

# INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY<sup>®</sup>

## EDITORIAL

- Understaffing: A Risk Factor for Infection in the Era of Downsizing?**  
BARRY M. FARR, MD, MSc 147

## ORIGINAL ARTICLES

- The Role of Understaffing in Central Venous Catheter-Associated Bloodstream Infection**  
SCOTT K. FRIDKIN, MD; SUZANNE M. PEAR, RN, MS, CIC; THERESA H. WILLIAMSON, RN, BSN, CIC; JOHN N. GALGIANI, MD;  
WILLIAM R. JARVIS, MD 150

- Tuberculosis in the Workplace: OSHA's Compliance Experience**  
MELISSA MCDIARMID, MD, MPH; MELISSA J. GAMPONIA, MD, MPH; MARGARET A.K. RYAN, MD, MPH;  
JON MARK HIRSHON, MD, MPH; N.A. GILLEN, BS; MAUREEN COX, CIH 159

## CONCISE COMMUNICATIONS

- Staphylococcus aureus* Bacteremia: Factors Predicting Hospital Mortality**  
JOSEPH M. MYLOTTE, MD, CIC; JEFFREY R. AESCHLIMANN, BSC; DENISE L. ROTELLA, PHARMD 165

- Knowledge of the Transmission of Tuberculosis and Infection Control Measures for Tuberculosis Among Healthcare Workers**  
KWAN KEW LAI, DMD, MD; SALLY A. FONTECCHIO, RN, BSN, CIC; ANITA L. KELLEY, RN, MSN, CIC;  
ZITA S. MELVIN, RN, BSN, CIC 168

- An Outbreak of Cutaneous Aspergillosis in a Tertiary-Care Hospital**  
E.A. BRYCE, MD, FRCPC; M. WALKER, RN, CIC; S. SCHARF, RN, BA, CIC; A.T. LIM, RN; A. WALSH, RN, CIC;  
N. SHARP; J.A. SMITH, MD, FRCPC 170

- Blood and Body Fluid Exposures Among Surgeons: A Survey of Attitudes and Perceptions Five Years Following Universal Precautions**  
FARRIN A. MANIAN, MD, MPH 172

- Unrecognized HIV-1 Infection in Inner-City Hospital Emergency Department Patients**  
TIPPAVAN NAGACHINTA, MD, DRPH; CLAUDIA R. GOLD, MD; FENNY CHENG, PHD;  
PETER N.R. HESELTINE, MD; PETER R. KERNDT, MD 174

- A Cluster of Legionnaires' Disease in a Community Hospital—A Clue to a Larger Epidemic**  
ISABEL C. GUERRERO, MD; CHRISTINE FILIPPONE, MSN, CIC 177

- Comparative Killing Kinetics of Methicillin-Resistant *Staphylococcus aureus* by Bacitracin or Mupirocin**  
EDWARD K. CHAPNICK, MD; JEREMY D. GRADON, MD; BARRY KREISWIRTH, PhD; LARRY I. LUTWICK, MD;  
BENJAMIN C. SCHAFFER, MD; THOMAS D. SCHIANO, MD; MICHAEL H. LEVI, ScD 178

- Clostridium difficile* Contamination of Blood Pressure Cuffs: A Call for a Closer Look at Gloving Practices in the Era of Universal Precautions**  
FARRIN A. MANIAN, MD, MPH; LYNN MEYER, RN, MPH; JOAN JENNE, RN 180

## READERS' FORUM

- High-Level Disinfection or "Sterilization" of Endoscopes?**  
LAWRENCE FREED MUSCARELLA, PHD 183

Continued inside.

# INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY<sup>TM</sup>

## CONTENTS

Continued from cover

<b>CLASSIFIED MARKETPLACE</b>	158
<b>PRACTICAL HEALTHCARE EPIDEMIOLOGY</b>	
<b>Educational Needs and Opportunities for the Hospital Epidemiologist</b>	
LOUISE M. DEMBRY, MD; WALTER J. HIERHOLZER, JR., MD	188
<b>SYMPOSIUM: NOSOCOMIAL COLONIZATION</b>	
<b>The Role of Colonization in the Pathogenesis of Nosocomial Infections</b>	
MARC J.M. BONTEN, MD, PhD; ROBERT A. WEINSTEIN, MD	193
<b>MEDICAL NEWS</b>	
GINA PUGLIESE, RN, MS	201
High Mortality for HIV Patients Following Cryptosporidiosis	164
TB Guideline Slides Available	182
Report on Antibiotic-Resistant Bacteria	187
Conference on Reuse of Medical Devices	200
Droplet Spread of Ebola Virus	201
Inactivated Polio Vaccine Recommended	201
Hepatitis A Linked to Clotting Factor Concentrates	201
<i>Staphylococcus aureus</i> Genome Mapped	202
Guidelines for Xenotransplants	202
Block Grants May Weaken State Public Health Programs	202
FDA on Internet	203
Managed Care and Public Health	203
Kentucky Guidelines on VRE	203
<b>SHEA NEWS</b>	
MURRAY D. BATT, MD	204
Update on Sixth Annual Meeting	204
SHEA Board and Strategic Planning Meetings	204
Liaison Reports: From the ASQC Healthcare Division	204

THE PUBLICATION OF ADVERTISING IN THE JOURNAL DOES NOT CONSTITUTE ANY GUARANTEE OR ENDORSEMENT BY THE SOCIETY FOR HEALTHCARE EPIDEMIOLOGY OF AMERICA OR SLACK INCORPORATED OF THE ADVERTISED PRODUCT OR SERVICE OR OF CLAIMS MADE BY THE ADVERTISER. THE PUBLICATION OF ARTICLES AND OTHER EDITORIAL MATERIAL IN THE JOURNAL DOES NOT NECESSARILY REPRESENT THE POLICY RECOMMENDATIONS OR ENDORSEMENT BY THE SOCIETY.

**PUBLISHER:** Infection Control and Hospital Epidemiology (ISSN-0899-823X, Canadian GST#129780466) is published exclusively by SLACK Incorporated 12 times a year. Address: 6900 Grove Rd., Thorofare, NJ 08086. Telephone: (609) 848-1000.

**COPYRIGHT 1996** The Society for Healthcare Epidemiology of America, Inc., and SLACK Incorporated. All rights reserved. No part of this publication may be reproduced without written permission from the publisher. Printed in the USA.

**SUBSCRIPTIONS:** Requests should be addressed to the publisher (except Japan). In Japan, contact Woodbell Incorporated, 4-22-11, Kitakasai, Edogawaku, Tokyo 134, Japan. Subscription rates in the United States and possessions: Individual: One year-\$98.00; Two years-\$136.00; Three years-\$169.00; Institutional: One year-\$115.00; Two years-\$165.00; Three years-\$215.00. Fellows: \$49 per year with proof of training status. Canada: \$19.00 additional each year plus 7% for Canadian Goods & Services tax; all other countries: \$38.00 additional each year. Overseas surface, \$84.00 each year overseas air mail. Single copies of current issues may be obtained for \$15.00, United States and possessions; \$20.00 all other countries.

**REPRINTS:** All requests to reprint or use material published herein should be addressed to Les Robeson, SLACK Incorporated, 6900 Grove Rd., Thorofare, NJ 08086. For reprint orders and prices, contact Les Robeson at (609) 848-1000. Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by SLACK Incorporated, provided that the base fee of \$1.00 per copy, plus \$.15 per page is paid directly to Copyright Clearance Center, 27 Congress St., Salem, MA 01970. This consent does not extend to other kinds of copying, such as for general distribution, resale, advertising and promotional purposes, or for creating new collective works.

**CHANGE OF ADDRESS:** Notice should be sent to the publisher six weeks in advance of effective date. Include old and new addresses with zip codes. The publisher cannot accept responsibility for undelivered copies. Second-class postage is paid at Thorofare, New Jersey 08086, and additional entry points. POSTMASTER: Send address changes to SLACK Incorporated, 6900 Grove Rd., Thorofare, NJ 08086.

