PREHOSPITAL and DISASTER MEDICINE

Médecine Pré-Hospitalière et Médecine de Catastrophe

Volume 7, Number 1

January–March 1992

Original Research

Evaluation of the Pharyngeo-Tracheal Lumen (PTL) Airway
Measuring Impact of Changes in EMS Systems
Evaluation of Portable Ventilators
Infant Ventilation
Treatment of Complications of Shock
Nurse-Paramedic Interactions
EMS Systems Issues

Brief Report

Prehospital Thrombolysis Evaluation Immobilization Device

Special Report

Endogenous Digoxin-Like Factor

Administrator

Quality Assessment Indicators

We Believe

Guidelines for Helicopter Dispatch

Editorial

Prehospital Research—How to Do It Better

The Official Journal of the
National Association of EMS Physicians and the
World Association for Emergency and Disaster Medicine
in association with the
Acute Care Foundation and the
National Association of State EMS Directors

Semi-automatic defibrillator with instant data, total review



Marquette's 1200 Responder™ semi-automatic defibrillator begins to analyze the patient's heart signals from the instant the power is switched on. It continuously interprets the heart's rhythms, using a sophisticated and field-tested computer analysis program and quickly guides the operator to provide life-saving defibrillation when appropriate.

The 1200 has an integral digital printer that provides instant, on-site, "hardcopy" ECGs and a report summary which documents everything that occurs. The report summary enables later-arriving life support teams and hospital staff to better assess the patient's condition immediately.

For comprehensive medical review, the Responder 1200 records 40 minutes of continuous ECG on a reusable, solid-state "data card." It's a beat-by-beat, full disclosure, Holter-type, digital recording. Solid-state recording means there are no moving parts to fail, as can happen with traditional tape recorders. The report summary is also recorded on the card to facilitate efficient case review.

The 1200 plays back all stored data integrally, eliminating the added expense and inconvenience of separate data review equipment.

The Responder 1200 ... a complete response program for early defibrillation.

For more information, contact your Marquette representative or call us at 1-800-558-5120, ext. 3000.



Norqueire Emisproy Core Unison

U. S. A.: 8200 W. Tower Ave. • Milwouldee, Wisconsin 53223

Tel. (444) 355-5000 • TLX 297991 MEI UR • FAX (444) 357-0415

Europe: 15. rue Rougemont • 75009 Ports, France

Tel. (33) (1) 42.46.00.19 • FAX (33) (1) 48.01.04.41

Asia/Pacific: 181 Johnston Rd. • Sulte 1010 • Wanchol,
Hong Kong • Tel. (852) 838/398 • FAX (852) 838/507

TABLE OF CONTENTS

Volume 7, Number 1 January-March 1992

Editor's Corner	
Changing Times	11
Original Research	
Multi-Agency, Prehospital Evaluation of the Pharygeo-Tracheal Lumen (PTL) Airway	19
Sabina McMahan, MD, Joseph P. Ornato, MD, Edward M. Racht, MD, Julia Cameron, MD	10
A New Model for Evaluating the Impact of Major System Changes on Emergency Air Medical Scene	
Responses in a Regional EMS System	19
Daniel W. Spaite, MD, FACEP, Toni Brophy, MD, Terence D. Valenzuela, MD, FACEP, Harvey W. Meislin, MD, FACE Elizabeth A. Criss, RN, Paul Hinsberg, BS	
Gas-Powered and Portable Ventilators: An Evaluation of Six Models	25
Jerry P. Nolan, MB, ChB, FCAnaes, Peter J.F. Baskett, BA, MB, BCH, BAO, FFARCS	
Infant Ventilation and Oxygenation by Basic Life Support Providers: Comparison of Methods	35
Thomas E. Terndrup, MD, FACEP, Daniel A. Warner, BA, MS	
The Extracorporeal Joining of Donor (Pig) Spleen (EJDS) for the Treatment of Patients with the	
Complications of Shockogenic Trauma	41
Michael V. Grinev, M.N. Tarelkina, G.M. Frolov, Yu. N. Tsibin	
Nurse-Paramedic Interactions: Teamwork or Turf Wars?	45
C. Eddie Palmer, PhD, Sheryl M. Gonsoulin, RN, MN	
Emergency Medical Services Systems Issues: A Delphi Study	51
Jonathan Chin, MS, EMT-P, Mark E. Shario	
Brief Reports	
Prehospital Thrombolysis in Acute Myocardial Infarction	r 17
Sergey Yu Varshavsky, MD	37
Evaluation of a New Cervical Immobilization/Extrication Device	61
Steven M. Joyce, MD, FACEP, Chris S. Moser, MD	
Special Papart	
Special Report	CF
Endogenous Digoxin-Like Factor: Possible Emergency Implications	03
Administrator	
Developing EMS Quality Assessment Indicators	69
Michel Dagher, DO, MBA, FACEP, Robert I. LLoyd, MBA	



