# INFECTION CONTROL & HOSPITAL EPIDEMIOLOGY

30th ANNIVERSARY YEAR

VOLUME 31. NUMBER 2

FEBRUARY 2010

# SHEA GUIDELINE

Guideline for Disinfection and Sterilization of Prion-Contaminated Medical Instruments • William A. Rutala, PhD, MPH; David J. Weber, MD, MPH

# SHEA POSITION PAPER

- Enhancing Patient Safety by Reducing Healthcare-Associated Infections: The Role of Discovery and Dissemination Research Committee of the Society of Healthcare Epidemiology of America
- 124 Commentary: Policy Implications of the Society for Healthcare Epidemiology of America's Research Plan for Reducing Healthcare-Associated Infections Kurt B. Stevenson, MD, MPH; Steven Gordon, MD, for Public Policy and Government Affairs Committee of the Society for Healthcare Epidemiology of America (SHEA)

# SURVEY OF SHEA MEMBERSHIP

**Expanding Roles of Healthcare Epidemiology and Infection Control in Spite of Limited Resources and Compensation** • Sharon B. Wright, MD, MPH; Belinda Ostrowsky, MD, MPH; Neil Fishman, MD;
Valerie M. Deloney, MBA; Leonard Mermel, DO, ScM; Trish M. Perl, MD, MSc

# ORIGINAL ARTICLES

- Successful Implementation of the World Health Organization Hand Hygiene Improvement Strategy in a Referral Hospital in Mali, Africa Benedetta Allegranzi, MD; Hugo Sax, MD; Loséni Bengaly, PharmD; Hervé Richet, MD; Daouda K. Minta, MD; Marie-Noelle Chraiti, RN; Fatoumata Maiga Sokona, DEA; Angèle Gayet-Ageron, MD; Pascal Bonnabry, PhD; Didier Pittet, MD, MS; on behalf of the World Health Organization "Point G" Project Management Committee
- 142 Commentary: Doing Good and Doing It Well, Especially Where It Is Not Easy Paul A. Tambyah, MBBS
- Focus Group Study of Hand Hygiene Practice among Healthcare Workers in a Teaching Hospital in Toronto, Canada Ji-Hyun Jang, MHSc; Samantha Wu, BSc; Debra Kirzner, MPH; Christine Moore, ART; Gomana Youssef, MSc; Agnes Tong, MSc; Jenny Lourenco, MSc; Robyn B. Stewart, BA; Liz J. McCreight; Karen Green, MSc; Allison McGeer, MD
- Description of an Influenza Vaccination Campaign and Use of a Randomized Survey to Determine Participation Rates Xuguang (Grant) Tao, MD, PhD; Janine Giampino, RN, BSN, PCCN; Deborah A. Dooley, RN, BSN; Frances E. Humphrey, CRNP; David M. Baron, MBA, CISSP; Edward J. Bernacki, MD, MPH
- Barriers to Hepatitis B Vaccine Coverage among Healthcare Workers in the Republic of Georgia:

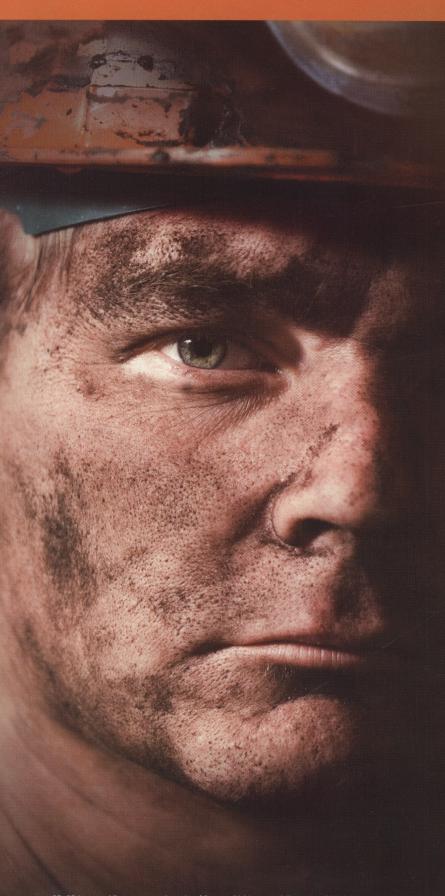
  An International Perspective M. Topuridze, MD, MS; M. Butsashvili, MD, MS; G. Kamkamidze, MD, PhD;

  M. Kajaia, MD, MS; D. Morse, MD, MS; L. A. McNutt, PhD

CONTENTS CONTINUED INSIDE



# Data mining is only the beginning.



BD Protect™ is the **first** infection surveillance and data management system to help fight infections on all levels:

- Patients
- Healthcare Workers
- Community

In the fight against healthcare-associated infections, protecting your patients, employees and community has you digging deep for time, energy and resources.

