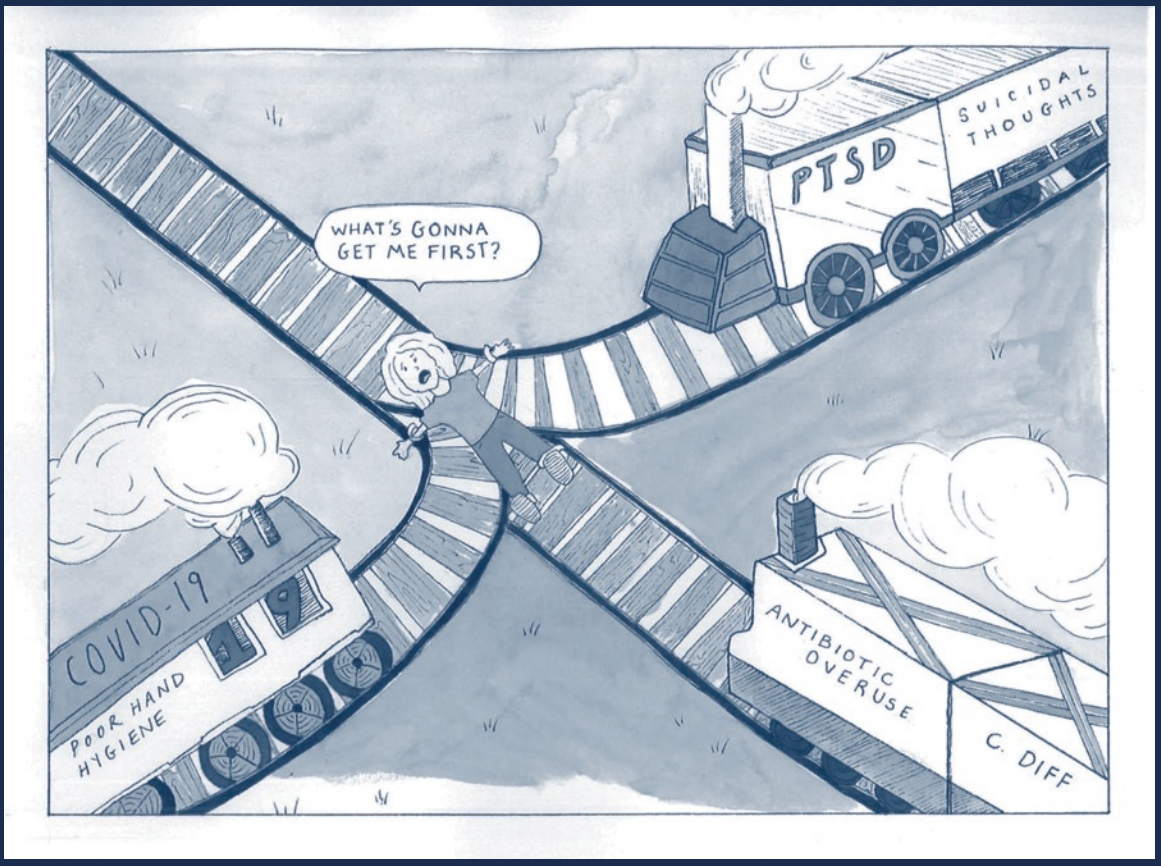
Volume 47, No 6
June 2026

Infection Control & Hospital Epidemiology

ICHE



SHEA
The Society for Healthcare Epidemiology of America

CAMBRIDGE UNIVERSITY PRESS

https://doi.org/10.1017/ice.2025.10278 Published online by Cambridge University Press

Infection Control & Hospital Epidemiology

Volume 47 2026 Number 6

CONTENTS

Original Articles

539 Development and implementation of a quality improvement framework for the prevention hospital-onset bacteremia and fungemia
Gregory Schrank, Surbhi Leekha, Mya Brady, Amber Thomas, Ayda Soltanian Tiranchi, Gwen Robinson, Elise Martin and Graham Snyder

