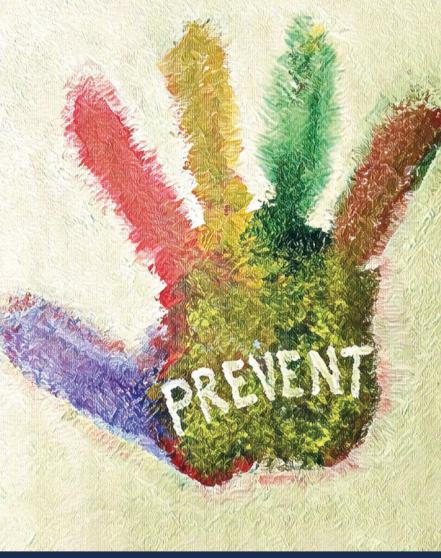
Infection Control Hospital Epidemiology

Volume 45, No 1 Jan 2024



Artist: Michael Calderwood









April 16–19, 2024 HOUSTON, TEXAS

SCIENCE GUIDING PREVENTION

SHEASpring.org | #SHEASpring2024

Infection Control & Hospital Epidemiology

Volume 45 2024 Number 1

CONTENTS

Joint Statement

Saving lives through infection prevention, healthcare epidemiology, and antimicrobial stewardship: Getting back to preventing healthcare-associated infections

Deborah S. Yokoe and Patricia Jackson

SHEA/IDSA/APIC Commentary

3 Healthcare-associated infections and conditions in the era of digital measurement David C. Classen, Chanu Rhee, Raymund B. Dantes and Andrea L. Benin

Commentaries

- 9 ChatGPT: Increasing accessibility for natural language processing in healthcare quality measurement Julie Tsu-Yu Wu, Erica S. Shenoy, Evan P. Carey, Gil Alterovitz, Michael J. Kim and Westyn Branch-Elliman
- Differences and similarities in outpatient antibiotic prescribing among advanced practice clinicians and physicians—Where do we go from here?

 Carissa M. Windish and Priya Nori

Original Articles

- 13 Examining barriers to implementing a surgical-site infection bundle Kimberly C. Dukes, Heather Schacht Reisinger, Marin Schweizer, Melissa A. Ward, Laura Chapin, Timothy C. Ryken, Trish M. Perl and Loreen A. Herwaldt
- 21 Reportable infections following colon surgery in a large public healthcare system in New York City: The consequences of being a level 1 trauma center

 Mary L. Fornek, Subhan Ata, Edwin Jimenez, Marie Abdallah, Subin Sunny, Jennifer Lee, Briana Episcopia, Valery Roudnitsky and John Quale
- 27 Comorbidities directly extracted from the hospital database for adjusting SSI risk in the new national semiautomated surveillance system in France: The SPICMI network

 Jérémy Picard, Béatrice Nkoumazok, Isabelle Arnaud, Delphine Verjat-trannoy and Pascal Astagneau
- 35 Disinfection of vascular catheter connectors that are protected by antiseptic caps is unnecessary Kelsey M. Fillman, Jonathan H. Ryder, Daniel M. Brailita, Mark E. Rupp, R. Jennifer Cavalieri, Paul D. Fey, Elizabeth R. Lyden and Richard J. Hankins
- 40 Characterizing infection prevention programs and urinary tract infection prevention practices in nursing homes: A mixed-methods study *Karen M. Jones, Sarah L. Krein, Julia Mantey, Molly Harrod and Lona Mody*
- 48 Treated, hospital-onset *Clostridiodes difficile* infection: An evaluation of predictors and feasibility of benchmarking comparing 2 risk-adjusted models among 265 hospitals

 Kalvin C. Yu, Gang Ye, Jonathan R. Edwards, Raymund Dantes, Vikas Gupta, ChinEn Ai, Kristina Betz and Andrea L. Benin

Cover image: In Our Hands, 2023

- 57 Characteristics and outcomes of Clostridioides difficile infection after a change in the diagnostic testing algorithm