BD Protect Infection Prevention goes beyond data mining to provide a complete solution to help achieve your infection prevention goals.

Be in control of unfolding events with intelligent alerts and on-demand reports. Review real-time information from surgery, microbiology, rapid diagnostic tests, admissions, pharmacy. Organize your rounds and complete follow-up actions. Determine which data you want to analyze and when. Study outcomes and processes. Benchmark and report to NHSN.

Go beyond data mining. Turn real-time information into real-time results.

To learn more, visit us on the web at www.bd.com/ds/informatics, email us at BDProtect@bd.com, or call us at 800.426.8015.



BD Diagnostics 800.426.8015 www.bd.com/ds/informatics

# INFECTION CONTROL & HOSPITAL EPIDEMIOLOGY

VOLUME 31, NUMBER 2

FEBRUARY 2010

CONTENTS CONTINUED FROM COVER

- Evaluation of Ultraviolet C for Disinfection of Endocavitary Ultrasound Transducers Persistently
  Contaminated despite Probe Covers Guillaume Kac, MD; Isabelle Podglajen, PhD; Ali Si-Mohamed, MD;
  Aurelia Rodi; Christine Grataloup, MD; Guy Meyer, MD
- 171 Blood Culture Contamination Rates after Skin Antisepsis with Chlorhexidine Gluconate versus Povidonelodine in a Pediatric Emergency Department Lauren Marlowe, MD; Rakesh D. Mistry, MD, MS;
  Susan Coffin, MD, MPH; Kateri H. Leckerman, MS; Karin L. McGowan, PhD; Dingwei Dai, PhD; Louis M. Bell, MD;
  Theoklis Zaoutis, MD, MSCE
- 177 Clinical and Economic Impact of Methicillin-Resistant Staphylococcus aureus Colonization or Infection on Neonates in Intensive Care Units Xiaoyan Song, PhD; Eli Perencevich, MD; Joseph Campos, PhD; Billie L. Short, MD; Nalini Singh, MD, MPH
- Hospital-Acquired Staphylococcus aureus Infections at Texas Children's Hospital, 2001–2007 Kristina G. Hultén, PhD; Sheldon L. Kaplan, MD; Linda B. Lamberth, BS; Katherine Slimp, BS; Wendy A. Hammerman, RN; Maria Carrillo-Marquez, MD; Jeffrey R. Starke, MD; James Versalovic, MD, PhD; Edward O. Mason, Jr, PhD

### RESEARCH BRIEFS

- 191 Influenza Vaccination Rates among Healthcare Workers in the Department of Veterans Affairs Community Living Centers Linda Tsan, MD; Robert Langberg, MA; Cynthia Gibert, MD; Chester Davis, MPH, ScD; Christa Hojlo, RN, PhD; John Pierce, MD; Yancy Phillips, MD; Robert Gaynes, MD; Ona Montgomery, RN; Linda Danko, RN; Gary Roselle, MD
- 192 Can Skin Marker Pens, Used Preoperatively to Prevent Wrong-Site Surgeries, Transfer Bacteria? Catherine Burton, MD; Robert Rennie, PhD; LeeAnn Turnbull, MLT; Donald Spady, MD; Sarah E. Forgie, MD
- A Cluster of Bloodstream Infections Caused by Streptococcus gallolyticus Subspecies pasteurianus That Involved 5 Preterm Neonates in a University Hospital during a 2-Month Period Nathalie Floret, MD, PhD; Pascale Bailly, MD; Michelle Thouverez, PhD; Catherine Blanchot; Dolores Alez-Martin; Alain Menget, MD, PhD; Gérard Thiriez, MD; Bruno Hoen, MD, PhD; Daniel Talon, PharmD, PhD; Xavier Bertrand, PharmD, PhD
- Increasing Resistance of *Acinetobacter* Species to Imipenem in United States Hospitals, 1999–2006 Marc S. Hoffmann, MD; Michael R. Eber, BSE; Ramanan Laxminarayan, PhD, MPH

