VOLUME 23, NUMBER 8 AUGUST 2002

An Official Journal of The Society for Healthcare Epidemiology of America

PUBLISHED FOR THE SOCIETY BY SLACK INCORPORATED

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY®

EDITORIAL	
Control of Vancomycin-Resistant Enterococci: It Is Important,	
It Is Possible, and It Is Cost-Effective C. GLEN MAYHALL, MD	420
ORIGINAL ARTICLES	
A Prospective Study to Determine Whether Cover Gowns in Addition to Gloves Decrease Nosocomial Transmission of Vancomycin-Resistant Enterococci in an Intensive Care Unit ARJUN SRINIVASAN, MD; XIAOYAN SONG, MD, MS; TRACY ROSS, BSC; WILLIAM MERZ, PHD; ROY BROWER, MD; TRISH M. PERL, MD, MSC	424
Cost-Effectiveness of Perirectal Surveillance Cultures for Controlling	424
Vancomycin-Resistant Enterococcus	
CARLENE A. MUTO, MD, MS; EVE T. GIANNETTA, BSN, CIC; LISA J. DURBIN, BS, MT (ASAP); BARBARA M. SIMONTON, CLT (HEW); BARRY M. FARR, MD, MSC	429
Recurrence of Vancomycin-Resistant <i>Enterococcus</i> Stool Colonization During Antibiotic Therapy Curtis J. Donskey, MD; Claudia K. Hoyen, MD; Sarbani M. Das, BA;	
MARION S. HELFAND, MD, PHD; MICHELLE T. HECKER, MD	436
An Outbreak of Multidrug-Resistant Pseudomonas aeruginosa	
Associated With Increased Risk of Patient Death in an Intensive Care Unit Geir Bukholm, MD, PhD; Tone Tannæs, MSc; Anne Britt Bye Kjelsberg, RN, BSc; Nils Smith-Erichsen, MD, PhD	441
Molecular Characterization of Methicillin-Resistant Coagulase-Negative Staphylococci From a Neonatal Intensive Care Unit	-
Isabel Bogado, MS; Adriana Limansky, MS; Emma Sutich, PhD; Patricia Marchiaro, MS; Marta Marzi, MS; Juan Putero, MD; Alejandro Viale, PhD	447
Risk Factors for Infection and Molecular Typing in Patients in the	
Intensive Care Unit Colonized With Nosocomial Enterobacter aerogenes Michael Piagnerelli, MD; Eric Carlier, MD; Ariane Deplano; Philippe Lejeune, MD, PhD; Danielle Govaerts, MD	452
Nosocomial Outbreak of Serratia marcescens in a Neonatal Intensive Care Unit	
Ojan Assadian, MD, DTM&H Angelika Berger, MD; Christoph Aspöck, MD; Stefan Mustafa, MD, PhD; Christina Kohlhauser, MD; Alexander M. Hirschl, MD	457
Patients in the Intensive Care Unit Are Exposed to Amoeba-Associated Pathogens Bernard La Scola, MD, PhD; Liazyd Mezi, MD; Jean-Pierre Auffray, MD; Yvon Berland, MD; Didier Raoult, MD, PhD	462
CONCISE COMMUNICATIONS	
Prevalence and Acquisition of Vancomycin-Resistant Enterococci in a	
Medical Intensive Care Unit David Gardiner, MD; Sheila Murphey, MD; Elizabeth Ossman, RN; Donald Jungkind, PhD	466

SHEA Hall of Honors

The Society for Healthcare Epidemiology of America gratefully acknowledges support provided by our 2002 12th Annual Scientific Meeting corporate sponsors.

Platinum Sponsors

Cubist Pharmaceuticals Wyeth Pharmacueticals Pharmacia

Gold Sponsor

Aventis Pharmaceuticals

2002 Fellowship Support

Ortho McNeil Fellowship in Antimicrobial Management GlaxoSmithKline Fellowship in Surgical Site Infections

And Special Thanks to our 12th Annual Scientific Meeting Sponsors

Cubist Pharmaceuticals

Special Bioterrororism Session Welcoming Reception Bioterrorism Session-on-Line

Merck & Co.