10th Anniversary EMS Today Conference March 11-14, 1992

Featuring The National EMS Medical Director Course

For you, today. For your patients, tomorrow.

he international Jems conference, EMS
Today, is the reward you give yourself, and the promise you bring to patients who rely on your EMS team's expertise. As a medical professional you know the value of staying current with the latest techniques and the newest treatments-especially in a prehospital emergency setting. When you attend EMS Today, you get the most up-to-date information delivered by professionals from the medical field, and you get the opportunity to discuss critical issues with peers from around the nation and around the world.

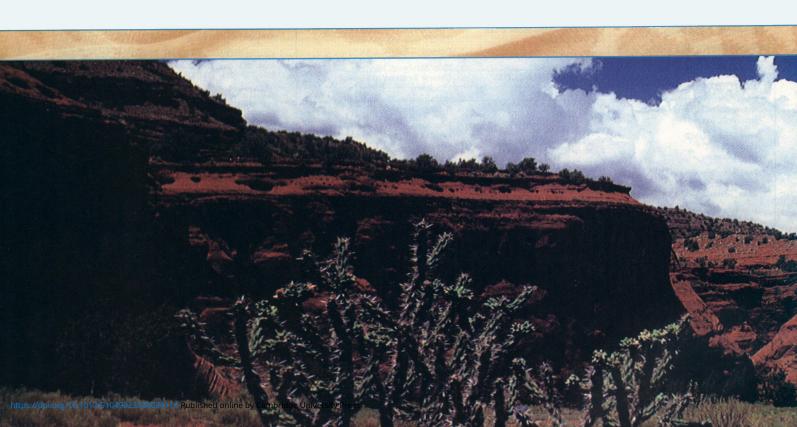
Once again, a special Medical Director's Course offers physicians and administrators a unique way to acquire important skills for managing and leading an EMS team. Presented by leading physicians and administrators, this two-day workshop covers the clinical, administrative, political and economic issues that have a direct impact on the practice of EMS medicine.

It's all part of the 10th anniversary of EMS Today. To celebrate, we're bringing you the biggest and best show ever, with more than 18 preconference workshops, 42 sessions, and 100+ exhibitors. All in the enchanting city of Albuquerque.



Don't miss the *Pediatric Provider Program* at EMS Today.

While in Albuquerque, you can browse through nearby art galleries and view lovely historic adobe architecture. Visit spectacular natural rock formations. And even squeeze in a side trip to Santa Fe or Taos. (Skiing will be excellent in March).



The National EMS Medical Director Course—new this year.

And don't forget that you may attend your choice of any of the EMS Today sessions for a single low registration fee. The Jems Con-

ference Team invites you to take this rare opportunity to meet with your colleagues. Come to exchange ideas and to analyze trends, to help build the future of prehospital medical care. Come to Albuquerque for an unforgettable experience.

For more information, please call 619/431-8088 or complete and mail the form to:

The Conference Corporation P.O. Box 2400 Carlsbad, CA 92018-2400

10th Anniversary • March 11-14, 1992

EMS Today Conference

Featuring
The National EMS
Medical Director Course

Please send me a registration
package for EMS Today.