# LETTERS TO THE EDITOR

- Watching Them Wash: Description of a Hand Hygiene Observation Program Michael P. Stevens, MD; John D. Hunter; Janis F. Ober, RN; Gonzalo Bearman, MD, MPH; Michael B. Edmond, MD, MPH, MPA
- 199 Infection Prevention Education: Are We Neglecting It? Andrew G. Sahud, MD; Nitin Bhanot, MD, MPH; Sunil Bhat, MD; Stacy Lane, DO; Rajinder Bajwa, MD

# ERRATUM

202 Maiefski et al (2009; 30:1096-1108) •

An Official Publication of the Society for Healthcare Epidemiology of America

### **EDITOR**

Suzanne F. Bradley, MD • Ann Arbor, MI

# DEPUTY EDITOR

Carol A. Kauffman, MD • Ann Arbor, MI

# SENIOR ASSOCIATE EDITORS

C. Glen Mayhall, MD • Galveston, TX Gina Pugliese, RN, MS • Chicago, IL William Schaffner, MD • Nashville, TN

# ASSOCIATE EDITORS

Ebbing Lautenbach, MD, MPH • Philadelphia, PA Preeti N. Malani, MD, MSJ • Ann Arbor, MI David Weber, MD, MPH • Chapel Hill, NC

# STATISTICS CONSULTANT

Rodney L. Dunn, MS • Ann Arbor, MI

# SECTION EDITOR FOR GUIDELINES, POSITION PAPERS, AND INVITED REVIEWS

Carol Chenoweth, MD • Ann Arbor, MI

# MANAGING EDITOR

Rob Blixt • Chicago, IL

## PAST EDITORS

### Infection Control

Richard P. Wenzel, MD, 1980–1990 (vols. 1–11) Infection Control and Hospital Epidemiology Richard P. Wenzel, MD, 1991–1992 (vols. 12 and 13) Michael D. Decker, MD, 1993–2001 (vols. 14–22) Barry M. Farr, MD, 2002–2004 (vols. 23–25) William R. Jarvis, MD, 2005–2006 (vols. 26 and 27)

# EDITORIAL ADVISORY BOARD

Miriam Alter, PhD, MD • Atlanta, GA Anucha Apisarnthanarak, MD • Pratumthani, Thailand Lennox Archibald, MD, FRCP • Alachua, FL Hilary Babcock, MD • St. Louis, MO Elise M. Beltrami, MD, MPH • Decatur, GA David Birnbaum, PhD, MPH • Sidney, BC Christian Brun-Buisson, MD • Creteil, France John P. Burke, MD • Salt Lake City, UT David P. Calfee, MD, MS • New York, NY Yehuda Carmeli, MD, MPH • Tel Aviv, Israel Sara E. Cosgrove, MD, MS • Baltimore, MD Donald E. Craven, MD • Burlington, MA Burke A. Cunha, MD • Mineola, NY Erika D'Agata, MD, MPH • Boston, MA Patch Dellinger, MD • Seattle, WA Daniel Diekema, MD • Iowa City, IA Charles E. Edmiston, Jr., PhD • Milwaukee, WI Theodore C. Eickhoff, MD • Denver, CO Martin S. Favero, PhD • Irvine, CA Jon P. Furuno, PhD • Baltimore, MD Richard A. Garibaldi, MD • Farmington, CT Petra Gastmeier, MD • Hanover, Germany Dale N. Gerding, MD • Hines, IL Donald A. Goldmann, MD • Boston, MA Donna Haiduven, RN, PhD, CIC • Tampa, FL Anthony D. Harris, MD, MPH • Baltimore, MD David K. Henderson, MD • Bethesda, MD Loreen A. Herwaldt, MD • Iowa City, IA Peter N. R. Heseltine, MD • San Juan, CA Karen Hoffmann, RN, CIC, MS • Chapel Hill, NC Janine Jagger, MPH, PhD • Charlottesville, VA John A. Jernigan, MD, MS • Atlanta, GA James T. Lee, MD, PhD • St. Paul, MN