547 Impact of positive donor blood cultures on solid organ transplant recipient outcomes
Edith Ford, Cassandra Votruba, Christopher Saling, Holenarasipur Vikram and Dan Ilges

553 Racial disparities in healthcare-associated infections: a systematic review and meta-analysis
Reinaldo Perez, Sonali D. Advani, Rebecca North, Alison G.C. Smith, Ibukunoluwa C. Kalu, Steph Hendren, Sarah Peskoe, Carl Pieper, Helen Zhang, Melissa Campbell, Sophie Nick, Michael Yarrington, Erin Gettler, Jay Krishnan, Nwora Lance Okeke, Janine Young and Deverick J. Anderson

568 Hidden failure modes of large language models in healthcare-associated infection surveillance: a structured evaluation using NHSN definitions
Mamdooh Alzyood, Alfred Veldhuis, Hayley Stevenson and Samina Sheikh

574 Generative artificial intelligence for surgical site infection surveillance
Shatha Alshanqeeti, Aileen de Guzman, Mary K. Riley, K.C. Coffey, Kathrine E. Goodman, Anthony D. Harris, Jonathan Baghdadi, Lisa Pineles, Westyn Branch-Elliman and Daniel J. Morgan

578 Healthcare-associated infections in Italian long-term care facilities: a machine learning analysis of a 12-month cohort
Anna Caterina Leucci, Elena Sasdelli, Luana Caselli, Elisa Fabbri, Elena Berti, Costanza Vicentini, Carla Maria Zotti, Katrien Latour and Enrico Ricchizzi

586 Active surveillance cultures and cohorting for carbapenem-resistant *Acinetobacter baumannii* in an endemic setting: an interrupted timeseries analysis
Regev Cohen, Shelly Lipman-Arens, Orna Ben-Natan, Aliza Vaknin, Mohammed Ganayem, Yael Galnoor Tene, Linor Ishay, Olga Simon Feld, Milena Pitashny, Alvira Zbiger, Rena Abilevitch, Said Younis and Elias Tannous

593 Healthcare-associated *Pneumocystis jirovecii* transmission in the era of universal masking and distancing
Florence Durocher, Simon Frédéric Dufresne, Philippe Jean Dufresne and Xavier Marchand-Senécal

599 Can machine learning support infection control measures by predicting carbapenemase-producing Enterobacterales colonization at admission?
Shuk-Ching Wong, Edwin Kwan-Yeung Chiu, Jonathan Daniel Ip, Simon Yung-Chun So, Kelvin Hei-Yeung Chiu, Edmond Siu-Keung Ma, Kwok-Yung Yuen and Vincent Chi-Chung Cheng

609 Impact of time to antibiotic optimization following inadequate or excessive empiric therapy on clinical outcomes
Yusuke Niinuma, Nobuhisa Ishiguro, Yuki Morikaku, Keita Hanaoka, Keisuke Kagami, Mitsuru Sugawara and Yoh Takekuma

Cover image: ***A Victim of Outside Forces,*** **2021**

https://doi.org/10.1017/ice.2025.10278 Published online by Cambridge University Press

618 Latent tuberculosis infection screening and treatment outcomes in healthcare workers in Irish hospitals: a multi-centre cohort study
Melva Tan, Zainab Albaggal, Ciara Anderson, Daragh McGee, Cian Carey, Aoife Hehir, Dominick P. Natin, Maria Lenehan, Brian McCullagh, Lorraine Dolan, Eleanor Cronin, Noirin Noonan, Michelle Coleman, Anne Marie McLaughlin, Eileen Sykes, John Gallagher, Sarah O'Beirne, Deborah Moriarty, Grant Jeffrey, Eoin Feeney, Colm Bergin, Catherine Fleming, Arthur Jackson, Joseph Keane, Carlos Mejia-Chew and Liam Townsend