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY is listed in Index Medicus, Current Contents-Clinical Practice, Hospital Literature Index, Cumulative Index to Nursing & Allied Health Literature, Nursing Abstracts, Laboratory Performance Information Exchange System, and RNDex Top 100.

## EDITORIAL OFFICES

Vanderbilt University School of Medicine  
A-1131 Medical Center North  
Nashville, TN 37232-2637  
(615) 343-1095; (615) 343-1882 (FAX)  
Email: iche@mcmail.vanderbilt.edu

## EDITOR

Michael D. Decker, MD, MPH

## MANAGING EDITOR

Susan Cantrell

## STATISTICAL EDITOR

Beverly G. Mellen, PhD

## SENIOR ASSOCIATE EDITORS

C. Glen Mayhall, MD

Gina Pugliese, RN, MS

William Schaffner, MD

## ASSOCIATE EDITORS

Donald A. Goldmann, MD

Didier Pittet, MD, MS

Andreas Widmer, MD, MS

## SECTION EDITORS

### Beyond Infection Control:

#### The New Hospital Epidemiology

Bryan P. Simmons, MD

Stephen B. Kritchevsky, PhD

Memphis, Tennessee

Wing Hong Seto, MD

Hong Kong

#### Disinfection and Sterilization

William A. Rutala, PhD, MPH

Chapel Hill, North Carolina

#### Emerging Infectious Diseases

Larry J. Strausbaugh, MD

Portland, Oregon

Robert W. Pinner, MD

Atlanta, Georgia

#### From the Laboratory

Marcus Zervos, MD

Royal Oak, Michigan

Fred C. Tenover, PhD

Atlanta, Georgia

#### Information Management

John A. Sellick, DO

Buffalo, New York

#### The International Perspective

Mary D. Nettleman, MD, MS

Richmond, Virginia

#### Issues in Surgery

James T. Lee, MD, PhD

St. Paul, Minnesota

#### Medical News

Gina Pugliese, RN, MS

Chicago, Illinois

Martin S. Favero, PhD

Irvine, California

#### Practical Healthcare Epidemiology

Loreen A. Herwaldt, MD

Iowa City, Iowa

#### SHEA News

Murray D. Batt, MD

Clarksburg, West Virginia

#### Statistics for Hospital Epidemiology

David Birnbaum, PhD, MPH

Sidney, British Columbia, Canada

#### Topics in Long-Term Care

Philip W. Smith, MD

Omaha, Nebraska

#### Topics in Occupational Medicine

David Weber, MD, MPH

Chapel Hill, North Carolina

# INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY<sup>®</sup>

## EDITORIAL ADVISORY BOARD

- Jacques F. Acar, MD Paris, France  
J. Wesley Alexander, MD Cincinnati, Ohio  
Paul Arnow, MD Chicago, Illinois  
Graham A.J. Ayliffe, MD Birmingham, United Kingdom  
Neil L. Barg, MD Yakima, Washington  
Elizabeth Ann Bolyard, RN, MPH, CIC Atlanta, Georgia  
John M. Boyce, MD Providence, Rhode Island  
Professor Dr. Ilja Braveny Munich, Federal Republic of Germany  
Charles Bryan, MD Columbia, South Carolina  
Christian Brun-Buisson, MD Creteil, France  
Donald E. Craven, MD Boston, Massachusetts  
Sue Crow, MSN, RN, CIC Shreveport, Louisiana  
Franz Daschner, MD Freiburg, Federal Republic of Germany  
Leigh G. Donowitz, MD Charlottesville, Virginia  
Charles E. Edmiston, Jr., PhD Milwaukee, Wisconsin  
Theodore C. Eickhoff, MD Denver, Colorado  
Bruce Farber, MD Manhasset, New York  
Victoria J. Fraser, MD St. Louis, Missouri  