 Andrew S. Crone, Lorinda M. Wright, Adam Cheknis, Stuart Johnson, Susan M. Pacheco and Andrew M. Skinner
- An outbreak investigation of parechovirus-A3 in a newborn nursery *Yuta Aizawa, Keisuke Saeki, Kazuetsu Mori, Tatsuki Ikuse, Ryohei Izumita and Akihiko Saitoh*
- 68 Coronavirus disease 2019 (COVID-19) universal admission screening in patients and companions in Taiwan from May 2021 to June 2022: A nationwide multicenter study *Hao-Hsin Wu, Chiu-Hsia Su, Li-Jung Chien, Shu-Hui Tseng and Shan-Chwen Chang*
- 75 Comparison of clinical outcomes over time of inpatients with healthcare-associated or community-acquired coronavirus disease 2019 (COVID-19): A multicenter, prospective cohort study Rebecca L. Grant, Julien Sauser, Andrew Atkinson, Stéphanie D'Incau, Niccolò Buetti, Marie-Céline Zanella, Stephan Harbarth, Jonas Marschall and Gaud Catho for the CH-SUR Collaborative Network
- Residential social vulnerability among healthcare personnel with and without severe acute respiratory coronavirus virus 2 (SARS-CoV-2) infection in Five US states, May—December 2020 Maria Zlotorzynska, Nora Chea, Taniece Eure, Rebecca Alkis Ramirez, Gregory T. Blazek, Christopher A. Czaja, Helen Johnston, Devra Barter, Melissa Kellogg, Catherine Emanuel, Ruth Lynfield, Ashley Fell, Sarah Lim, Sara Lovett, Erin C. Phipps, Sarah Shrum Davis, Marla Sievers, Ghinwa Dumyati, Cathleen Concannon, Christopher Myers, Kathryn McCullough, Amy Woods, Christine Hurley, Erin Licherdell, Rebecca Pierce, Valerie L.S. Ocampo, Eric Hall, Shelley S. Magill and Cheri T. Grigg
- 89 Prospective comprehensive evaluation of an elastic-band beard cover for filtering facepiece respirators in healthcare workers

 Daryl Lindsay Williams, Benjamin Kave, Charles Bodas, Fiona Begg, Megan Roberts and Irene Ng

Concise Communication

- 96 Application of OpenAI GPT-4 for the retrospective detection of catheter-associated urinary tract infections in a fictitious and curated patient data set Jasmin Perret and Adrian Schmid
- 100 Effect of an initial specimen diversion device on blood-culture contamination rates and vancomycin usage: A quasi-experimental study

 Eli P. Wilber, Ahmed Babiker, Jessica Howard-Anderson, Jill E. Holdsworth, Eileen M. Burd, M. Jeremy Eldridge and Jesse T. Jacob
- 103 A 7-year analysis of attributable costs of healthcare-associated infections in a network of community hospitals in the southeastern United States

 Helen L. Zhang, Linda Crane, Andrea Lynn Cromer, Amanda Green, Polly Padgette, Valerie C. Payne,

 Linda Roach, Brittain Wood and Deverick J. Anderson
- 106 Impact of mandatory nucleic acid amplification test (NAAT) testing approval on hospital-onset Clostridioides difficile infection (HO-CDI) rates: A diagnostic stewardship intervention Winston L. McCormick, Gail Jackson, Sarah B. Andrea, Valerie Whitehead, Tiffany L. Chargualaf and Francine Touzard-Romo
- 110 A review of extended coronavirus disease 2019 (COVID-19) isolation duration among inpatients in a tertiary-care hospital—Iowa, 2020–2022

 Oluchi J. Abosi, Alexandra Trannel, Patrick Schwartzhoff, Mark Ackman, Barbara Zilles, Alexandre R. Marra, Angelique Dains, Toshio Naito, Jorge L. Salinas, Daniel J. Diekema, Beth Hanna, Jaime P. Murphy, Melanie Wellington, Karen Brust and Takaaki Kobayashi