Concise Communications

626 Potential for misclassification of community-acquired respiratory virus infections as healthcare-associated respiratory virus infections at a pediatric healthcare system
Zachary M. Most, Trish M. Perl and Michael Sebert

630 A decade of change: evolving epidemiology of invasive pulmonary mold infections in hematologic malignancy patients from a longitudinal infection control surveillance program
Guy Handley, Jane Powell, Dimitrios P. Kontoyiannis, Adina Feldman, Micah Bhatti, Roy F. Chemaly and Amy Spallone

633 Use of a large language model integrated within the electronic medical record for the evaluation of surgical site infections – Northern California, 2025
Eugenia Miranti, Timothy Keyes, Alvaro Ayala, Nerissa Ambers, Gina Newman, Elmer de Leon, Erika Paola Viana-Cardenas, Wajeeha Tariq, Mindy Sampson and Jorge L. Salinas

636 Use of a large language model for surveillance of central line-associated bloodstream infections at a pediatric medical center
Connor Stevenson, Matthew McHugh, Angela Alburei, Sharad Singh, Elyse Morin, Rajiv Kolagani, Joseph Fishbein, Larry K Kociolek and Ayelet Rosenthal

639 Evaluation of antimicrobial prophylaxis procedures in cardiac surgery patients with delayed sternal closure
Ahmed Albakheet, Brian Schuler, Felicia Wang, Justin Culshaw and Jeffrey Pearson

644 Implementation and assessment of a postreprocessing endoscope surveillance program at the University of Kentucky, 2019–2024
Court Desmond, Faith Fursman, Derek Forster, Julie A. Ribes, Sandra L. Mills, Kimberly Blanton, Kevin Hatton, Rachel Howard, David Olafsson, Sean McTigue, Nicholas Van Sickels, Sherese Hinton, Deborah R. Flomenhoft and Takaaki Kobayashi

Letter to the Editor

647 Split-surface randomization as a pragmatic design for early-phase environmental disinfection trials
Bobby G. Warren, Amanda M. Graves, Aaron Barrett, Guerbine Fils-Aime, Nicholas A. Turner, Becky A. Smith and Deverick J. Anderson

Corrigendum

649 Platelet-rich plasma therapy: key infection prevention practices and strategies for safety risk reduction – CORRIGENDUM
Rebecca A. Stern, Jennifer Andrews, Katherine Bashaw and Thomas R. Talbot

https://doi.org/10.1017/ice.2025.10278 Published online by Cambridge University Press

INFECTION CONTROL & HOSPITAL EPIDEMIOLOGY

cambridge.org/ICHE

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
Tara N. Palmore, M.D., Washington, D.C.

ASSOCIATE EDITORS
Westyn Branch-Elliman, MD, MMSc • Los Angeles, CA, USA
Joshua K. Schaffzin, MD, PhD • Ottawa, ON, Canada
Trevor C. Van Schooneveld, MD • Omaha, NE, USA
David Weber, MD, MPH • Chapel Hill, NC, USA

STATISTICS CONSULTANT
Jessina C. McGregor, PhD • Portland, OR, USA
Eric T. Lofgren, MS, PhD • Pullman, WA, USA

DIRECTOR OF PUBLICATION
Lindsay MacMurray, Brooklyn, NY, USA

MANAGING EDITOR
Julia Russo, Washington, D.C., 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
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
LaToya A. Forrester, MPH, CIC • Bethesda, MD, 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
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
Jan 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
Sanjay Saint, MD, MPH • Ann Arbor, MI, USA
Felicia A. Scaggs Huang, MD, MSc, Cincinnati, OH, 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
Marcus Zervos, MD • Detroit, MI, USA

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

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.

Subscriptions
The individual subscription prices for 2026 are: Print & Online: $411; Online Only: $288. 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).

