

INFECTION CONTROL & HOSPITAL EPIDEMIOLOGY

VOLUME 35, NUMBER 3

MARCH 2014

ORIGINAL ARTICLES

- 213 Contact Precautions: More Is Not Necessarily Better** • Sorabh Dhar, MD; Dror Marchaim, MD; Ryan Tansak, MD; Teena Chopra, MD; Adnan Yousuf, MD; Ashish Bhargava, MD; Emily T. Martin, MPH, PhD; Thomas R. Talbot, MD, MPH; Laura E. Johnson, MD; Ameet Hingwe, MD; Jerry M. Zuckerman, MD; Bartholomew R. Bono, MD; Emily K. Shuman, MD; Jose Poblete, MD; MaryAnn Tran, MD; Grace Kulhanek, MD; Rama Thyagarajan, MD; Vijayalakshmi Nagappan, MD; Carrie Herzke, MD; Trish M. Perl, MD, MSc; Keith S. Kaye, MD, MPH
- 222 Commentary: On Contact Precautions: The Good, the Bad, and the Ugly** • Deverick J. Anderson, MD, MPH; David J. Weber, MD, MPH; Emily Sickbert-Bennett, PhD, MS
- 225 Rate of Healthcare Worker–Patient Interaction and Hand Hygiene Opportunities in an Acute Care Setting** • Laura Goodliffe, MPH; Kelsey Ragan, MPH; Michael Larocque, BSc; Emily Borgundvaag; Sophia Khan; Christine Moore, BSc; Liz McCreight, CIC; Brenda L. Coleman, PhD; Allison J. McGeer, MD; for the Mount Sinai Infection Control Team
- 231 Activity of Commonly Used Antimicrobial Prophylaxis Regimens against Pathogens Causing Coronary Artery Bypass Graft and Arthroplasty Surgical Site Infections in the United States, 2006–2009** • Sandra I. Berríos-Torres, MD; Sarah H. Yi, PhD; Dale W. Bratzler, DO, MPH; Allen Ma, PhD; Yi Mu, PhD; Liping Zhu, MD, MPH; John A. Jernigan, MD, MS
- 240 Commentary: Surgical Antimicrobial Prophylaxis: Is the Glass Half Empty or More than 99% Full?** • Deverick J. Anderson, MD, MPH; Daniel J. Sexton, MD
- 243 Daily Bathing with Chlorhexidine-Based Soap and the Prevention of *Staphylococcus aureus* Transmission and Infection** • Melissa A. Viray, MD; James C. Morley, PhD; Craig M. Coopersmith, MD; Marin H. Kollef, MD; Victoria J. Fraser, MD; David K. Warren, MD, MPH
- 251 Are Well-Child Visits a Risk Factor for Subsequent Influenza-Like Illness Visits?** • Jacob E. Simmering, MS; Linnea A. Polgreen, PhD; Joseph E. Cavanaugh, PhD; Philip M. Polgreen, MD, MPH
- 257 Commentary: More Support to Reduce the Burden of Respiratory Illnesses through Improved Infection Prevention and Control in Ambulatory Settings** • Lisa Saiman, MD, MPH
- 259 Survey of North Carolina Hospital Policies Regarding Visitor Use of Personal Protective Equipment for Entering the Rooms of Patients under Isolation Precautions** • JaHyun Kang, PhD, MPH; David J. Weber, MD, MPH; Barbara A. Mark, PhD; William A. Rutala, PhD, MPH
- 265 Prevalence and Characteristics of Antimicrobial Stewardship Programs at Freestanding Children's Hospitals in the United States** • Jason G. Newland, MD, MEd; Jeffrey S. Gerber, MD, PhD, MSCE; Scott J. Weissman, MD; Samir S. Shah, MD, MSCE; Chelsea Turgeon; Erin B. Hedican, MPH; Cary Thurm; Matt Hall, PhD; Joshua Courter, PharmD; Thomas V. Brogan, MD; Holly Maples, PharmD; Brian R. Lee, MPH, PhD; Adam L. Hersh, MD, PhD
- 272 Antimicrobial Stewardship Program to Reduce Antiretroviral Medication Errors in Hospitalized Patients with Human Immunodeficiency Virus Infection** • Jamie Sanders, PharmD; Andrea Pallotta, PharmD; Seth Bauer, PharmD; Jennifer Sekeres, PharmD; Ramona Davis, PharmD; Alan Taege, MD; Elizabeth Neuner, PharmD