Meet-the-Consultants Meeting Abstracts-on-Line

Edwards Lifesciences

Trainee Travel Awards

GlaxoSmithKline

Attendee Continental Breakfasts

BD Medical Systems

Dessert Reception Attendee Totebags

Bard Medical Division

Young Investigator Award Faculty Support

Bristol-Myers Squibb

Message Center Sponsorship

GOIO Industries

Attendee Pens and Notebooks

Bayer

General Support

Kimberly-Clark

Faculty Support

Care IV

Faculty Support

Vol. 23 No. 8 August 2002

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY®

CONTENTS

Continued from cover

An Outbreak of Vancomycin-Resistant Enterococci in a Hematology-Oncology Unit: Control by Patient Cohorting and Terminal Cleaning of the Environment Mary Lu Sample, RN, CIC; Denise Gravel, MSc, CIC; Cathy Oxley, ART, CIC; Baldwin Toye, MD, FRCPC;	400
GARY GARBER, MD, FRCPC; KARAM RAMOTAR, PHD Impact of Infection by Vancomycin-Resistant Enterococcus on Survival and	468
Resource Utilization for Patients With Leukemia	
Peter B. Bach, MD; Sharp F. Malak, BA; Joseph Jurcic, MD; Sarah E. Gelfand, BA; Janet Eagan, RN, MPH; Claudia Little, BA; Kent A. Sepkowitz, MD	471
Undetected Vancomycin-Resistant <i>Enterococcus</i> Stool Colonization in a Veterans Affairs Hospital Using a <i>Clostridium difficile</i> —Focused Surveillance Strategy Amy J. Ray, MD; Claudia K. Hoyen, MD; Sarbani M. Das, BA; Elizabeth C. Eckstein, RN;	
Curtis J. Donskey, MD	474
Completely Resistant Acinetobacter baumannii Strains Siham Mahgoub, MD; Jimi Ahmed, RN; Aaron E. Glatt, MD	477
LETTERS TO THE EDITOR	
Trends in Antimicrobial Susceptibility Patterns Among Inpatient Enterococcal Isolates (1990 to 1999): Implications for Therapeutic Options	416
EBBING LAUTENBACH, MD, MPH; JEAN BALDUS PATEL, PHD; WARREN B. BILKER, PHD; NEIL O. FISHMAN, MD	410
Improving Healthcare Workers' Compliance With Hand Hygiene: Is a Picture Worth a Thousand Words?	440
Amy J. Ray, MD; Claudia K. Hoyen, MD; Elizabeth C. Eckstein, RN; Curtis J. Donskey, MD	418
MEDICAL NEWS GINA PUGLIESE, RN, MS; MARTIN S, FAVERO, PHD	480

To view abstracts of these articles, visit us on the Internet at http://www.slackinc.com/general/iche

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 Road, Thorofare, NJ 08086. Telephone: (856) 848-1000.

SHEA: 19 Mantua Rd., Mt. Royal, NJ 08061; telephone, 856-423-0087; fax, 856-423-3420; e-mail address, sheahq@talley.com.

COPYRIGHT 2002 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-\$109.00; Two years-\$169.00; Three years-\$229.00; Institutional: One year-\$154.00; Two years-\$229.00; Three years-\$229.00; Three years-\$24.00. Fellows: \$54.50 per year with proof of training status. Canada: add 7% Goods & Services tax; Overseas: add \$49.00 each year for delivery by air service. Single copies of current issues may be obtained for \$19.00.

INSTRUCTIONS TO AUTHORS: Authors may submit manuscripts prepared in accordance with the 2001 revision of the "Uniform Requirements for Manuscripts Submitted to Biomedical Journals." A digital version it available at www.icmje.org. Submit to ICHE Editorial Office, SIACK Incorporated, 6900 Grove Road, Thorofare, NJ 08086, USA. All submissions must be accompanied by copyright form(s) signed by all authors (see January issue or our web site).

REPRINTS: All requests to reprint or use material published herein should be addressed to Karen Lambertson, SLACK Incorporated, 6900 Grove Road, Thorofare, NJ 08086. For reprint orders and prices, contact Karen Lambertson at (856) 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 \$.20 per page is paid directly to Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923; phone (978) 750-8400. 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 6 weeks in advance of effective date. Include old and new addresses with zip codes. The publisher cannot accept responsibility for undelivered copies. Periodicals postage paid at Thorofare, New Jersey 08086-9447 and at additional mailing offices. POSTMASTER: Send address changes to SLACK Incorporated, 6900 Grove Road, 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.