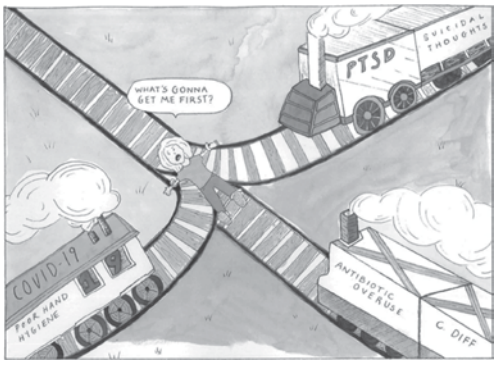
Postmaster: Send address changes to *Infection Control & Hospital Epidemiology*, Cambridge University Press, One Liberty Plaza, New York, NY 10006 USA.

About the cover:

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

2026



Title: *A Victim of Outside Forces,* 2021
Artist: Lois Bence-Ehlke, RN, BS
Medium: pen and ink sketch

Mrs. Bence-Ehlke spoke to ICHE about her artwork.
What was the inspiration for this artwork?
I am a member of the Patients Engaged in Education and Research (PEER) Group at the University of Wisconsin-Madison. At a meeting in 2021, the group leader encouraged us to think of ways we could use art to highlight the importance of infection prevention in healthcare settings. Not too long after that, I was admitted to a hospital with sepsis. This was relatively early in the COVID-19 pandemic. I saw that the staff were tired and that they had more to do than time to do it. I wondered if I would get the help I needed and worried about getting another infection before I was well enough to go home.

I thought of the idea for this cartoon and sketched it out while I was in my hospital bed. I wanted to make people think about what patients experience while they are in the hospital or receiving medical care in other settings. They are dealing not only with the physical and mental health conditions that initially brought them in but also with many outside forces that may worsen their existing problems or create new ones. These threats include poor hand hygiene by healthcare personnel, overuse of antibiotics, and infections like *C. difficile* and respiratory viruses that can be spread by other patients, healthcare personnel, and the healthcare environment. Patients have little to no control over these forces and may not even be aware of these threats. Even if they are aware of them, many patients are not comfortable raising their concerns to their doctors, nurses, or other care providers. They are simply left to wonder "which of these things is going to get me first?"

What is your personal connection to the content of *ICHE*?
I had a long career as a registered nurse. I began my career as a psychiatry nurse. I was then hired to be the very first infection prevention nurse in a small community hospital after an outbreak of *Staphylococcus aureus* infections occurred in the hospital's newborn nursery. I spent 20 years in infection prevention. During that time, I saw firsthand the many challenges one encounters when trying to implement changes that will make healthcare safer. I also witnessed increasing recognition that healthcare-associated infections are preventable and tremendous growth in our ability to prevent many of these infections. Unfortunately, we still have a long way to go.

Cover image: *A Victim of Outside Forces,* 2021

https://doi.org/10.1017/ice.2025.10278 Published online by Cambridge University Press

In addition to my professional connections to ICHE, I also have personal connections. My first husband developed pneumonia as a complication of leukemia and its treatment. I currently have friends who are unable to live their lives in the way that they want due to recurrent *C. difficile* infections they developed because of antibiotic therapy that may have been unnecessary.

Given the scope of the journal, why is this work appropriate for the cover of *Infection Control & Hospital Epidemiology*?
This sketch shows, from the patient's perspective, the importance of identifying and eliminating the infection-related threats we all currently experience when we receive health care.

Lois Bence-Ehlke lives in Wisconsin with her two miniature schnauzers. She is a member of the Patient and Family Advisory Council and the Patients Engaged in Education and Research (PEER) Group at the University of Wisconsin-Madison. She developed the concept and initial sketch for this comic. It was later enhanced by the PEER coordinator, Sydney Hoel. *The project was supported by the NIH National Center for Advancing Translational Sciences (NCATS), grant UL1TR002373. The content is solely the responsibility of the artist and does not represent the opinion of the NIH or the University of Wisconsin.*

https://doi.org/10.1017/ice.2025.10278 Published online by Cambridge University Press