USA, Canada, and Mexico; UK£151.00+VAT elsewhere. Individuals electronic only: US\$179.00 in the USA, Canada, and Mexico; UK£102.00+VAT elsewhere. Single Part: US\$162.00 in the USA, Canada, and Mexico; UK£99.00+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.