CONTENTS CONTINUED INSIDE



THE OFFICIAL JOURNAL OF THE SOCIETY FOR HEALTHCARE EPIDEMIOLOGY OF AMERICA

SPRING 2014 CONFERENCE

Advancing Healthcare Epidemiology:
CRISIS & CONTROVERSIES

April 3-6

DENVER, COLORADO

shea2014.org

#SHEA2014

Featuring 3 Program Tracks

Basic Training in
Healthcare Epidemiology

Responding to Crisis
in Infection Prevention:
Outbreaks, Exposures &
Preparedness

From MRSA to CRE:
Controversies in MDROs

INFECTION CONTROL & HOSPITAL EPIDEMIOLOGY

VOLUME 35, NUMBER 3

MARCH 2014

CONTENTS CONTINUED FROM COVER

- 278 Ventilator-Associated Pneumonia: Overdiagnosis and Treatment Are Common in Medical and Surgical Intensive Care Units** • Veronique Nussenblatt, MD, MHS; Edina Avdic, PharmD, MBA; Sean Berenholtz, MD, MHS; Elizabeth Daugherty, MD, MPH; Eric Hadhazy, MS; Pamela A. Lipsett, MD, MHPE; Lisa L. Maragakis, MD, MPH; Trish M. Perl, MD, MSc; Kathleen Speck, MPH; Sandra M. Swoboda, RN, MS; Wendy Ziai, MD; Sara E. Cosgrove, MD, MS
- 285 Continued Emergence of USA300 Methicillin-Resistant *Staphylococcus aureus* in the United States: Results from a Nationwide Surveillance Study** • Daniel J. Diekema, MD; Sandra S. Richter, MD; Kristopher P. Heilmann, BS; Cassie L. Dohrn, BS; Fathollah Riahi, BS; Shailesh Tendolkar, BS; Jennifer S. McDanel, PhD; Gary V. Doern, PhD
- 293 Long-Term Effects of Hospital Water Network Disinfection on *Legionella* and Other Waterborne Bacteria in an Italian University Hospital** • Beatrice Casini, BSc, MS; Andrea Buzzigoli, BSc; Maria Luisa Cristina, BSc, PhD; Anna Maria Spagnolo, BSc, PhD; Pietro Del Giudice, MD; Silvio Brusaferrero, MD; Andrea Poscia, MD; Umberto Moscato, MD; Paola Valentini, BSc, MS; Angelo Baggiani, MD; Gaetano Privitera, MD
- 300 Outbreak of *Tsukamurella* Species Bloodstream Infection among Patients at an Oncology Clinic, West Virginia, 2011–2012** • Isaac See, MD; Duc B. Nguyen, MD; Somu Chatterjee, MD, MPH; Thein Shwe, MPH, MS, MBBS; Melissa Scott, RN; Sherif Ibrahim, MD, MPH; Heather Moulton-Meissner, PhD; Steven McNulty, BS; Judith Noble-Wang, PhD; Cindy Price, RN, BSN, CIC; Kim Schramm, MT(ASCP); Danae Bixler, MD, MPH; Alice Y. Guh, MD, MPH
- 307 Commentary: The Ethics of Empowering Patients as Partners in Healthcare-Associated Infection Prevention** • Daniel Sharp, BA; Tara Palmore, MD; Christine Grady, RN, PhD