Vol. 23 No. 8 August 2002

EDITORIAL OFFICE

SLACK Incorporated 6900 Grove Road Thorofare, NJ 08086

(856) 848-1000; (856) 848-6091 (FAX)

E-mail: iche@slackinc.com

EDITOR

Barry M. Farr, MD, MSc

DEPUTY EDITORS

David P. Calfee, MD, MS

William R. Jarvis, MD

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

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

Infections in Immunocompromised

Patients

Kent Sepkowitz, MD

New York City, New York

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

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

Executive Vice President Richard N. Roash

John C. Carter

Editorial Director

Jennifer Kilpatrick

Executive Editor

Associate Editor

Shirley P. Strunk, ELS

Eileen C. Anderer, ELS

Vice President, Publishing Operations

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY®

EDITORIAL ADVISORY BOARD

Paris, France

Cincinnati, Ohio

Chicago, Illinois

Havana, Cuba

Atlanta, Georgia

Creteil, France

Munich, Germany

Yakima, Washington

Providence, Rhode Island

Columbia, South Carolina

Boston, Massachusetts Shreveport, Louisiana

Charlottesville, Virginia

Milwaukee, Wisconsin

Manhasset, New York

Freiburg, Germany

Denver, Colorado

St. Louis, Missouri

Atlanta, Georgia

Beer Sheva, Israel

Nashville, Tennessee

Bethesda, Maryland

Los Angeles, California

Charlottesville, Virginia

Nashville, Tennessee

Nashville, Tennessee

Nashville, Tennessee

Brussels, Belgium

Bronx, New York

Atlanta, Georgia

Buffalo, New York

San Antonio, Texas

Iowa City, Iowa

Houston, Texas

Vienna, Austria

Jerusalem, Israel

Trenton, New Jersey

Mexico City, Mexico

New York, New York

Madison, Wisconsin

New York, New York

Brentwood, Tennessee

Millwood, Virginia

Barcelona, Spain

Chicago, Illinois

São Paulo, Brazil

Evanston, Illinois

Greifswald, Germany

New York City, New York

Prahran Victoria, Australia

Minsk, Republic of Belarus

Greenville, South Carolina

Beijing, People's Republic of China

Madison, Wisconsin

Bethesda, Maryland

Toronto, Ontario, Canada

Montreal, Quebec, Canada

Pittsburgh, Pennsylvania

Pittsburgh, Pennsylvania

Minneapolis, Minnesota

Winnepeg, Manitoba, Canada Helsinki, Finland

Taipei, Taiwan

Chapel Hill, North Carolina San Diego, California

Black Butte, Oregon

Farmington, Connecticut

Jacques F. Acar, MD

J. Wesley Alexander, MD Paul Arnow, MD

Neil L. Barg, MD

Manuel Bastanzuri, MD Elizabeth Ann Bolyard, RN, MPH, CIC

John M. Boyce, MD

Professor Dr. Ilja Braveny

Christian Brun-Buisson, MD

Charles Bryan, MD

Donald E. Craven, MD Sue Crow, MSN, RN, CIC

Franz Daschner, MD

Leigh G. Donowitz, MD

Charles E. Edmiston, Jr., PhD

Theodore C. Eickhoff, MD

Bruce Farber, MD

Victoria J. Fraser, MD Peter C. Fuchs, MD, PhD

Richard A. Garibaldi, MD

Robert Gaynes, MD

Velvl Greene, PhD, MPH

David W. Gregory, MD

David K. Henderson, MD

Peter N.R. Heseltine, MD

Karen Hoffmann, RN, CIC, MS

Marguerite McMillan Jackson, RN, PhD

Janine Jagger, MPH, PhD

Douglas S. Kernodle, MD

Robert H. Latham, MD

Lewis B. Lefkowitz, MD Hsieh-Shong Leu, MD, MSc

Jack Levy, MD

Victor Lorian, MD

Dennis G. Maki, MD

William J. Martone, MD Allison McGeer, MD

John E. McGowan, Jr., MD

Jonathan L. Meakins, MD, DSc

Robert R. Muder, MD Carlene A. Muto, MD, MS

Joseph M. Mylotte, MD, CIC

Lindsay Nicolle, MD

Juhani Ojajärvi, MD

Michael T. Osterholm, PhD, MPH Jan Evans Patterson, MD

Sindy M. Paul, MD

Michael A. Pfaller, MD Samuel Ponce de Leon, MD, MSc