Peter C. Fuchs, MD, PhD Black Butte, Oregon  
Richard A. Garibaldi, MD Farmington, Connecticut  
Velvl Greene, PhD, MPH Beer Sheva, Israel  
Robert Gaynes, MD Atlanta, Georgia  
David W. Gregory, MD Nashville, Tennessee  
David K. Henderson, MD Bethesda, Maryland  
Peter N.R. Heseltine, MD Los Angeles, California  
Karen Hoffmann, RN, CIC, MS Chapel Hill, North Carolina  
Marguerite McMillan Jackson, RN, PhD San Diego, California  
Janine Jagger, MPH, PhD Charlottesville, Virginia  
William R. Jarvis, MD Atlanta, Georgia  
Douglas S. Kernodle, MD Nashville, Tennessee  
Robert H. Latham, MD Nashville, Tennessee  
Lewis B. Lefkowitz, MD Nashville, Tennessee  
Hsieh-Shong Leu, MD, MSc Taipei, Taiwan  
Jack Levy, MD Brussels, Belgium  
Victor Lorian, MD Bronx, New York  
Dennis G. Maki, MD Madison, Wisconsin  
Professor Dr. Walter Marget Munich, Federal Republic of Germany  
William J. Martone, MD Bethesda, Maryland  
Allison McGeer, MD Toronto, Ontario, Canada  
John E. McGowan, Jr., MD Atlanta, Georgia  
Jonathan L. Meakins, MD, DSc Montreal, Quebec, Canada  
Raf Mertens, MD Brussels, Belgium  
Robert R. Muder, MD Pittsburgh, Pennsylvania  
Joseph M. Mylotte, MD, CIC Buffalo, New York  
Lindsay Nicolle, MD Winnipeg, Manitoba, Canada  
Juhani Ojajarvi, MD Helsinki, Finland  
Michael T. Osterholm, PhD, MPH Minneapolis, Minnesota  
Jan Evans Patterson, MD San Antonio, Texas  
Sindy M. Paul, MD Trenton, New Jersey  
Michael A. Pfaller, MD Iowa City, Iowa  
Samuel Ponce de Leon, MD, MSc Mexico City, Mexico  
Isaam Raad, MD Houston, Texas  
Manfred L. Rotter, MD, DipBact Vienna, Austria  
Theodore Sacks, MD Jerusalem, Israel  
William E. Scheckler, MD Madison, Wisconsin  
Kent Sepkowitz, MD New York City, New York  
Denis Spelman, MD Prahran Victoria, Australia  
Michael L. Tapper, MD New York, New York  
Clyde Thornsberry, PhD Brentwood, Tennessee  
Professor Leonid P. Titov Minsk, Republic of Belarus  
Timothy R. Townsend, MD Millwood, Virginia  
Antoni Trilla, MD, PhD Barcelona, Spain  
Professor Wang Shu-Qun Beijing, People's Republic of China  
J. John Weems, Jr., MD Greenville, South Carolina  
Robert A. Weinstein, MD Chicago, Illinois  
Professor Dr. W. Weuffen Greifswald, Federal Republic of Germany  
Sergio B. Wey, MD São Paulo, Brazil  
Rebecca Wurtz, MD Evanston, Illinois

## SLACK Incorporated

6900 Grove Road  
Thorofare, New Jersey 08086  
(609) 848-1000

### Vice President/Group Publisher

Richard N. Roash

### Publisher

John C. Carter

### Editorial Director

Jennifer Kilpatrick

### Production Editor

Shirley P. Strunk, ELS

### Assistant Editor

Eileen C. Anderer

### Circulation Manager

Lester J. Robeson, CCCC

### Production Director

Christine Malin

### Production Coordinator

Joanne Patterson

### Publishing Director/ Advertising

Wayne McCourt

### Pharmaceutical Group Sales Director

Michael LoPresti

### Advertising Sales Representative

Jennine Kane

### Classified/Recruitment Sales Manager

Michele Burch