L. Clifford McDonald, MD • Atlanta, GA

Allison McGeer, MD • Toronto, ON Leonard A. Mermel, DO, ScM • Providence, RI Robert R. Muder, MD • Pittsburgh, PA Carlene A. Muto, MD, MS • Pittsburgh, PA Joseph M. Mylotte, MD, CIC • Buffalo, NY David L. Paterson, MBBS, FRACP • Pittsburgh, PA Jan Evans Patterson, MD • San Antonio, TX Sindy M. Paul, MD • Yardley, PA David A. Pegues, MD • Los Angeles, CA Eli Perencevich, MD, MS • Baltimore, MD Michael A. Pfaller, MD • Iowa City, IA Didier Pittet, MD, MS • Geneva, Switzerland Gina Pugliese, RN, MS • Chicago, IL Isaam Raad, MD • Houston, TX Jordi Rello, MD, PhD • Tarragona, Spain Manfred L. Rotter, MD, DipBact • Vienna, Austria Henning Rüden, MD • Berlin, Germany William A. Rutala, PhD, MPH • Chapel Hill, NC Lisa Saiman, MD, MPH • New York, NY Sanjay Saint, MD, MPH • Ann Arbor, MI William E. Scheckler, MD • Madison, WI Lynne M. Sehulster, PhD • Atlanta, GA John A. Sellick, DO • Amherst, NY Kent Sepkowitz, MD • New York, NY Samir Shah, MD, MSCE • Philadelphia, PA Andrew E. Simor, MD • Toronto, ON Philip W. Smith, MD • Omaha, NE Denis W. Spelman, MD • Prahan, Victoria, Australia Jeffrey R. Starke, MD • Houston, TX Janet E. Stout, PhD • Pittsburgh, PA Clyde Thornsberry, PhD • Franklin, TN William Trick, MD • Chicago, IL Antoni Trilla, MD, PhD · Barcelona, Spain Robert A. Weinstein, MD • Chicago, IL Andreas Widmer, MD, MS . Basel, Switzerland Marcus Zervos, MD • Royal Oak, MI

Infection Control and Hospital Epidemiology (ISSN 0899-823X) is published monthly by the University of Chicago Press, 1427 E. 60th St., Chicago, IL 60637-2954 (http://www.journals.uchicago.edu/ICHE/). The editorial office is in Chicago, Illinois.

# **Editorial Office**

Communications should be addressed to the Editor, Infection Control and Hospital Epidemiology, 1427 E. 60th St., Chicago, IL 60637-2954; (e-mail: iche@press.uchicago.edu; telephone: 773-773-2298, fax: 773-753-4247). Contributors should consult the Information for Authors, which is available at the journal's Web site.

# Advertising

Please direct advertising inquiries to Journals Advertising, University of Chicago Press, 1427 E. 60th St., Chicago, IL 60637 (e-mail: cbarhany@press.uchicago.edu; telephone: 773-702-8187; fax: 773-702-0172). Publication of an advertisement in *Infection Control and Hospital Epidemiology* does not imply endorsement of its claims by the Society for Healthcare Epidemiology of America, by the Editor, or by the University of Chicago. Correspondence regarding advertising should be addressed to the advertising office in Chicago.

# Permissions

Articles may be copied or otherwise reused without permission only to the extent permitted by Sections 107 and 108 of the US Copyright Law. Permission to copy articles for personal, internal, classroom, or library use may be obtained from the Copyright Clearance Center (http://www.copyright.com). For all other uses, such as copying for general distribution,

for advertising or promotional purposes, for creating new collective works, or for resale, please contact the Permissions Coordinator, Journals Division, University of Chicago Press, 1427 E. 60th St., Chicago, IL 60637 (e-mail: journalpermissions@press.uchicago.edu; fax: 773-834-3489). Articles in the public domain may be used without permission, but it is customary to contact the author.