- 114 Evaluation of an antigen-test-based strategy to reduce duration of transmission-based precautions for severe acute respiratory coronavirus virus 2 (SARS-CoV-2) infection in hospitalized patients *Gregory M. Schrank, Michelle Harris-Williams, Kelly Schiavone, Martha C. Lusby, Cindy Dove and Surbhi Leekha*
- 117 Comparison of antibiotic prescribing between physicians and advanced practice clinicians Adam L. Hersh, Daniel J. Shapiro, Guillermo V. Sanchez and Lauri A. Hicks
- 120 Indication-driven order entry decreases stewardship and pharmacist interventions *Jacey L. Nishiguchi, Laura L. Bio, Sean T. Cornell and Hayden T. Schwenk*
- 123 In-depth assessment of critical access hospital stewardship program adherence to the CDC Core Elements in Iowa and Nebraska Jonathan H. Ryder, Jenna Preusker, Andrew B. Watkins, Jeremy Tigh, Danny Schroeder, Muhammad Salman Ashraf and Trevor C. Van Schooneveld
- 127 Efficacy of 23 commonly used liquid disinfectants against *Candida auris* isolates from the 4 major clades *Muhammed F. Haq, Basya S. Pearlmutter, Jennifer L. Cadnum and Curtis J. Donskey*
- Efficacy of a far-ultraviolet-C light technology for continuous decontamination of air and surfaces Samir Memic, Andrew O. Osborne, Jennifer L. Cadnum and Curtis J. Donskey

INFECTION CONTROL & HOSPITAL EPIDEMIOLOGY

An Official Publication of the Society for Healthcare Epidemiology of America

EDITOR-IN-CHIEF

David P. Calfee, MD, MS • New York, NY, USA

DEPUTY EDITOR

David Weber, MD, MPH • Chapel Hill, NC, USA

ASSOCIATE EDITORS

Westyn Branch-Elliman, MD, MMSc • Boston, MA, USA Tara N. Palmore, M.D., Washington, D.C. Joshua K. Schaffzin, MD, PhD • Ottawa, ON, Canada Trevor C. Van Schooneveld, MD • Omaha, NE, USA

STATISTICS CONSULTANTS

Jon P. Furuno, PhD • Portland, OR, USA Jessina C. McGregor, PhD • Portland, OR, USA

MANAGING EDITOR

iche.managingeditor@shea-online.org Lindsay MacMurray • Brooklyn, NY, USA

SOCIAL MEDIA EDITOR

Alexander J. Sundermann, DrPH, CIC, FAPIC, Pittsburgh, PA, USA

PAST EDITORS, INFECTION CONTROL

Richard P. Wenzel, MD, Infection Control 1980-1987 (vols. 1-8)

PAST EDITORS, INFECTION CONTROL & HOSPITAL EPIDEMIOLOGY

Richard P. Wenzel, MD, 1988-1992 (vols. 9-13) Michael D. Decker, MD, 1993-2001 (vols. 14-22) Barry M. Farr, MD, 2000-2004 (vols. 23-25) William R. Jarvis, MD, 2005-2006 (vols. 26 and 27) Suzanne F. Bradley, MD, 2007-2021 (vols. 28-42)

EDITORIAL ADVISORY BOARD

Deverick Anderson, MD, MPH • Durham, NC, USA

Anucha Apisarnthanarak, MD • Pratumthani, Thailand Lennox Archibald, MD, FRCP • Alachua, FL, USA Jo Anne Bennett, RN, PhD • New York, NY, USA David Birnbaum, PhD, MPH • Sidney, BC, Canada Yehuda Carmeli, MD, MPH • Tel Aviv, Israel Vincent C.C. Cheng, MBBS, MD. • Hong Kong, China Carol Chenowith, MD • Ann Arbor, MI, USA Christopher Crnich, MD, MS • Madison, WI, USA Erika D' Agata, MD, MPH • Providence, RI, USA Daniel Diekema, MD • Portland, ME, USA Elizabeth Dodds Ashley, PharmD • Durham City, NC, USA Curtis J. Donskey, MD • Cleveland, OH, USA Charles E. Edmiston, Jr., PhD • Milwaukee, WI, USA Katherine Ellingson, PhD • Tucson, AZ, USA Charlesnika T. Evans, PhD • Chicago, IL, USA Mohamad Fakih, MD, MPH • Grosse Pointe Woods, MI, USA