I am primarily interested in the Medical Director's Course.

Name
Title
Organization
Address

State

Phone

City

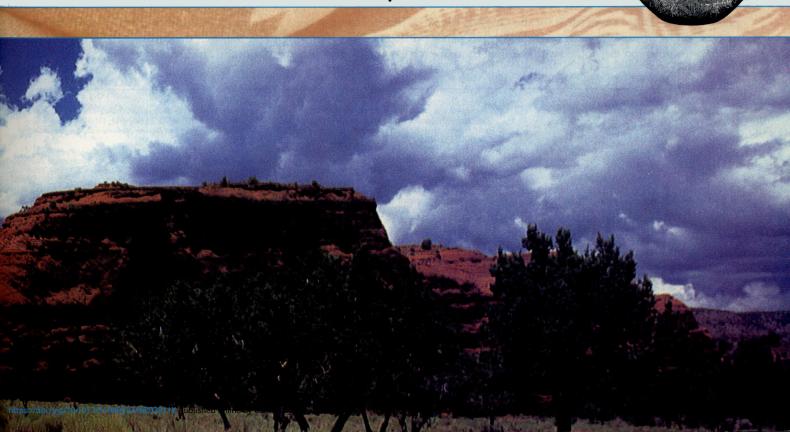
Please include your area code.

Complete and mail to: THE CONFERENCE CORPORATION P. O. Box 2400 Carlsbad, CA 92018-2400

EMST J/F PDM 92



Zip



6 Table of Contents

Air Medical Dispatch: Guidelines for Scene Response
Editorial Direction and Motivation of Prehospital Personnel to Do Research: How to Do It Better
Abstracts Selected Abstracts from the Third Annual Soviet/American Conference on Emergency Medical Care85
Forum Letter to the Editor

Classified Ads	94
Information for Authors	

Editor's Note—The abstract cards for the Original Research papers have not been included in this issue. Instead, so as to ensure a card will be printed for each original research paper printed in *Prehospital and Disaster Medicine*, the cards will be published in bulk by volume and distributed with the final issue of each volume. Your comments about this change are welcome.

Publication and Production Editor

Wa Paliawa

Roland Tracy Will II School of Medicine University of Wisconsin—Madison, USA

> Elizabeth Chapin Editorial Assistant

Advertising, Production and Subscription

Jems Communications
James O. Page, Publisher
Keith Griffiths, Executive Editor
Dana Jarvis Bies, Director of Production
Gail M. Williams, Graphics Specialist
Janene Long, Production Coordinator
MaryBeth Locastro, Advertising Director
Lisa J. Cota, Account Executive
Marte Reavis, Account Executive
Jay Hillis, Circulation/Marketing Director
Kris Nelson, Marketing Manager
Kevin Petrie, Fulfillment Manager

Prehospital and Disaster Medicine (ISSN 1049-023X) is published quarterly in the months of December, March, June, and September by Jems Communications, 1947 Camino Vida Roble, Carlsbad, CA 92008-6513, USA; (619)431-9797. Prehospital and Disaster Medicine incorporates the Journal of the World Association for Emergency and Disaster Medicine and the Journal of Prehospital Medicine.

Editorial Information: Submit manuscripts and editorial inquiries to: Marvin L. Birnbaum, MD, Editor, Prehospital and Disaster Medicine, 1552 University Avenue, Room 434, Madison, WI 53705, USA; (608) 263-7094, (608) 263-2069, Fax (608) 263-2069.

Subscription Information: One year (four issues)—Institutions: (U.S.)\$78; Individuals: \$48; Residents/In Training: \$35; Paramedic, Nurse, EMT: \$35. Canadian subscribers must add \$10 per year, and international subscribers add (U.S.) \$20 per year for postage. Claims of non-receipt or damaged issues must be filed within three months of cover date.

Advertising Information: Contact Jems Communications, P.O. Box 2789, Carlsbad, CA 92018; (619) 431-9797; Fax (619) 431-8176

Abstracts: Abstracts available in the National Association of EMS Physicians Electronic Database and the Emergency Care Information Center (ECIC).