# Subscriptions

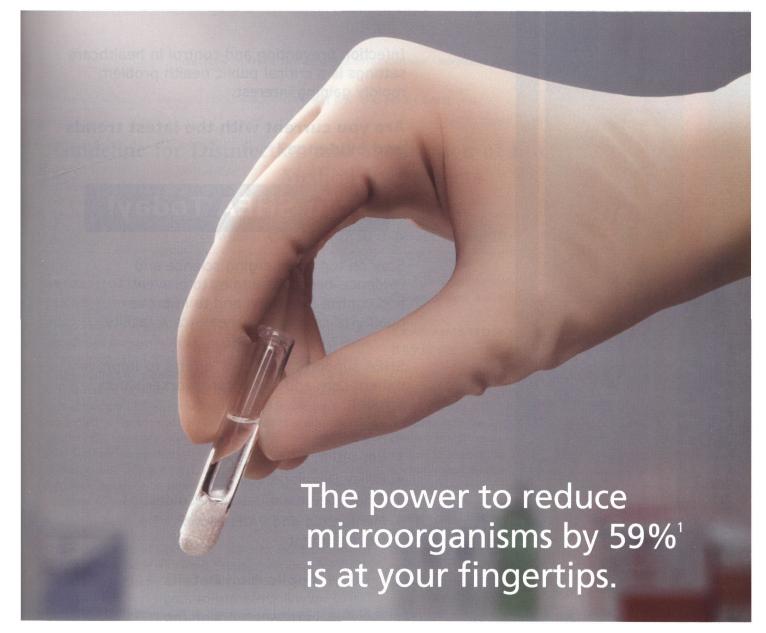
Subscription rates for 2010 are \$180 for individuals and \$413 for institutions. Single-copy rates are \$18 for individuals and \$41 for institutions. Additional rates for non-US subscribers and reduced rates for fellows, residents, and students are available at http://www.journals.uchicago.edu/ICHE. Individuals have the option to order directly from the University of Chicago Press. Subscription agent for Japan: Kinokuniya Company, Ltd.

Please direct subscription inquries, requests for back issues, and address changes to Journals Division, University of Chicago Press, P.O. Box 37005, Chicago, IL 60637 (e-mail: subscriptions@press.uchicago.edu; telephone: 773-753-3347 or toll-free in the United States and Canada 877-705-1878; fax: 773-753-0811 or toll-free 877-705-1879).

Postmaster: Send address changes to Infection Control and Hospital Epidemiology, University of Chicago Press, P.O. Box 37005, Chicago, IL 60637-2954.

Periodicals postage paid at Chicago, Illinois, and at an additional mailing office.

Published by the University of Chicago Press, Chicago, Illinois. © 2010 by the Society for Healthcare Epidemiology of America. All rights reserved. This publication is printed on acid-free paper.





# ChloraPrep® was proven more effective for peripheral IVs.1

A recent study compared the ChloraPrep® Sepp® (2% chlorhexidine gluconate/70% isopropyl alcohol) to 70% isopropyl alcohol (IPA) wipes prior to peripheral venous cannulation (PVC):

- The study shows that using ChloraPrep prior to peripheral IV insertion may help reduce the risk of subsequent PVC contamination or colonization, compared with using 70% IPA alone.
- Microorganisms were present on 49.4% of PVC tips in the 70% IPA group compared with only 19.8% in the 2% CHG in IPA (ChloraPrep) group.
- 2% CHG has been proven in more than 35 outcome studies and 11 evidence-based guidelines.

ChloraPrep® The proven way to prep™

**REFERENCES 1.** Small H, Adams D, Casey AL, Crosby CT, Lambert PA, Ellott T. Efficacy of adding 2% (w/v) chlorhexidine gluconate to 70% (v/v) isopropyl alcohol for skin disinfection prior to peripheral venous cannulation. *Infect Control Hosp Epidemiol.* 2008;29(10):963-965.

Discover the proven performance of ChloraPrep. Visit chloraprep.com or call 800-523-0502.





© 2010 CareFusion Corporation or one of its subsidiaries. All rights reserved. ChloraPrep is a registered trademark of CareFusion Corporation or one of its subsidiaries. ADV-Sepp0110

# **FOR HEALTHCAR**

Infection prevention and control in healthcare settings is a critical public health problem rapidly gaining interest.

Are you current with the latest trends and evidence?

# **Join SHEA Today!**

Stay on top of emerging science and evidence-based strategies to prevent and control infections and to improve quality-of-care in your healthcare facility.

SHEA supports members' efforts to improve patient care and healthcare worker safety through:

- Research
- Education & Training
- Policy Development
- Evidence-based Practical Guidelines
- Mentorship and Professional Development

# **Application Details**

www.shea-online.org info@shea-online.org (703) 684-1006

Annual membership offers:

- Subscription and online access to Infection Control and Hospital Epidemiology (ICHE), the official journal of SHEA
- Epidemiology News and e-newsletter
- Discounted registration on SHEA educational programming
- Online member network and job board