Isaam Raad, MD Manfred L. Rotter, MD, DipBact

Theodore Sacks, MD Lisa Saiman, MD, MPH

William E. Scheckler, MD

Kent Sepkowitz, MD

Denis Spelman, MD

Michael L. Tapper, MD

Clyde Thornsberry, PhD

Professor Leonid P. Titov Timothy R. Townsend, MD

Antoni Trilla, MD, PhD

Professor Wang Shu-Qun

J. John Weems, Jr., MD

Robert A. Weinstein, MD

Professor Dr. W. Weuffen

Sergio B. Wey, MD

Rebecca Wurtz, MD

SLACK Incorporated

6900 Grove Road Thorofare, New Jersey 08086 (856) 848-1000

Circulation Manager Lester J. Robeson, CCCP **Production Director**

Christine Malin

Production Coordinator Joanne Patterson

Vice President, U.S. Advertising

Wayne McCourt Pharmaceutical Group Sales Director

Robin Geller

Advertising Sales Representative Michael Raftery

Advertising Sales Coordinator Jennifer Kelly

Classified/Recruitment Sales Manager

Classified/Recruitment Sales Representative

David Kevoian

Make a good impression...

Let Infection Control and Hospital Epidemiology highlight your article with professionally designed reprints!

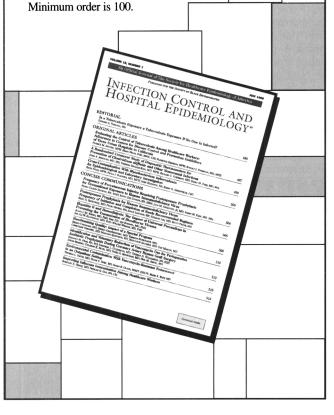
Enhance your image and get more from the information you find in *Infection Control and Hospital Epidemiology* with article reprints. SLACK Incorporated offers attractive reprints on quality gloss paper in your choice of black and white or full color.*

The power of color can make your article reprint stand out and be noticed. Your reprints will be assembled into a bound booklet for that polished, professional look.

Make your impression with Infection Control and Hospital Epidemiology article reprints.

For a free quotation, call Karen Lambertson at 1-800-257-8290 (In NJ, call 1-856-848-1000) E-mail: klambertson@slackinc.com

*Available on a quotation basis only.



PICTURE YOURSELF IN A CAREER ON THE CAROLINA COAST.



Why not live the best of both worlds?

A rewarding career with unlimited growth...and a warm, wonderful coastal lifestyle.

It's all here at New Hanover Health Network in Wilmington, North Carolina. Where your career opportunities are wide open, and the people are welcoming, supportive and responsive.

And what a great place to live. Historic Wilmington is a vibrant community, with cultural diversity and beautiful beaches.

Nurse Epidemiologist

Conduct surveillance and evaluate epidemiological activities hospital-wide. Provide consultation on all infection control policies and practices; support medical staff committees and participate in the orientation of new employees. Responsible for reporting all required communicable diseases, identifying out breaks and initiating control measures under the direction of the Infectious Disease Consultant. Eligible for RN licensure in NC with CIC certification and five years' clinical experience with at least one year in infection control required.

All things considered, this is what quality of life—and work—is all about.

New Hanover offers attractive salaries, comprehensive benefits, relocation assistance and tuition reimbursement for your continuing education.

EXCEPTIONAL PEOPLE

MAKING A DIFFERENCE.



New Hanover Health Network

WILMINGTON, NORTH CAROLINA

Equal Opportunity Employer

WARM UP TO NEW HANOVER WITH A FREE VIDEO TOUR

Take a closer look at a rewarding career at New Hanover Health Network, and get a taste of the good life in the captivating coastal town of Wilmington, NC.

Just call our nurse recruiter toll free at 1-877-781-2468

Or Visit www.nhhn.org