Copyright © 1992 by the National Association of Emergency Medical Services Physicians (USA), World Association for Emergency and Disaster Medicine, and the Acute Care Foundation.

Postmaster: Send address changes to Prehospital and Disaster Medicine, P.O. Box 2789, Carlsbad, CA 92018.

Second-class circulation postage paid at Carlsbad, Calif., and at additional mailing offices.

Prehospital and Disaster Medicine

Vol.7, No.1

PREHOSPITAL and DISASTER MEDICINE

Médecine Pré-Hospitalière et Médecine de Catastrophe

THE OFFICIAL JOURNAL OF THE WORLD ASSOCIATION FOR EMERGENCY AND DISASTER MEDICINE (WAEDM),
THE NATIONAL ASSOCIATION OF EMERGENCY MEDICAL SERVICES PHYSICIANS (NAEMSP),
IN ASSOCIATION WITH THE ACUTE CARE FOUNDATION AND

THE NATIONAL ASSOCIATION OF STATE EMERGENCY MEDICAL SERVICES DIRECTORS (NASEMSD)

EDITOR

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

ASSOCIATE EDITORS

Kimball Maull, MD Univ. of Tennessee Knoxville, Tennessee, USA

Steven Rottman, MD UCLA Hospitals and Clinics Los Angeles, California, USA

Martin Silverstein, MD Uniformed Services Univ. of the Health Sciences Bethesda, Maryland, USA

PAST EDITORS

R Adams Cowley, MD Deceased (JWAEDM 1986-87)

Peter Safar, MD International Resuscitation Research Ctr. (IRRC) Univ. of Pittsburgh Pittsburgh, Pennsylvania, USA (JWAEDM 1981–85)

Michael Gunderson, REMT-P Pinellas County EMS System Tampa, Florida, USA (JPM 1987–88)

CONSULTING EDITORS

Peter Safar, MD Univ. of Pittsburgh Pittsburgh, Pennsylvania, USA

Ronald Stewart, MD Victoria Hospital Halifax, Nova Scotia, Canada

EDITORIAL BOARD

Jakov Adler, MD, Shaare Zedec Medical Ctr. Jerusalem, Israel

Fritz Ahnefeld, MD Univ. of Ulm Ulm, Germany

Paul B. Anderson Idaho Office of EMS Boise, Idaho, USA

Jack Ayres, JD, REMT-P Univ. of Texas Health Science Ctr. Dallas, Texas, USA

Peter Baskett, MD Frenchay Hospital Bristol, UK

Jeff Clawson, MD Salt Lake City Fire Department Salt Lake City, Utah, USA

Richard Cummins, MD Univ. of Washington Seattle, Washington, USA

Craig DeAtley, PA-C Geo. Washington Univ. Med. Ctr. Washington, D.C., USA

James DuCharme, MD Urgences Santé Montréal, Quèbec, Canada

Eelco Dykstra, MD Ctr. for International EMS Wiesbaden, Germany

Morgan Fahey, MD, OBE Shirley Medical Centre Christchurch, New Zealand

Judith Fisher, MD British Assn. for Immediate Care London, UK

Malcolm Fisher, MD Royal North Shore Hospital Sydney, Australia

George Foltin, MD Bellevue Hospital Center New York University Medical Center New York, New York, USA

George Garnett, MD Soldotna, Alaska, USA

Michael Gunderson, REMT-P Pinellas County EMS System Tampa, Florida, USA S. William A. Gunn, MD European Centre for Disaster Medicine