CONCISE COMMUNICATIONS

- 310 Variability of Contact Precaution Policies in US Emergency Departments** • Daniel J. Pallin, MD, MPH; Carlos A. Camargo Jr, MD, DrPH; Deborah S. Yokoe, MD; Janice A. Espinola, MPH; Jeremiah D. Schuur, MD, MHS
- 313 The Effect of Leadership on Hand Hygiene: Assessing Hand Hygiene Adherence prior to Patient Contact in 2 Infectious Disease Units in Tuscany** • Sarah R. Lieber, MD; Elisabetta Mantengoli, MD, PhD; Sanjay Saint, MD, MPH; Karen E. Fowler, MPH; Carlo Fumagalli; Dario Bartolozzi, MD; Lea Magistri, RN; Fabrizio Niccolini, MD; Alessandro Bartoloni, MD, DTM
- 317 Risk Factors of Surgical Site Infection after Hepatic Resection** • Tian Yang, MD; Ping-An Tu, MD; Han Zhang, MD; Jun-Hua Lu, MD; Yi-Nan Shen, MD; Shou-Xin Yuan, MD; Wan Yee Lau, MD, FRCS, FACS, FRACS (Hon); Eric C. H. Lai, MBChB, MRCSEd, FRACS; Chong-De Lu, MD; Meng-Chao Wu, MD; Jie-Wei Li, MD, PhD; Feng Shen, MD, PhD

RESEARCH BRIEFS

- 321 July Effect: Impact of the Academic Year-End Changeover on the Incidence of Healthcare-Associated Infections** • Lauren M. DiBiase, MS; David J. Weber, MD, MPH; Emily E. Sickbert-Bennett, PhD; Clark Denniston, MD; William A. Rutala, PhD, MPH
- 323 Does Coating All Room Surfaces with an Ultraviolet C Light–Nanoreflective Coating Improve Decontamination Compared with Coating Only the Walls?** • William A. Rutala, PhD, MPH; David J. Weber, MD, MPH; Maria F. Gergen, MT(ASCP); Brian M. Tande, PhD; Emily E. Sickbert-Bennett, PhD, MS

CONTENTS CONTINUED ON NEXT PAGE

INFECTION CONTROL & HOSPITAL EPIDEMIOLOGY

VOLUME 35, NUMBER 3

MARCH 2014

CONTENTS CONTINUED FROM PREVIOUS PAGE

LETTERS TO THE EDITOR

- 326 Selecting an Antiretroviral Regimen for Human Immunodeficiency Virus Postexposure Prophylaxis in the Occupational Setting** • Darrell H. S. Tan, MD, PhD; Blessing Goddey-Erikefe, BSc; Deborah Yoong, PharmD; Mark Naccarato, BScPharm; Susan McIntyre, RN, COHN(C), CRSP; Roohi Qureshi, MD; Kevin Gough, MD
- 328 Reply to Tan et al** • David T. Kuhar, MD; Kimberly A. Struble, PharmD; David K. Henderson, MD
- 329 Factors Associated with Hand Hygiene Compliance among Critical Care Nurses** • Hsin-Lan Lin, RN; Li-Yu Yang, PhD; Chih-Cheng Lai, MD

ERRATUM

- 331 Landelle et al (2014;35(1):10–15)**

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

Carol Chenoweth, MD • Ann Arbor, MI
Ebbing Lautenbach, MD, MPH • Philadelphia, PA
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

Eli Perencevich, MD, MS • Iowa City, IA

MANAGING EDITOR

Rob Blix • 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 • Galveston, TX
Deverick Anderson, MD, MPH • Durham, NC
Anucha Apisarnthanarak, MD • Pratumthani, Thailand
Lennox Archibald, MD, FRCP • Alachua, FL
Hilary Babcock, MD • St. Louis, MO
Shailen Banerjee, PhD • Atlanta, GA
Elise M. Beltrami, MD, MPH • Atlanta, GA
Jo Anne Bennett, RN, PhD • New York, NY
David Birnbaum, PhD, MPH • Sidney, BC
Marc Bonten, MD • Utrecht, Netherlands
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
Donald E. Craven, MD • Burlington, MA
Christopher Crnich, MD, MS • Madison, WI
Erika D'Agata, MD, MPH • Boston, MA
Daniel Diekema, MD • Iowa City, IA
Erik Dubberke, MD, MSPH • St. Louis, MO
Charles E. Edmiston, Jr., PhD • Milwaukee, WI
Theodore C. Eickhoff, MD • Denver, CO
Mohamad Fakhri, MD, MPH • Grosse Pointe Woods, MI
Jon P. Furuno, PhD • Portland, OR
Petra Gastmeier, MD • Berlin, Germany
Jeffrey Gerber, MD, PhD • Philadelphia, PA
Dale N. Gerding, MD • Hines, IL
Donald A. Goldmann, MD • Boston, MA
Nicholas Graves, PhD • Brisbane, Australia
Donna Haiduvan, RN, PhD, CIC • Tampa, FL
Anthony D. Harris, MD, MPH • Baltimore, MD
Elizabeth Henderson, PhD • Calgary, AB
David K. Henderson, MD • Bethesda, MD
Loreen A. Herwaldt, MD • Iowa City, IA