Jeffery Gerber, MD, PhD • Philadelphia, PA, USA
Dale N. Gerding, MD • Hines, IL, USA
Donald A. Goldmann, MD • Boston, MA, USA
Nicholas Graves, PhD • Singapore, Singapore
Donna Haiduven, PhD, RN, CIC, CPH, FAPIC • Tampa,
FL, USA

Anthony D. Harris, MD, MPH • Baltimore, MD, USA David K. Henderson, MD • Bethesda, MD, USA Elizabeth Henderson, PhD • Calgary, AB, Canada Loreen A. Herwaldt, MD • Iowa City, IA, USA John A. Jernigan, MD, MS • Atlanta, GA, USA Robin L.P. Jump, MD, PhD • Cleveland, OH, USA Mini Kamboj, MD • New York, NY, USA Carol A. Kauffman, MD • Ann Arbor, MI, USA Michael Klompas, MD • MPH, Boston, MA, USA Sarah Krein, RN, PhD • Ann Arbor, MI, USA Karl Madaras-Kelly, PharmD • MPH, Boise, ID, USA

Eric T. Lofgren, MS, PhD • Pullman, WA, USA Jasmine R. Marcelin, MD • Omaha, NE, USA Allison McGeer, MD • Toronto, ON, Canada Leonard A. Mermel, DO, ScM • Providence, RI, USA Linda Mundy, MD • Collegeville, PA, USA Ann-Christine Nyquist, MD, MSPH • Aurora, CO, USA Pierre Parneix, MD • Bordeaux, France Ian Evans Patterson, MD • San Antonio, TX, USA David A. Pegues, MD • Philadelphia, PA, USA Didier Pittet, MD, MS • Geneva, Switzerland Anusha Rohit, MD, PhD • Dip RCPath, Chennai, India William A. Rutala, PhD, MPH • Chapel Hill, NC, USA Lisa Saiman, MD, MPH • New York, NY, USA Sanjay Saint, MD, MPH • Ann Arbor, MI, USA Marin Schweizer, PhD • Madison, WI, USA Lynne M. Sehulster, PhD • Atlanta, GA, USA John A. Sellick, DO • Amherst, NY, USA Erica S. Shenoy, MD, PhD • Boston, MA, USA Anna C. Sick-Samuels, MD, MPH • Baltimore, MD, USA Rachel B. Slayton, PhD, MPH • Atlanta, GA, USA Xiaoyan Song, PhD, MBBS, CIC • Washington, DC, USA Arjun Srinivasan, MD • Atlanta, GA, USA Kurt Stevenson, MD • MPH, Boise, ID, USA. Nimalie Stone, MD • Atlanta, GA, USA Thomas Talbot, MD MPH, • Nashville, TN, USA Paul Tambyah, MBBS • Singapore William Trick, MD • Chicago, IL, USA Antoni Trilla, MD, PhD • Barcelona, Spain Kavita Trivedi, MD • Alameda Country Public Health Department, San Leandro, CA, USA Robert A. Weinstein, MD . Chicago, IL, USA

Infection Control & Hospital Epidemiology (ISSN 0899-823X) is published monthly by Cambridge University Press, One Liberty Plaza, New York, NY 10006, USA.

Editorial Office

Communications should be addressed to the Editor, *Infection Control & Hospital Epidemiology*, One Liberty Plaza, New York, NY 10006 (email: iche.managingeditor@cambridge.org. Contributors should consult the Instructions for Contributors, which is available at the journal's Web site.

Advertising

Please direct advertising inquiries to M. J. Mrvica Associates, 2 West Taunton Avenue, Berlin, NJ 08009 (e-mail: mjmrvica@mrvica.com; telephone: 856-768-9360, fax: 856-753-0064). Publication of an advertisement in *Infection Control & Hospital Epidemiology* does not imply endorsement of its claims by the Society for Healthcare Epidemiology of America, by the Editor, or by Cambridge University Press.