Medical Society of the WHO Geneva, Switzerland

Mark S. Johnson Alaska Dept. Public Health Juneau, Alaska, USA

Michael King, REMT Acute Care Foundation Tampa, Florida, USA

Per Kulling, MD Swedish Poison Information Centre,

Stockholm, Sweden John C. Lane, MD

Univ. of Campinas Medical Ctr. Sao Paolo, Brazil

Baxter Larmon, EMT-P UCLA Medical Ctr. Los Angeles, California, USA

Prof. Li Zhong-Hao, MD Beijing Emergency Medical Ctr. Beijing, China

Susan D. McHenry Virginia Dept. of Health, Richmond, Virginia, USA

Norman E. McSwain, Jr., MD Tulane Univ. Medical Ctr. New Orleans, Louisiana, USA

Sergio Magalini, MD Universita Cattolicà del Sacro Cuore Rome, Italy

Ronald F. Maio, DO Univ. of Michigan Medical Ctr. Ann Arbor, Michigan, USA

Michael Moles, MD Prince Philip Hospital Hong Kong Univ. Hong Kong

Prof. Bernard Nemitz, MD Service d'Aide Medicale Urgente Centre Hospitalier Regionale et Universitaire

80054 Amiens, France

Eric Noji, MD Centers for Disease Control Atlanta, Georgia, USA

Judy Olson, BSN EMS Program Univ. of Wisconsin-Madison Madison, Wisconsin, USA James O. Page, JD Emergency Care Information Ctr. Carlsbad, California, USA

Paul Paris, MD Univ. of Pittsburgh Pittsburgh, Pennsylvania, USA

Jirí Pokorny, MD, DrSc Post-Graduate Medical School Prague, Czechoslovakia

Ameen I. Ramzy, MD Univ. of Maryland Baltimore, Maryland, USA

Lawrence W. Rose, MD Bethesda, Maryland, USA

Leonid B. Roshal, MD Institute of Pediatrics Academy of Medical Sciences Moscow, Russia

Sandra M. Schneider, MD Univ. of Pittsburgh Pittsburgh, Pennsylvania, USA

Victor Semenov, MD Reanimatology Institute Academy of Medical Sciences Moscow, Russia

Carol J. Shanaberger, JD Colorado Division of Regulation Denver, Colorado, USA

Shao Xiaohong, MD Chinese Academy of Medical Sciences Peking Union Medical College Beijing, China

John Shea, MD Loyola Univ. Medical Ctr. Maywood, Illinois, USA

Daniel Spaite, MD Univ. of Arizona Tucson, Arizona, USA

Takashi Ukai, MD Senri Critical Care Medcal Ctr. Osaka, Japan

Connie Walleck, RN, MS Health Science Ctr. SUNY—Syracuse Syracuse, New York, USA

Donald Yealy, MD Scott and White Hospital Dallas, Texas, USA

Three Out Of Four Recommend The

M any moons ago, FirstTemp* invented non-invasive tympanic thermometry. And to many folks, this new technology still seems to work like magic.

Of course, the FirstTemp *Genius* is fast and easy to use. But more importantly, *Genius* is gentle. There's no need to yank your patient's ear into place. Or force the probe dangerously deep into the ear canal.

So it's really no surprise that most doctors prefer the safe, gentle *Genius* over earlier methods. That's why our thermometers take over half a million temps every single day.

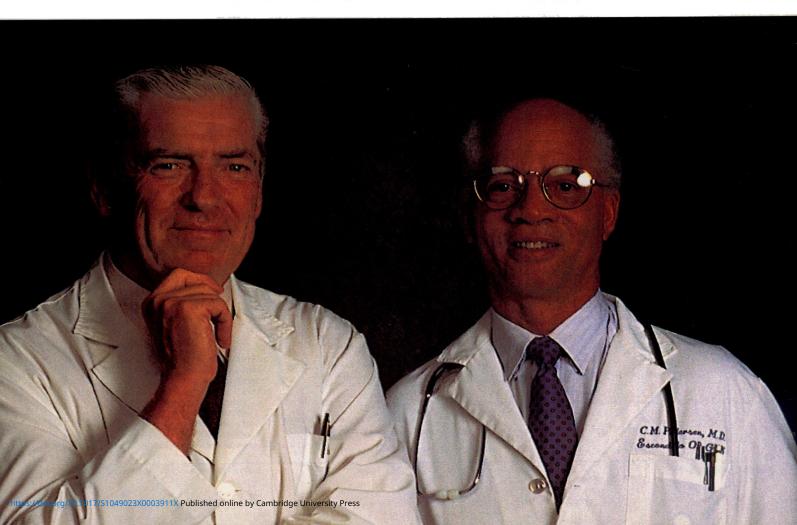
ACCURATE AND RELIABLE

But *Genius* is more than just gentle on your patients.