Peter N. R. Heseltine, MD • Brea, CA
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
Linda Mundy, MD • Collegeville, PA
Joseph M. Mylotte, MD, CIC • Buffalo, NY
Jan Evans Patterson, MD • San Antonio, TX
David A. Pegues, MD • Los Angeles, CA
Didier Pittet, MD, MS • Geneva, Switzerland
Issam Raad, MD • Houston, TX
Manfred L. Rotter, MD, DipBact • Vienna, Austria
William A. Rutala, PhD, MPH • Chapel Hill, NC
Lisa Saiman, MD, MPH • New York, NY
Sanjay Saint, MD, MPH • Ann Arbor, MI
Sorana Segal-Maurer, MD • Flushing, NY
Lynne M. Sehulster, PhD • Atlanta, GA
John A. Sellick, DO • Amherst, NY
Kent Sepkowitz, MD • New York, NY
Andrew E. Simor, MD • Toronto, ON
Philip W. Smith, MD • Omaha, NE
Kurt Stevenson, MD, MPH • Columbus, OH
Nimalie Stone, MD • Atlanta, GA
Thomas Talbot, MD, MPH • Nashville, TN
Paul Tambyah, MBBS • Singapore
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 • Detroit, 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: 773-702-2538, 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 Paul Tucker, Breuning Nagle Associates, 59 Grove Street, New Canaan, CT 06840 (e-mail: paul@bna1.com; telephone: 847-669-1096, fax: 203-801-0011). 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

The individual subscription rate for 2014 is \$197. Lower 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. Institutional print + electronic and e-only subscriptions are available through JSTOR's Current Scholarship Program and include unlimited online access; rates are tiered according to an institution's type and research output: \$460 to \$1,150 (print + electronic), \$383 to \$958 (e-only). Institutional print-only is \$489. Additional taxes and/or postage for non-U.S. subscriptions may apply. Subscription agent for Japan: Kinokuniya Company, Ltd. Free or deeply discounted access is available in most developing nations through the Chicago Emerging Nations Initiative (<http://www.journals.uchicago.edu/ceni/>).

Please direct subscription inquiries, 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. © 2014 by The Society for Healthcare Epidemiology of America. All rights reserved. This publication is printed on acid-free paper.

Join SHEA

Access to the information you need to meet the infection prevention challenges ahead.

- One year subscription to *Infection Control & Hospital Epidemiology*
- Online access to *Infection Control & Hospital Epidemiology*
- Monthly newsletter with abstracts of scientific journal articles and current events
- Online job board
- Online member search
- Continuing Medical Education (CME) and Continuing Nursing Education (CNE) opportunities



About SHEA

The Society for Healthcare Epidemiology of America (SHEA) was founded in 1980 to advance the science of healthcare epidemiology and infection prevention. SHEA works to maintain the utmost quality of patient care and healthcare worker safety in all healthcare settings, applying epidemiologic principles and prevention strategies to a wide range of quality-of-care issues. SHEA is strengthened by its active membership in all branches of medicine, public health, and healthcare epidemiology. The Society's expertise is sought by healthcare regulatory and accrediting agencies, and its scientific voice is influential in guiding decision-making bodies towards rational, effective, cost-conscious policies.

Mission

SHEA's mission is to prevent and control healthcare-associated infections and advance the field of healthcare epidemiology.

Core Values

SHEA as an organization:

- Advances the science of healthcare epidemiology through research and education
- Translates knowledge into effective policy and practice
- Mentors, trains and promotes professional development in healthcare epidemiology
- Collaborates and shares expertise with other organizations
- Adheres to high ethical standards and promotes honesty and ethical principles in the practice of epidemiology

Areas of Focus

- Epidemiologic research and laboratory investigation
- Applying the best evidence for protecting patients and reporting data
- Risk reduction programs focused on device and procedure management
- Policy development and implementation
- Education and information

Please contact info@shea-online.org with membership inquiries.

Join SHEA at www.shea-online.org