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, email: info@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 Cambridge University Press. Full details may be found at: www.cambridge.org/about-us/rights-permissions.

Marcus Zervos, MD • Detroit, MI, USA

Subscriptions

The individual subscription prices for 2024 are: Print & Online: \$353; Online Only: \$284. Individuals have the option to order directly from Cambridge University Press. Institutional print + electronic and e-only subscriptions are available from Cambridge University Press and include unlimited online access; rates are tiered according to an institution's type and research output and may be reviewed at the journal's homepage on Cambridge Core: cambridge.org/ICHE.

Please direct subscription inquiries and requests for back issues to Customer Services at Cambridge University Press, e-mail: subscriptions_newyork@cambridge.org (USA, Canada, and Mexico) or journals@cambridge.org (outside of USA, Canada, and Mexico).

Postmaster: Send address changes to Infection Control & Hospital Epidemiology, Cambridge University Press, One Liberty Plaza, New York, NY 10006 USA.

About the cover:



Title: In Our Hands, 2023

Beginning with volume 43 (January 2022), the cover of *Infection Control & Hospital Epidemiology* (ICHE) will feature art inspired by or reflective of topics within the scope of the journal and their impact on patients, healthcare personnel and our society. These topics include healthcare-associated infections, antimicrobial resistance, and healthcare epidemiology. The intent is to feature original artwork that has been created by individuals who have a personal connection to one or more of these topics through their clinical work, research, or experience as a patient or an affected patient's family member, friend or advocate. The goal is to provide readers with a visual reminder of the human impact of the topics addressed in the journal and the importance of the work being done by those who read or contribute to ICHE and by all who are trying to make healthcare safer through the elimination of healthcare-associated infections.

For more information about the ICHE cover and how to submit artwork for consideration for a future cover, please visit the ICHE website: https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/front-covers

Artist: Michael Calderwood, MD, MPH **Medium:** Acrylic paints on canvas

Dr. Calderwood spoke to ICHE about his artwork.

What was the inspiration for this artwork? Over the years, there have been many campaigns to improve hand hygiene in health care facilities (e.g., "Clean Hands Save Lives," "My Health is in Your Hands," "Speak up for Clean Hands"). During the past few years, though, the concept of the hand has taken on other meanings, as those in the healthcare community have lent a hand across a myriad of settings, have held the hand of patients, family, friends, and fellow healthcare workers who were suffering, and have stood hand-in-hand in facing the unknown, overcoming obstacles, and navigating the path forward. A hand held in an upward position, as shown in the painting, is also a means of saying "stop" or more specifically "prevent" as written on the palm. Whether it be in areas of HAI prevention, antimicrobial stewardship, outbreak investigation, diagnostic stewardship, or one of the many other topics covered within the pages of ICHE, the idea of prevention is one where safe and effective patient care is front and center in everything that we do. We are strongest when we work together toward a better future, recognizing that we each have something to teach, and we each have something to learn. As for the colors chosen in my art, many of our infection prevention strategies are targeted at infections involving blood, urine, wounds, stool, and water. You will see these each depicted, melding into a singular patina reminding us once again to wash our hands, as clean hands really do save lives.

What is your personnel connection to the content of ICHE? I am an active member of the Society for Healthcare Epidemiology of America (SHEA), having served on multiple committees, including the Publications Committee. I am both an author and a reviewer for ICHE. Recently, I was lead author on the 2022 update of the surgical site infection prevention section of the Compendium of Strategies to Prevent Healthcare-Associated Infections in Acute Care Hospitals. I have served in leadership roles in hospital epidemiology and antimicrobial stewardship, and I currently oversee both disciplines in my role as Chief Quality Officer at Dartmouth Hitchcock Medical Center.

Dr. Calderwood is the Chief Quality Officer for Dartmouth Hitchcock Medical Center in Lebanon, New Hampshire, USA. He is an Associate Professor of Medicine at the Geisel School of Medicine at Dartmouth and a staff physician in Infectious Disease & International Health.

Cover image: In Our Hands, 2023