Since 1987, medical studies have confirmed the accuracy and reliability of FirstTemp clinical temperatures.

Now *Genius* goes even further. Our exclusive "Peak Select System™ records and analyzes 32 separate measurements in under two seconds, giving you the most accurate reading possible.

Only *Genius* offers this patented "Peak Select" advantage, making *Genius* the most technologically advanced thermometer available.



Medicine Men Gentle Genius

And only the FirstTemp *Genius* lets you instantly switch from Fahrenheit to Centigrade while you're out on the floor.

FULL 3-YEAR WARRANTY

Genius is durable and dependable. It's simply constructed with no moving parts to wear out prematurely. In fact, the only thing you'll ever need to replace is the 9-volt battery.

And *Genius* comes with a full three-year warranty. Which means you'll always have a *Genius* available when you need one.

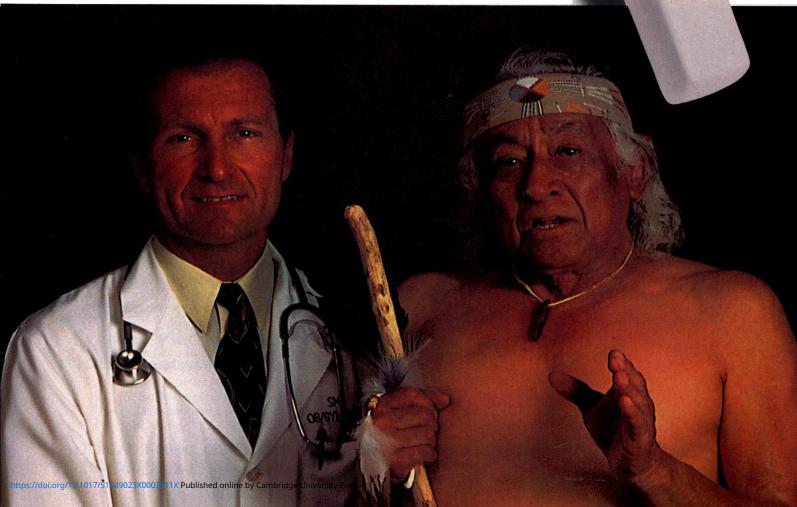
TRY ONE FREE

You'll find there's more to love about the FirstTemp *Genius* than you can shake a stick at.

So call (800) 535-5158 today to try the gentle *Genius* with no obligation.

FirstTemp Cenius The Professional Choice

Copyright 1991/Intelligent Medical Systems, Inc.

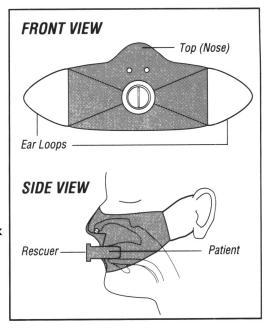


Innovative Design For Maximum Protection

KISS OF LIFE™CPR BARRIER MASK

AN EFFECTIVE PHYSICAL BARRIER TO HBV AND HIV TRANSMISSION*

- One way valve mouthpiece with bite block
- Constructed of silicon material
- ➤ Molded ear loops
- Inlet holes for oxygen cannula
- ➤ Use with standard bagmask resuscitator**
- Pocket portable



- *Data on file at Brunswick Biomedical Technologies, Inc.
- **Not to be substituted for a BVM



BRUNSWICK
BIOMEDICAL
TECHNOLOGIES, INC.
6 Thacher Lane, Wareham, MA 02571

For immediate response call TOLL FREE 1-800-EOA-EGTA 1-800-362-3482